

## Exploring antibiotic withdrawal periods – interview and focus group discussion data

### Farm 1:

#### Visit 1:

I1: could you ask what he has here, so tell us about the pigs

I2: <speaks in Swahili> how many pigs and how are you keeping them?

P1: They are mothers, they are year one.

P2: <In Swahili> There are three.

P1: Three mothers

I1: Three sows ok. And sows, piglets. Aah she's lovely. Nzuri sana. (Very nice) So 5 piglets with one sow.

I2: and then there is another one there

I1: So you have another sow, with six piglets. How old are the piglets

I3: 1 month <translating P2>

I1: 1 month ok. So first time to have piglets

P1: yes

I1: and how are the piglets

P2: they are cool (in Swahili)

I1: they are good, you are happy with them?

P2: they are good (in Swahili)

I3: speaking in Swahili to P2. So he gives the food

P2: Sow and weaner

I2: the weaner, the weaner food.

I1: Ah ok.

P1: Also the lefovers. Leftovers. From our hotel.

I1: Ok.

P1: also eats that.

I1: and what do they like most?

I2: <translating P2> they like the weaner food.

I1: They like the weaner food. And you have another?

P2: Yeah

I1: Ah little ones. So you have another, many, 12. Very good

And so, first time as well.

I2: <translating P2> second time.

I1: and how old?

<Inaudible>

I1: A week old?

P1: not yet. They were born on Sunday.

I2: so less than 1 week

I1: and so, there are piglets over there?

P1: Mhmm

I1: Whose are they?

P1: I think their mother got sold.

I1: Ah ok. So can we count how many where in the pen?

I3: 13 piglets

P1: Her mother got sold.

I1: All from one mother?

P2: Yes

I1: That's good. Very good. So any other pigs?

P2: In here

I1: 4 of kind of 60kgs. So whose are these P2?

P2: They were raised here.

I1: From which sows? A sow here?

P2: <Swahili>

I2: The dam was sold.

I1: Ok.

P1: It's like all their mothers were sold eh. Four were sold.

I1: And more here?

P1: They are piglets.

I1: Mbili? (Two?)

P2: Tato (Three)

I1: Ok.

P1: Their mothers were sold.

I1: Five. Still piglets. Little piglets. They look good! So, you sell to <LIA>?

P1: Yes

I1: Ok. When do you want to sell?

P1: When they are big enough

I1: Do you know age, weight?

P1: Not really, but the vet has records. I don't know.

I2: At what point do you know when to sell them?

I1: How do you decide?

P1: Size

I1: So these ones, are these nearly ready or long off? <Pointing at 50kg ish pigs

P1: Not yet

I1: A few months?

P1: Yeah, probably.

I1: Cool. Perfect. Can we see what you feed them?

P1: P2, food wapi? (where?)

<translating P2> Oh it is over.

But have they eaten already?

P2: Mm

P1: They have already eaten

I1: So what do you do to keep them healthy?

I2 translating for P2: They call in a vet.

I1: Anything else?

I2 translating for P2: Nothing else.

<Speech in Swahili>

P1: Yeah the vet comes, he does all that.

I1: Ok what, so I don't know what you are saying. What do you do?

P1: When the vet comes I think he does all that. But not all the time i am here so maybe when he comes i am not...

I4: And oral supplements?

P1: I think he does. He is the one with the records. I am not really sure but I think he does.

I1: And so, it looks clean, you clean?

P2: Yes

I1: Vaccines? Chango? (Vaccines)

<Speak in Swahili>

I1: You do?

I2: The vet does them.

I1: Docteri comes here?

P2: A na kuja hapa. (He comes here)

I1: Yes he comes here. And do you have any medicines here? Una dawa hapa?

I3 translating for P2: The doctor comes.

I1: The doctor comes.

### **Visit 2:**

I1: How are the pigs?

P2 through I2 translation I2: No problems

I1: Have you sold any?

P2 through I2 translation I2: No

I1: Were these with mum last time?

P2 through I2 translation I2: They were like that.

I1: And you have feed today. So you feed them once a day, twice a day.

P2 through I2 translation I2: Twice a day.

I1: Show me everyone else. So these guys were the.... <inaudible> hungry. They look good.

And who was up here? They are calmer today. They are happy.

P2 through I2 translation I2: So now two weeks old.

I1: I like your shavings. You are happy with them?

P2: Yes

I1: And she is milking well.

Shall we look in the bucket? Have you had any?

P2 through I2 translation I2: He has not had any

I1: Has the vet come at all?

P2 through I2 translation I2: He hasn't come.

I1: Nothing in here, it's all fine. Can we come and see you next week. Is that ok?

P2 through I2 translation I2: It's ok

**Visit 3:**

One pig had bad joints – it looked like mycoplasma. P2 said they might call a vet.

Nothing in the bucket or on the chart

**Visit 4:**

P2 wasn't there but P1 thought the vet had been. Iron injection in bucket and on chart, P1 said maybe the piglets had diarrhoea but was not sure of details.

**Visit 5:**

Through Nick.

P2 through I2 translation: He is fine, pigs are fine.

I1: Anything happen this week?

P2 through I2 translation: The one that was sick has not recovered.

I1: Oh dear. Have you done anything?

P2 through I2 translation: They have given tablets but it is not working.

I1: Ok. Do you know which tablets?

P2 through I2 translation: No

I1: Did they write?

I2: Let's see

(Nothing written on the chart)

P2 through I2 translation: He may come today or tomorrow.

I1: So we were just hearing about this pig here, so the vet came?

P1: Ah yes yes yes. Actually he said that the pig will be slaughtered for the dogs. I don't know if, he cannot treat it or something.

I1: Ok, so the vet can't treat it. So how will you slaughter?

P1: P2 will slaughter, I don't know.

P2 through I2 translation: He'll just slit its throat.

I3: And then you'll give it to the dogs?

P1: No, cook.

I1: Cook and for you or for the dogs?

P1: For the dogs.

I1: And what do you normally do when a pig dies?

P2 through I2 translation: They slaughter for the dogs.

I1: So you never eat yourself you just give it to the dogs?

P1: Actually i don't like pork.

I1: That's fine, that's fair. Any other news?

P2 through I2 translatioI2: No news.

I1: The tablet, who was giving the tablet? Was that the vet or was that you?

P2: Dacteri

I1: So they just gave one?

P2 through I2 translatioI2: Once.

I1: So in here, I have got some medicines that I would like to see if you recognise them and to understand if you have used them on the pigs. So this says recognise. And this says don't recognise. So I'm gonna give you one and a time and between you tell me if you have seen it before.

P2: Hapana

[Sounds of sorting.]

P1: You know personally, I am not the one who is treating the pigs. So i wouldn't know the medicines. It's like i don't recognise any of them.

I1: That's ok!

I1: So P2 do you know how you recognise this one?

P2 through I2 translatioI2: The doctor came with it. He normally comes with it

P2 through I2 translatioI2: Number 15

The doctor came with it. [Number 13]

Not on the pigs on the dogs.

36 - He normally uses.

26 - He normally uses that.

20 - He's come with it.

I1: So now, I would like you to sort these into the ones you have used and the ones you have not used on the pigs. Just on the pigs.

P2 through I2 translatioI2: Mostly this

I1: Ok so he mostly uses the oxytet 10% [26]

P2 through I2 translatioI2: And also this [36]

[Also put 35 in]

I1: Ok great. And now I want you to sort these ones into ones you use frequently and ones you don't use frequently.

P2 through I2 translatioI2: This is what we use mostly [35 and 26]

I1: Now we are gonna put these back together, and this is the last one. We will do, used in the last month and not used in the last month.

P2 through I2 translation: They've used this in the last month. This has been used also this month.

I1: 26, 35 + 36. The three that you had used, what have you used them for?

P2 through I2 translation: Diarrhoea and lack of appetite [26]

I1: In piglets or in adults?

P2 through I2 translation: Young ones, piglets.

I1: And the vet injected or you injected?

P2: Dacteri

I1: And this one? [35]

P2 through I2 translation: Deworming

I1: And this one? [36]

P2 through I2 translation: For the big ones.

I1: And what was wrong?

P2 through I2 translation: Anoxeria again.

I1: Ok so you had an adult pig not eating and you gave this?

P2 through I2 translation: Yeah.

I1: So my last question to you is if a pig gets sick just before sending to slaughter, and you have to give a medicine, what do you do?

P1: Can i answer for him?

I1: Please do.

P1: They don't. They don't take to the machinjio [abattoir] because the pig was sick. Yeah it has already taken the medicine so we don't know if that it will get better or if you take there and the meat is not good for consumption.

I1: Ok so if they have had a medicine, then the meat might not be good for consumption.

P1: Yes

I1: So you don't take to the abattoir? What would you do?

P1: We would first let it stay, observe it. And then see how it behaves. If it gets better then we will take it. If it doesn't get better then maybe we can slaughter it to the dogs.

I1: And so how do you know how long to wait between giving the medicine and sending to slaughter?

P1: As a Kenyan you just observe. You see if it gets better.

I1: So do you have an amount of time between giving the medicine and sending to slaughter that you would want to wait?

P1: Yes. Maybe probably a month.

I1: A month. Brilliant. If i show you this [pointed to withdrawal time], do you know what that means?

P1: No i don't

I1: But the important this is that you wait, which is brilliant. Does the vet tell you to wait? Or do you know to do that?

P1: I think it is just common sense. It's like a person, when you are sick you just, you take medicine and then you wait to see if you will get better. So it applies also to the pigs when you give medicine, you wait to see if it gets better.

I1: Ok, so when the vet comes they won't tell you how long to wait?

P1: Maybe P2 can answer that cause I don't know. For me, it's common sense. It's like you take medicine, you wait.

I1: P2, when the vet comes and gives a medicine, does the vet tell them to wait a certain amount of time before sending to slaughter?

P2 through I2 translatioI2: He said he normally tells to observe for 3 days.

I1: Do you think most people would wait before sending to slaughter? Do you think that's something most Kenyans know what to do?

P1: I think. I think most will wait to see how the pigs behaves. Because i don't think they would take it to the slaughterhouse when it is sick and it is going to other people. Many they might catch what the pig has.

I1: How did you find the study?

P1: It was nice

I1: How did P2 find it?

P2: Iko sawa

I1: How did you find recording?

P2: Iko sawa

I1: Did you find it annoying to do or did you find it useful?

P1: Useful

I1: Useful, why did you find it useful?

P1: For your research.

I1: Thank you, yes I find it useful.

## Farm 2

### Visit 1

I1: Could you show us around the pigs and tell us about them.

P1 through I3 translation: I2: So she puts disinfectant here, there is a leakage there. It was full but there is a leakage. You dip first before you enter. There is disinfectant there.

I1: Great.

P1 through I3 translation: I2: So, due to leakage that is why it is minimal. It will be repaired.

Is the mother of all of them. They have the piglets only. These are piglets for this mother. So that's why they have divided them. Due to violence for they are beating each other.

This is the mother of these ones, they have sold the other ones.

I1: Ok.

P1: Just one mother now.

I1: So mother and boy. So you keep for breeding?

P1 through I3 translation: I2: She doesn't know why the owner has kept it here, that is not for breeding.

This is a male. So they are the ones that are fighting with the others, so these are males.

I1: And how old, do you know?

P1 through I3 translation: I2: 5 months

I1: So I'd say 50kg something like that.

P1 through I3 translation: I2: 4 months, but not the same mother as these. Yeah from another mother.

I1: Ok so 3 piglets there and we've seen 3, 4 month piglets. So that makes 4 from that litter.

P1: They are the same. How many, 9.

I1: Nine of that litter.

P1 through I3 translation: I2: So these and the other piglets there and that one are from one mother.

I1: And you still have the mother?

P1: No. Sold.

I1: You sold her to <LIA>?

P1: Yes

I1: And who is in here?

P1 through I3 translation: I2: They are the same, those two are fighting.

She is asking whether they can be inseminated. But I am telling her to talk to her vet. So they are females.

These are females and those are males. Those that were fighting, they are the same as these.

I1: Ah little one. <Talking about lone and injured pig>

P1 through I3 translatioI2: She was born with a problem.

I: So was born like that?

P1: Yes

I1: So what will you do?

P1 through I3 translatioI2: Just give them feeds.

P1: Just feeding.

I1: So you are keeping separate to protect or...

P1 through I3 translatioI2: Due to feeding. She feeds slowly. With that competition of feed intake, that why they have separated.

I1: So are the you happy with the health of the pigs at the moment?

P1: They are good.

I1: And so you send to <LIA>, how often do you send?

P1 through I3 translatioI2: It's according to the owner. The decision is with the owner.

I1: And do you know how old you normally send?

P1 through I3 translatioI2: That lot that they take to slaughter it was one and a half year.

I1: But that was the sow?

P1 through I3 translatioI2: It was a female and a male.

I1: What do you feed them, what do they eat? Chakula

P1: Tu ende (we go) Sow and weaner.

I1: Lovely, and meal. And so, sow and weaner meal. So, everyone gets the same or different?

P1 through I3 translatioI2: They use piglets they use to mix them with bran. There, so the weaner and bran, wheat bran.

P1: Just that.

I1: Anything else?

P1 through I3 translatioI2: This commercial feed they take them in the morning, but in the evening they do cook. Like vegetables that is kale, spinach, they also cook potato peels. Yeah. And then they give them in the evening.

I1: So you cook just for the pigs, or you and the pigs.

P1: Ah no, just for the pigs.

I1: Ah lucky pigs.

P1 through I3 translation: They are saying that there is one that is cooking there for this evening.

I1: And when you eat, do they get leftovers from your food?

P1 through I3 translation: There is no remaining food. They complete it.

I1: So they get their own chef.

P1 through I3 translation: Yes they cook their own.

I1: What do you do to keep the pigs healthy, to stop them from getting sick?

P1 through I3 translation: So one thing, they don't bring other pigs from outside. So they do artificial insemination. And then they breed their pigs here. And then they use footbath here. So when you are getting in you dip your feet before you get in.

I1: And do you do the artificial insemination yourself?

P1: No doctor.

P1 through I3 translation: They call a vet.

I1: And where do you get the artificial insemination from?

P1 through I3 translation: The vet come with the inseminations, the semen.

I1: And they do it. So no pigs on.

P1 through I3 translation: The owner said he will find a boar outside and bring one here. Currently they don't have it so they AI.

I1: Any vaccines?

P1 through I3 translation: So she is saying they start from 3 months.

I1: And who gives the vaccine?

P1 through I3 translation: Doctor

I1: And do you know what it is for?

P1 through I3 translation: She doesn't know. The doctor does it

I1: Do you keep any medicines here?

P1: Hapana

## **Visit 2**

I1: How has your week been?

P1 through I2 translation: It was good but this one has been served.

I1: This one. That's good. AI straws!! (In the bucket)

I1: Can we look? Can I see?

(Also the chart was filled out for the AI straws)

Perfect.

P1 through I2 translation: Apart from that she feels they are growing well.

I1: Have you done anything different?

P1 through I2 translation: They have been using sow and weaner but now adding <brand name of pig food>.

I1: What is the difference between <brand name of pig food> and sow and weaner?

P1 through I2 translation: <brand name of pig food> are good fatteners. So the <brand name of pig food> they gain the fat quickly however they don't come on heat.

I1: Oh ok.

P1 through I2 translation: Those are the only observations of the week.

### **Visit 3 and 4**

No medicines in bucket, chart or through interview

### **Visit 5**

Small pig that has been housed on its own now can't move and has no appetite.

I1: What will you do?

P1 through I2 translation: Slaughter.

I1: Send to <LIA> or here?

P1 through I2 translation: It's so small for us to take it to the abattoir, so they will do a home slaughter.

I1: Ok. And will you eat?

P1 through I2 translation: They are happy to eat it.

I1: Has she had any medication?

P1 through I2 translation: No.

I1: So if a pig dies, what do you do?

P1 through I2 translation: She has no previous experience of it, but in the event that it dies they are likely to either throw it off or give it to the dogs.

I1: So if it dies of a disease on its own, you wouldn't eat?

P1 through I2 translation: No.

I1: So just if you slaughter, then you might eat?

P1: Mmm

P1 through I2 translation: She is asking why you are asking those

I1: Because I want to know what you do, not because I am saying that you should do something.

P1 through I2 translation: And that applies also to the cows. Same as, if it has been given antibiotics, they leave it alone. They won't consume it.

I1: And what will they do with it if it has been given antibiotics?

P1 through I2 translatioI2: They'll give it to the dogs.

I1: Boiled first or just straight?

P1 through I2 translatioI2: Just give

I1: I need your help with one more thing if that's ok. Is there anything in the bucket or on the chart?

P4: Nothing nothing. Hakuna na shida (there are no problems)

I1: What I want you to do is sort through for me into the ones that you recognise over here and the ones you don't recognise over here. And you can tell me about them as you go through.

P1 through I2 translatioI2: Sometimes it's only the doctor who comes and gives.

[Talking about Twiga Penstrep]

P1 through I2 translatioI2: It's this same company, the Twiga. They also produce for pesticides.

I1: But do you recognise this drug?

P1 through I2 translatioI2: We use it often.

She says the doctor normally comes with it.

She has seen it before with the doctor.

This looks like poultry but she has never seen it.

I think I have seen it.

I think I have seen it. She was thinking aloud.

I have never seen it.

I1: I'll have the bag.

P1 through I2 translatioI2: She can't recognise the injectables because often it is the vet who comes and does those.

I1: Great. So now I want you, I'm just going to take a photo of this pile.

P1 through I2 translatioI2: She is saying, so the ones that you don't recognise, why don't give us so that we can get from the vet. She has a feeling that they are good.

She was saying that we keep poultry here, why don't you give us so that we can

P1: Using them

I1: So this is just to see if you have used them, we are definitely not saying that you should use them.

P1 through I2 translatioI2: She is saying if you think they are good, why don't you recommend to us.

I1: So I don't think that these are good, I am just bringing to see if you have used. I have just bought whatever I could buy, I definitely don't think that you should use them.

P1 through I2 translation: I2: She was saying why don't you give us some advice on the best ones to use.

I1: Can we finish this and then we will. So now, I want you to tell me from this pile, the ones which you have used on the pigs. And the ones which you have not used on the pigs.

P1 through I2 translation: I2: So she says that's one the vet comes, he uses that.

I1: On the pigs, cool

P1 through I2 translation: I2: So she feels this belongs to the poultry.

I1: Ok so number 3 you feel belongs to the poultry.

P1 through I2 translation: I2: She recognises that. She can't know here.

P1: Just this one.

I1: So all of these not used?

P1 through I2 translation: I2: Used in poultry not pigs. So he feels this is used for poultry.

I1: So 40 is used for poultry ok.

P1 through I2 translation: I2: 9 it feels like for pesticides.

I1: And then she said something about 12?

P1 through I2 translation: I2: She suspects.

I1: What?

P1 through I2 translation: I2: That the vet normally comes with it

I1: Ok

P1 through I2 translation: I2: In cows

I1: In cows

P1 through I2 translation: I2: Most often they have used this in poultry

I1: Three poultry. So now P1, I want you to take this one and tell me if you have used it frequently or not.

P1 through I2 translation: I2: Ok the instances she has seen this using is during they had a prolapse. That was the once incidence.

I1: Ok what kind of prolapse?

P1 through I2 translation: I2: Vaginal. Then they have also used when they had a problem with the leg. Yeah but they didn't very good results. But those are the instances where they have used this.

I1: Ok and always from the vet or from you?

P1: Dacteri

P1 through I2 translation: I2: They always call a vet.

I1: And have you used this in the last month?

P1 through I2 translation: They have not used in the last month.

I1: Thank you that's so helpful. And my last question is, if you have a pig that is sick, you before it is supposed to go to slaughter, what do you do?

P1 through I2 translation: She was asking, the sick pig, has it been given medicines or not?

I1: So if it has been given medicines, what would you do?

P1 through I2 translation: So you monitor it. If you see like it won't recover, you give it to the dogs.

I1: If it hasn't been given medicines, what would you do.

P1 through I2 translation: So she talks about the other incidence, also the prolapse. And clearly it wasn't really sick per se, it was only suturing. So they slaughtered it and consumed. They also call a vet just to check.

I1: If you have to give a pig a medicine and then you want to send to slaughter, how long do you wait between giving the medicine and sending to slaughter?

P1 through I2 translation: So what they do is that they monitor. First she gave a disclaimer that they have not seen that more often. So but in case that is the case they wait for, they monitor for about two weeks.

I1: Two weeks, ok cool great. So P1, if I show you this here. This withdrawal time, meat 21 days. Do you know what this means?

P1: Ah ah (no)

I1: That's fine. If your vet gives a medicine, do they tell you how long you should wait before it goes to slaughter?

P1 through I2 translation: They say.

I1: Ok so, this is the time that you should wait. So when it says withdrawal time 21 days. This is the time from giving this medicine to slaughter.

[P noticed milk withdrawal time]

P1 through I2 translation: She is asking, now what about the calf if it is a cow. Can we give the calf?

I1: The milk if the cow has been given an antibiotic? Most people do. The reason that I can't say, this antibiotic is good, this antibiotic is bad, is because it depends on the disease. So for example, this one might be good for prolapse, but it's not good for pigs with a certain type of leg problem. Or bad for diarrhoea, but this one is better for diarrhoea. So your vet which one is good for which situation. So when you have a cow, if she needs antibiotics, your vet will say ok, she is sick so she needs antibiotics. Yes, some will go into the calf because they will drink the milk. But that's necessary because the cow is sick and if we don't treat the cow she will die.

P1 through I2 translation: So she just wants directance should i give the milk?

I1: If you are giving medicine, each time, say to your vet, should i keep giving the milk to the calf.

P1 through I2 translation: So she is saying she is just confirming. So she is saying because currently they have a cow with mastitis. But the vet advised don't take it to the dairy unit. And don't drink it.

I3: So often, we will still give it to the calf, because the calf still needs the milk. And we say, ok the calf will get some antibiotic. It's not good but it's all we can do because the calf needs the milk. Ok. I'm sorry there is not a clear answer, it depends each case. Which is really annoying right.

P1: Sawa

I1: So we are done, thank you so much. Asante sana. How did you find the study?

P1 through I2 translatioI2: She says not bad because once we are here she was able to ask questions.

I1: And how did you find writing on the chart?

P1 through I2 translatioI2: She likes it because once there is a history, in case there is a change of vets. They can see what was used or not. And response.

I1: Well we have some more charts for you.

### **Farm 3**

#### **Visit 1**

I1: Could you show me around the pigs, tell me all about them. And tell me about you, what you do here.

P1: The first one, mother. Yes and I normally serve them, and I save the piglets. Now this is the fourth.

I1: Litter?

P1: Yes, first one, 8, second one 9, third one, 11. Fourth one 6. But now he has 3.

I1: Just 3. That's ok.

P1: Yes.

I1: It happens doesn't it

P1: Yes, Now these ones are going one month

I1: One month old. And you are happy with them? They are healthy?

P1: They are healthy. They are ok. I am happy. This is the breed of.... doka...

I1: Large white?

P1: No this is not large white?

I1: Landrace?

P1: It is mixed with

I1: Duroc? Hampshire?

P1: That is now the large white. That is in this side.

I1: So she has three piglets.

P1: They are a mix of large white. Yes. And this is the third time.

I1: Third litter.

P1: Yes.

I1: And you have 10?

P1: 11

I1: I can't count! And they are doing well?

P1: they are doing well. Now these are going for two months old. 23rd they will reach two months.

I1: And what age do you wean them?

P1: Two months.

I1: You do that soon?

P1: No i just... any person can come and say they want them. After two months

I1: Oh you sell

P1: I sell.

I1: To another farmer?

P1: Yes to other farmers. And I leave with the mother. I serve again. And also I save a piglet. That is my

I1: So you keep one each litter

P1: No, I have tried to keep them all. That is my project is to have the mother, piglets, to sell them to other farmers. They come again, they pick the piglet, and that is all.

I1: So you just breed here do you sell to the abattoir as well?

P1: Local, local

P1: To farm because now, when they pick the piglet, they go and take 4 month, six month, they take it to the slaughterhouse.

I1: So they rear

P1: They raise them, then they take them to [large integrated processor] or to the [local] slaughterhouse.

I2: But you also sell some to <LIA>?

P1: The old ones. The big ones?

I1: Yes

P1: Well what I do, when I, when I see it is time to reduce the piglet, I notice that the

I1: The sow

P1: Goes to the slaughterhouse. I just call the owner of the slaughterhouse.

I call him, he come with a car. Pick it and then he takes it to slaughter it.

I1: So you normally sell at a couple of months. And so what do you feed them?

P2: See now because of the food, the food is very expensive. Now what we do we buy but we do the supplement. See like those peels over there, the potatoes. We just boil them. And then we mix.

I1: Oh you boil them

P2: We just boil them with the tank that is there, and I mix them. So that I find at least the profit. So when I use the feed, the feed is very expensive. And it is not that quality. And we were discussing sometimes with other farmers that if the government can find a way of helping the farmers, the small-scale like us, with quality food and low price. We are there to go. And we can make a good job. Because I won't sell these ones as piglets. I will just make them grow so that I may sell them to the [large integrated processor] or to the slaughterhouse.

I1: Ok so sometimes you sell to [large integrated processor]?

P1: Yes. There was time that I took them to the [large integrated processor].

I think there were 6. But because of the feeding, you make a small profit, which is not good. And i like farming. This is my passion. I am here, I work here, but these are my hobby,

The pigs they are not like cows. When you feed them in the morning, you are there to go. You can go even to [Kenyan town], you can go to [Kenyan town]. Then you come in the evening or in the morning, the next day. You are there to go. And you see they are healthy.

I1: They are healthy. And do you know why you boil it?

P1: No. It is because of the, I have my doctor and he's supposed to come this afternoon. To castrate them. The males. They are supposed to be castrated. So that they may grow strong and faster. And um, he will come in the afternoon to do that job.

And er, you see there are those worms. When you feed them when they are not boiled. And they will make that, the pig will not grow well because of that. When he eats, there are two people. Him and the worms. And the worms just eat more.

Now they will take a long time to grow because of those worms. But when we boil them we reduce those worms and you can see.

I1: That's really good that you boil it. And so he comes to castrate today.

P1: Yes

I1: Maybe after we look at what food you use, but how much do you give them? Do you half commercial food half supplement?

P1: Yes. But you see now the mother, because of these, there are many. Me I don't give them with kilos. I just pick the bucket, i put the boiled, and then i mix with the one kilograms of onga. The feed. The sow and weaner. And I mix and then I give them to the pigs.

I1: So in here, food and water in here?

P1: No this is the water

I1: Just water? And then food on the floor how do you?

P1: Just here, after feeding, after finishing the food I give the water. Now, you see now the cleanness of the... it is very critical because of the diseases. The pigs are not that, they don't have very many diseases. Because now, three days, when they are born, you give them a dose of iron. Then after 3 weeks, you give the second dose. They are there to go. Then when you wean them, you just give them the vitamin, and the dewormer. You deworm them. They are free to grow.

I1: They are free to grow. Is there anything else you do to keep them healthy?

P1: The pigs are not that... when it has the worm, you just give the dose of dewormer. And vitamin. She's fine. And before you are serving another time, you just deworm her, and give them the vitamin. And you can serve. Because with the, when she is pregnant you cannot give her any dose. Because of the miscarriage or complication.

I1: And do you vaccinate at all?

P1: No. When we hear that the government talk about there is foot and mouth, there is swine fever, you can do it.

I1: Ok so it depends on what you are told is in the area?

P1: Yes.

I1: And when you serve, do you serve them? Or does someone else serve them?

P1: There is a farmer there who has the duroc. You see the black and the greys it has the brown in the head. The father looks like this one. And it is a good female, it comes and serves.

I1: Ok so they bring a boar. From your neighbour.

P1: Yes my neighbour, it is my friend.

I1: Good.

P1: Yes and he, it is served. It goes three months, three weeks, three days. You are there to go.

I1: Yes, and it normally works?

P1: Yes.

I1: And how do you know when to serve her?

P1: Immediately, even at this time, when I remove those piglets, I put them aside. Within 3 days,

I1: She comes on heat. That means you are feeding her right.

P1: After that, you can count 21 days.

I1: You are good! I could talk to you all day. Maybe next time. That's brilliant.

P1: And it's fun. Even when you come here when you are somehow discouraged. You find them playing, you are ok.

I1: They make you happy.

P1: They are ok. You see that they are healthy.

I1: They are good. And do you keep any medicines here?

P1: No. When they need attention I just call the doctor and he comes, the vet.

I1: Will come and see you. That's good.

**Visit 2 (but 3 weeks later)**

P1: I have added some kilos.

I1: They look great. It's nice because now I come back here I have seen lots of other farms. So I know how good you are.

P1: I hope you are not exaggerating.

I1: No, they are beautiful. And your piglets are big. They are strong, they have eaten.

P1: What I normally do, feed them well, keep them clean. They are there. No medicines. We have come to realise that. When you keep them well.

I1: They don't need it?

P1: Yes

I1: And you are one of very few who uses bedding, the sawdust

P1: Yes

I1: Not many people use sawdust.

P1: What I do, I use because, it keeps the piglets warm. Second, it soak the urine. And there is no that smell. We have the other ones. Now there are few, they have gone off. Four of them.

I1: You sold some?

P1: Yes

I1: What age did you sell them?

P1: Because i told you that I normally breed. For the farmers who want to keep pigs

I1: Have you had any problems? Has everyone been well?

P1: They are ok.

I1: Your pigs here, they don't get very sick.

P1: You keep them warm, you keep them clean, you feed them well. They are there to go. No medicine.

I1: Do you have anything in the bucket for me?

P1: No. Nothing. Because now the pigs are old

I1: Have they needed any boosters or?

P1: No, there is no need in the booster.

I1: Do you use booster?

P1: No. What I do, just deworm them. When you deworm them and you give them quality food, they are there to grow

I1: Why does everyone use boosters?

P1: Because they want to make faster money.

I1: I'm not sure it does anything. Yours are just as big

P1: Yes. But you see now those are, even in the farm, those who grow potatoes, what what, they do booster. So that it can grow fat. See now that is the message of what people do. And now when people buy, they eat medicine. <inaudible>

I1: So because they are giving the boosters, then when they eat the pig they will have medicine in them?

P1: Yes.

I1: Which you don't do

P1: No. Just deworm them. In fact they are supposed to be dewormed.

I1: Ok

P1: Because they are ready.

I1: Ok and so if you were to deworm, if a pig were to get sick, just before you wanted to send it to slaughter and you had to give medicine, what do you do?

P1: You see now the instruction is that you give them 24 hours, depend of the medicine that we are using. Because when you treat it and when you take it to the... still the medicine is in the meat. When the consumers take such a medicine, somehow it might affect them. They will not know, but it will affect them. Now there is 24 hours, one week, one month. Depending on the medicine that you are going to use.

I1: So how do you know whether it is 24 hours, one month, one week.

P1: Because in the nini, in the company, the medicine that we are taking, they have the instruction. In that bottle.

I1: So if the vet gives, then how do you know? If you haven't seen the bottle but the vet?

P1: Now your doctor is supposed to be open. He is supposed to inform you. Don't sell it before, 24 hours. Don't sell it before one week. Don't sell it before one month end. And you are there to go

I1: So people do it?

P1: Eeeerrrrmm. See now, because of, people are, they love themselves, they don't care. You see when I sell I need money, I don't know what will happen. When I sell, I am not the one who is going to take the meat. That concern, me I normally have it. Because I am born again.

I1: So you care for

P1: Yes for other people. People are supposed to go on that way.

I1: Ok, so you would wait?

P1: Yes.

I1: Some people might not

P1: Yes. Let me surprise you. There are people who sell these piglets with six weeks.

I1: At six weeks old?

P1: To the farmers. To go and feed them and sell them. But, they are supposed to go to 8 weeks. That is 2 month. Before you wean them to the mother.

I1: Ok so some people would say that they are two months, but they are just six weeks

P1: Yes six weeks. Now six weeks, there is not good enough to sell. It might go and die. Because it, they are those that will have, when you withdraw them from the mother. Now this is almost 10 weeks (his piglets). And they enjoying.

I1: And they are big for 10 weeks.

P1: They are big. This is the small one. Because what happened, it was the last one. There were 13. In fact it had 13.

I1: That's great.

P1: Now these are 11. These were the small one. If he is not strong, he will be grown by others. He will withdraw. And they are strong.

I1: If you have a pig die, what do you do with it?

P1: You just, me I throw them. I just did the hole, and then I put it.

I1: So you wouldn't eat?

P1: No. Eh, that will be bad. Because 1, you don't know which disease killed the pig. When you eat and it will affect you, you will be gone.

I1: You don't slaughter any here?

P1: No, i take it to the slaughterhouse. They have license there, there is <inaudible> there, he is looking for those meats.

I1: It's great that that is important to people here. Thank you.

### **Visit 3 (but one month after visit 1)**

Good week, no problems, none sold, no medicines.

I1: So in here are lots of packaging of medicines. That I have brought along to see which you recognise, which you have used, which you haven't used. I am definitely not saying that you should use them. I just want to know what you have used. So what I want you to do for me is sort through this bag into the ones that you recognise over here, and the ones which you don't recognise over here.

[Sounds of sorting]

P1: Ah no.

Ah no.

Ah yes.

I1: How do you recognise?

P1: For deworming the, this is for giving the chicken the vitamin.

I1: Ok cool. So we can put that over here.

P1: This is for, yes.

I1: And how do you recognise number 2?

P1: I saw the doctor using it. It was many years. When I was having the goats.

I1: Oh you've had goats.

P1: Many years [ago]. Almost 10 years. Though i cannot recognise whether it was for deworming or for, yes.

I1: Ok cool

P1: No.

No.

This is a new product. Hapana. No I have never used it.

And this one, never used it.

I1: Do you recognise?

P1: No.

No.

No. I have not used.

This I think it is for iron.

I1: This one?

P1: No.

I1: This one?

P1: No I have not seen it. No.

Maybe it is the same as this one. No. They are not the same.

No.

No.

No.

You have many varieties.

I1: They are lots right.

P1: No.

No.

No.

This is for vitamin.

I1: Ah ok.

11: Yeah?

I1: You tell me. In pigs?

P1: In pigs.

I1: So recognise?

P1: Mmm

I1: This one?

P1: No.

I1: You are nearly done

P1: No

No, no no,

Eh, no

This one is new to me.

This one is not.

Many variety eh.

No.

No.

No.

You can put it even in chicken. I have used it.

I1: You have used in chickens

P1: Mm.

When I was having the goats, I used this one as dewormer.

I1: Ok cool so you recognise that one from the goat dewormer.

P1: No,

No,

No,

This is for deworming eh. I think I have seen my doctor with this one.

I1: Cool. Seen number 10 with your doctor. So now we can ignore all these. And now I want you to sort these ones into ones you have used in the pigs. Ever. Or ones that you have not ever used in the pigs.

P1: This is for the chickens

I1: Yep number 3 is for the chickens.

P1: This one is for iron

I1: Ok? In the pigs? Ok so 26 is iron in the pigs.

P1: Don't think I have used another one here.

This is for chickens [40]

This one is for chickens

This is for goats

I1: The penstrep is for the goats.

P1: No. Only this one.

I1: Only this one in the pigs. So all of these you have not used. And this [26], have you used it frequently?

P1: No, not frequently. That is three, the small piglets. Three days, then after 3 weeks.

I1: Ok and have you used it this month?

P1: This month, no.

I1: No, cool.

P1: Because they have passed the three weeks.

I1: Great, that's it. Was that ok?

Do you like recording the medicines? What medicines you use, I know you haven't used any. Is that something you would like to do, is that useful?

P1: It is useful because you know you can do what, when your pig is sick from the same disease, you can apply to get them the same medicine.

I1: Can you show me, on these medicines. Do you remember last week you were telling me that it says on the medicine how long you have to wait. Can you show me where it says it? So on this?

P1: Like dewormer. This is a dewormer eh. Like this one.

I1: Ok so you said that you have to look at the medicine at it will tell you how long to wait before you can slaughter.

P1: You see now, like you just look to the instruction. Now here. If you give it, you are supposed to, around one month. That is 28 days. That is one month. Before you go to slaughter.

#### **Farm 4**

##### **Visit 1:**

I1: So, could you show me round the pigs? Tell me about them, tell me about what you do.

P1: We start with the piglets?

I1: That sounds good.

P1: Here is the first bunch of pigs. Sick pig there.

I1: How do you know it is sick?

P1: The back, it shouldn't be like that.

I1: The hernia yeah.

P1: Yeah the hernia.

I1: 7 (piglets), very good. So what will you do.

P1: Well he tried pressing it (P2), but since it is a hernia. There is nothing much you can do.

I1: But otherwise healthy, otherwise you are happy?

P1: Yeah they are ok.

I1: Yeah? How old?

P1: 4 fours. They need a jab for multivitamin na dewormer P2. And dewormer soon.

I1: ok

P1: There is another one which is there. You can enter

I1: Is that ok?

P1: Yeah. It is a stray pig. It brought itself.

I1: A stray pig?

P1: We thought the owner will come for it.

I1: She just walked in?

P1: Yes. And she was very skinny, unlike now.

I1: So you are feeding her up?

P1: Yeah

I1: Very good. She's very sweet. So you will keep her?

P1: Yes. It's his gift.

I1: Where did you find her? Just down here?

P1: Yeah

I1: Looking for food?

P1: Yeah. It was very skinny by the way.

I1: She looks better now.

P1: This one is the mother that gave birth to those ones.

I1: Ok. So when did you wean?

P1: These ones are about 4 months so they were weaned when they were 2 months old.

I1: And have you tried to get her pregnant again?

P1: No. She <inaudible> but she is on heat already.

I1: Yeah she is.

P1: Yeah she is on heat but she is a bit still skinny. So she needs to feed and become a bit big so she can be put on heat next month.

I1: Ok so you wait until she gets more weight

P1: Until she looks better. Unlike now.

I1: And then you use AI or you put to boar?

P1: No no we look for a boar.

I1: To buy or to borrow?

P1: To borrow and then we pay 1500.

I1: That's good. And you have piglets!

P1: Yeah we do.

I1: So you have another sow.

P1: Another sow, that is not pregnant it is just there. It is not asking for heat since it was weaned two months ago so I don't know what's its problem. It is just there growing fat. I am hoping it will ask for heat. Then this one is for P2. Two and a half (talking about the piglets).

I1: And who are these from? From her?

P1: The mother is on that side. These ones are already weaned.

I1: Seven little piglets. And they are doing well, you are happy?

P1: Yeah they are ok. They are moving on well.

I1: And who else do you have? Who do you have here?

And so these are for breeding or for meat?

P1: Due in December

I1: So i say now maybe 60kg? Something like that.

P2: 60-50.

I1: You think more 50? I am being too generous!

P1: I think you know how to calculate by looking

I1: Well i am not used to African pigs. So you are my first few African pig farms, and they are slightly different. I am used to European pigs.

P1: What do you do you just put them on the scale and just measure them?

I1: To be honest we measure maybe 10 and then the rest you do by eye.

P1: There are too many

I1: So we are not very good because sometimes people get it very wrong.

P1: Ok

I1: And so you send those to [LIA] in December?

P1: Yes the slaughterhouse

I1: And so they come collect?

P1: Yeah they come collect. They charge 300 to collect then they just go and slaughter and then you go and check your weight and then they write for you an invoice and then you wait for 3 days and they pay you. Or if you are lucky that same day you are paid.

I1: Ok so they charge you 300 to take to [LIA]. Per pig?

P1: Oh no the whole lot. So the car charges 300 but now the slaughterhouse is 500 per pig. Cos you know they slaughter with electricity, use hot water to slaughter.

I1: That's good. And then, how much do you get per pig?

P1: It depends, if the pig is 60kgs they do 60 x 250. That's what you get from there.

I1: Explain for me, what am I looking at?

P2: These are the kg

I1: Is that dead or alive?

P1: Dead weight

I1: Ok and so you get 250 a kg dead weight

P1: So you make about 21000

I1: Ok per pig

P1: That's ok. So if you have many pigs you make more profit, but if you have few. You know six months you will see. But it's ok, you are keeping yourself busy.

I1: So how many every six months do you send do you think? Or every year?

P1: We don't send regularly

I1: Maybe 5 a year?

P1: Maybe after 4 months you send like 5. Then another 5 as they grow.

I1: And it's good, because they are so close you can just send when they are ready.

P1: Yeah we send when they are ready.

I1: That's good, that's handy. And we have some more piglets here right?

P1: Yeah. There are nine of them.

I1: Nine piglets. And how old?

P1: They will be a month on Sunday.

I1: They look good. They are strong. And she is doing well?

P1: Yeah she is fine.

I1: Yeah.

P1: But you see there she is sitting, she doesn't want to feed them.

I1: Ah there we go, now she does. And in here, what do we have in here?

P1: Those ones are 4, from that sow there at the end. But there were 14 so we sold when they were small piglets. There remain 4.

Those were the smallest, now they are growing.

I1: Oh so you sold some of her litter? So you sell to farmers?

P1: Any farm who wants to keep pigs we just sell to them. One for 3000 at two months after weaning.

I1: So what do you feed them?

P1: Me I feed with the feeds.

I1: The pig feeds?

P1: Yeah

I1: Can I see it? Can I see the bag?

P1: The bag is at home. Well I can go and show you, it is in drums. There is no problem, it is just a walking distance here.

I1: Thank you. And you just feed pig feed or anything else?

P1: No me I just feed pig feeds. P2 has greens he gets from his friends, the women who sell.

I1: Ok

P1: This is P2's. We are three in here. So this is P2s. He feeds on greens and everything and cooks them.

I1: Ah you cook them.

P1: And a little flour.

I1: A bit of flour?

P1: Flour for the pigs.

I1: But you just feed pig food.

Ah so you have cooked? And it is from the ladies who sell?

P1: No this ones, this is from <inaudible> so does <inaudible> for chips and for bananas. Her factory is is \_\_. So when she is coming down to our house, she drops.

I1: And then you cook?

P1: Yeah they cook here with fire wood. You just boil boil boil and feed.

I1: Do you know why you cook?

P2: Mmmm no?

I1: You just cook?

P2: Because they can't eat...

P1: They can't eat it raw. Raw is poisonous. It is actually potatoes.

I1: Ok. It's very good that you cooked. I just wanted to know if you knew why but it's very good that you cook.

P1: Yeah it's poisonous.

I1: Ok that's good. So you both feed slightly differently.

P1: Yeah we both feed at our own levels. You know him (P2) he will get access to food, she (other keeper) will get access to the dregs. Me I have no access so I just go with the feeds.

I1: And that's ok?

P1: That's ok. I have no option. If i have an option, fine, if I don't... ok.

I1: And so, to keep them healthy, to stop them getting sick, what do you do?

P1: Well he deworms, he is the doc here.

I1: You are docteri?

P1: We used to call a doc, but he knows how to deworm, to castrate, everything apart from clipping eh, the teeth?

P2: Even clipping I do.

P1: He does it. He is the one who did for [an animal health assistant]. See every day you learn something new but we just buy the dawas (medicines) as I told you from the shopping centre. So we just come and buy the drugs and jab for ourselves.

I1: Ok. So how did you learn to do all the stuff?

P2: I have a doctor.

I1: So you watched them when they did it?

P2: Yeah

I1: Cool, so you buy from agrovets?

P1: Yeah, agrovets at the shopping centre.

I1: So that's wormers, vitamins...

P1: If the pig is sick, that's when you call the vet.

I1: Ok

P1: Yeah to come and treat it.

I1: Ok, so keeping them healthy you buy yourself but if it goes wrong and they are sick then you call docteri.

P2: Yeah but for boosting, vitamins, those things we do for ourselves.

I1: And how do you inject them, how do you do it? You show me what you do

P2: Injecting pig? For me it's for vitamins you just go here

I1: In the neck, that's good.

P2: Or here

I1: Or the leg

P2: Yeah

I1: How do you choose, neck or leg?

P2: Mostly for me I do neck. For deworming. For boosting and vitamins I do here

I1: In the bum.

P2: Yeah

I1: So this one you will call docteri or just see?

P2: When we called the doctor, he came and said it is ok. It is hernia. That's hernia.

I1: So you just wait.

P2: But for now there is something.... <in Swahili>

I4: Pus

I1: What did he say?

I4: He is wondering what is up with it.

I1: Yeah cause it is scraping on the floor?

P2: Nononono

I1: The skin is broken.

I4: He said when he pressed the wound, it is removing water.

I3: There is a discharge.

I1: Don't press. No. Just see if he gets bigger. Cool so do you keep any medicine here?

P2: I have here.

I1: Ah thank you so much.

P2: This is my store.

I1: So you just have some ivermectin. What do you use this for?

P2: That's for deworming.

I1: And this you have vitamins

P2: Yeah vitamins and booster. As you see.

I1: And you give this to... who do you give this to? Which pigs?

P2: Both.

I1: Any

P2: Any yeah

I1: So you have vitamin A, D, B, B12 E, everything! That's all you have? And some blue (alamycin) spray? And can I see? If that ok?

More dewormer.

P2: But for this we just do for piglets.

I1: For little piglets.

P2: It's good for piglets.

I1: Good. Piperazine citrate.

Asante

P2: Karibu

I1: No other injections?

P2: Just booster and vitamins and dewormer. Mostly we use those three.

I1: I think I have what I need. If I explain the bucket and then I see you next week?

## **Visit 2**

I1: How are you?

P1: I am good

I1: What are you up to?

P1: I am just cleaning.

I1: They have grown in a week. Do you mind if we take some photos?

P1: Yeah you can take some photos.

I2: The hernia is still there

I1: What happened with it? Did [animal health assistant] come?

P1: She didn't come.

I1: He's eating

P1: Yeah everything is ok.

I never phone the doctor, because the kapig was so tiny.

I1: Exactly.

P1: Because it is eating.

I1: I've seen much worse.

P1: I was feeding with another type of feed.

I1: Ah what were you feeding with?

P1: We were not feeding well.

I1: So now you have swapped them?

P1: Yeah

I1: And they are getting bigger now?

P1: Yeah they are <inaudible>

I1: So what were you feeding with before?

P1: Another onga from [Kenyan town].

I1: Cause you do some pig food and some banana was it?

P1: Yeah

I1: And you cook and then you feed.

P1: Yeah.

I1: So has everyone been well this week?

P1: Yeah all good.

I1: Any problems?

P2: No problems.

P1: At least I can see a change.

P2: But we sell the one you know left, on the other side yesterday.

I1: Ah tell me, which one?

P2: The big mamma.

I1: The one that was not asking for heat.

P2: Yeah

I1: I was gonna ask you about her. So you sold her to [LIA]?

P2: Yeah [LIA] there slaughterhouse here.

I1: Did you get a good price?

P2: Yeah of course. Yeah.

I1: Good.

P2: 80kgs. So that you see 80kg, you multiply by 250 shillings.

I1: 80kg dead. That's great.

P1: Yeah. So then you get that 19,000. That's good.

I1: So she had just been sitting here right? You hadn't given her any medication?

P2: No no medication. We sell it just for meat.

I1: Because she was not asking for heat?

P2: Yeah for heat. Just eating eating but not.

I1: Just eating.

P1: Even the other two you left there,

I1: You've sold,

P1: Two yeah. The big ones.

I1: Same age?

P1: No no there was two like these ones. Fatter.

I1: They were just ready to go

P1: Yeah because one, the big one was 53kg and the other one was 46kg.

I1: That's good.

P1: So we are left with these ones. We feed them.

I1: Cos these two are hers?

P2: These ones are the ones that he gave <inaudible>, but in the course of this week I will be injecting them.

I1: What will you inject them with?

P2: For those minyoo

I1: The worming

P2: The deworming yeah. Saturday I will be doing with this guy.

I1: Together! Is he your vet assistant?

P2: Yeah.

I1: And what do you to help?

P3: Catch the pigs.

P2: Yeah he hold them very nicely.

I1: That's good.

P2: Then I inject.

I1: That's great.

She's here! Good morning! How are you? They look great!

P4: They look fine. They are just feeding well.

I1: I will let you feed them first otherwise they will scream. Hey that's good the piglets are eating some too. And you do that twice a day?

P4: Yeah in the morning and in the evening. So it can have a lot of milk to feed the 9. If you don't do that it is going to be too drained.

I1: Beautiful and clean.

P4: We clean in the evenings. How was your week?

I1: Good! We have 13 farms.

P4: That's good. Every day you are busy.

I1: And everyone has been well? They look well.

P4: They are ok.

I1: I heard you sold some

P4: Yeah we sold some. One did come on heat. Move your hand so it will bite you.

I1: You wouldn't would you.

P4: Yes. That was yesterday.

I1: And you got a good price I hear.

P4: Yeah and they are to pay today. Just trying to push on. Have you got any questions?

I1: Yes, is there anything in the bucket?

P4: No. The time you came, I told you we had already dewormed and multivitamins.

I1: So nothing this week.

P4: Maybe next week. Oh he said he gave dewormer. I didn't know.

I1: Ah you gave.

(Piperazine citrate)

So how do you decide whether to do this dewormer or the injectable dewormer?

P4: We alternate.

I1: Oh clever.

P4: If you do this one you do the other one next round. Because you know the strength is not the same. This one might work with different worms and the other one might work with different worms so you can't. You keep changing.

I1: And so how frequently do you worm?

P4: Two months, three months. If you look at them and you see the worms are too many you can do it every month.

I1: And do you worm everyone at the same time?

P4: No no. The piglets, you can worm at the same time. But the mother if it is breast feeding, no. After weaning is when you immediately deworm and then you put it on a boar.

I1: And you do every two months and you just keep going every two months.

P4: Yeah to avoid the many worms. Because you know they eat all sorts of food. They don't refuse anything so for worms

I1: They don't refuse anything do them. So this one is

P4: Ascarids.

I1: Did I have anything more to ask you this week, I can't remember. Hey, if you have a pig that dies, what do you do with it?

P4: Just bury it.

I1: You bury it.

P4: Basically you are supposed to call a vet and come and see what and he operates it. But we find it costly. You see the farm is not so large. It is very small. But those ones that have a large farm, they have a vet inside. So, they'll do the surgery there and there to prevent for the rest.

I1: To see what was wrong with it. Do you ever eat?

P4: The pig?

I1: Yeah if it does?

P4: No no no that's poison. You can't even sell it no. People will die.

I1: Yeah. We don't want that do we. Great. I think I am good.

### **Visit 3**

P1: Then we bought others.

I1: New piglets. Where did you get them from?

P1: From there, down there. Another farm over there.

I1: Ok so they just had some piglets to sell and you had a space?

P1: Yeah we needed for serving.

I1: Oh so you are using them for breeding. So boy girl? No two boys.

P1: Two boys

I1: Both not castrated?

P1: No. So that we need them to serve when they are big enough.

I1: Super so how old with they be before you serve them?

P1: Roughly 6-7 months. Yeah it's ready to be served. It depends on how it grows.

I1: Do you have a weight that you want them to be?

P1: Roughly weight will be 45 50

I1: Kilos

P1: Yeah. That will be a good mother.

I1: Ok. And they are growing.

#### **Visit 4**

[The two new boars that they bought to use as breeding both died after a vet visit where they gave antibiotics.]

P2: It happens.

I1: Oh what happened?

P2: I don't know, I can't really tell.

I1: What signs were they showing?

P2: Just not eating. So they were given some other drug, it's written there.

I1: I'm so sorry, that's so annoying.

P2: No it happens. You can't just have a smooth sailing all along. You have to have challenges. But I always buy from that farmer and there is no challenge so I don't know what happened this time.

I1: So do you tell them now? What happens? Do you say they died?

P2: I've already bought, there is no point of making him feel bad. And he hasn't sold all the piglets to other people. He'd also feel bad as he sells. So I'd rather remain quiet and tell him later, way later.

I1: I feel like I'm more annoyed than you are.

P2: I am able to let go unlike before. But now

I1: Pigs are pig

P2: Pigs are pigs, people are people. You let life be as it comes. If it's a human who dies can you associate to anything. Just goes. You just take it easy. Otherwise there is nothing much it will add to my mind. I will just be mentally stressed which doesn't help me.

I1: And there is enough in this world to be stressed about right

P2: You have children to be stressed about, you have to make these pigs come up to eat. So I don't think two animals will make my life bad. You feel bad in the morning when you come.

I1: So you just came and they were both dead?

P2: What do you do? Even on Sunday one of these, see the bucket was high. So i think it [piglet] was trying to drink water. It fell in and suffocated.

I1: Oh no. It's so annoying when you work so hard.

P2: I think as I tell you you have to pass through challenges. And the challenge also makes you remember god more. So when you are smooth sailing, you are just settled, god, thank you for the day.

I1: I love your faith here.

P2: To face challenges. It has hernia but we keep telling her, let's push. Maybe someone else has a different challenge today. We keep pushing. I can't just discourage you. No. Then with the challenge, it's how you continue moving on. You see how it's going to go with the hernia. How far it will go. But you are being told to throw it away, you can't. Why. When it is alive. No. Just keep it, feed it and hold on. That's how we are.

I1: Shall we look in the bucket?

P2: You can.

I1: Has anything else happened this week? You've had an eventful week.

P1: Eventful week.

Looking at meds record which has pen and strep recorded for the boars and it says that they have gut oedema.

I1: What happened so did the vet come or did you do yourself?

P2: The vet came. That one I can't treat. I asked him to write himself.

I1: I'm seeing a bit of this disease which we call bowel oedema which is caused by E. coli, I've seen it on some other farms as well.

P2: You know what I think he did to me. Me when I am selling my pigs, I can't just sell to you and just stop feeding. They have to feed on their own.

I1: So how do you encourage that?

P4: I'll leave that pen from today for the whole week. Then these ones they are almost being weaned, so I move them to the other side during the day. I put a little food, they start eating, then they go back to their mother in the evening. So like for two weeks that's what I do. Then like the last one week I completely stop. They feed, then that's the time I can tell you that my pigs are ready. But just removing them from the mother is wrong. That's a cut of milk direct.

I1: That's great. It must be right. So at home piglets have their own little area all the time

P2: A creep yeah.

I1: Exactly, so it's not as abrupt.

P2: So you know this one I think was abrupt so I sent someone just go and pick them whoever knows the pigs. So I kept asking them on Saturday, have you weaned these pigs? He was telling me no they are still on the mother but they feed. Cause I saw those signs on Saturday.

Yeah cause when you are going to weaning, there is a feed which you call creep. It's made of like 99% milk powder. So this milk powder, so you have removed it from the mother it's not getting the milk it was getting. So you mix it with maize meal, this ugale flour but in a different, so you mix a little portion. So every day like one cup. They still milk supplementing that food. In fact if you, you know the milk powder, if you smell you can even try and eat it. But i don't think he did that because me I

normally did that. So I just clean that pen with dawa. Because it is not like a big disease like, the one that just kills all the pigs,

I1: African Swine Fever

P2: Yeah not that one, it's not the one. So this one I just clean like for three days with magadi. Then i just shift.

I1: That's great that you've done that. You guys are so knowledgeable. This is your hobby right? This is part time.

P2: This is part time that's why I always read

I1: How do you know? What do you read?

P2: Youtube, on the phone. You see there are so many farms like in Uganda they have very big farms. So they show you transition from this, to this, to this. So you keep checking when you are home. You keep going through. That's it. Then I am in a group of the pig farmers. So every day there is a challenge, they'll tell you this. But I didn't know this was E coli at all. I knew that one. If I knew I would have been, that's an X. There is no. Then you know what matters is what he was feeding from his farm to the next farm, really matters. Cause now, what I'll feed and what you'll feed when I come <inaudible> so the stomach is not able to handle the feed intake. You see me I would have given creep with my knowledge. That is me but we are different and different levels of feeding.

I1: Absolutely. And it's interesting because you guys have already told me that you know how important it is that you get new genetic on. So that they don't imbreed, but how do you do that if you can't trust people to buy from.

P2: There is someone you will get a boar from. Now this one will be on heat next week, there is someone who has a boar, you got to his farm, he is willing to part with his boar with 1500. You bring it. As long as he comes to your farm and inspects there is no disease. He delivers for you the pig for three days, it is already served, he gives back. So the third day he has taken his boar.

I1: So he comes and checks that there is no disease?

P2: Yeah he has to come and check you farm. He can't just risk his boar to go back with a disease to other piglets. You see, so that's why i was trying to bring up my own boar.

### **Visit 5**

[P1 told I2 that he had given some medicines, then they both brought them over to the bucket]

I1: So tell me, what have we got here. So you did these on Monday. Ah this one is empty.

P2: Yeah for booster and vitamin and for nini, for minyoo (deworming).

[Nick then got him to write it on the chart]

Hernia pig is still alive! And the hernia somehow looks like it is healing. He still hasn't grown much but neither have the others.

I1: So in here, I have got lots of empty medicines. And so I have brought them along because I want to understand what you might have used before. And how you might have used it. So over this time I have got some of the use, but not all of it. So i wanna see what you have seen before and what you

haven't. So I'm gonna give you each one, if that's ok. And I want you to first of all, over here but all the ones you don't recognise. And here put the ones that you recognise.

P1: Not, no.

No.

I recognise it. Yeah.

I1: Do you remember where you have used it?

P1: Agrovvet

I1: Ah you've seen it at the agrovvet.

P1: No.

No.

No.

For treating whatever.

I1: What do you treat with this?

P1: When a pig is diarrhoeating. Or a human being.

This one is a dewormer.

This is for the vets.

Wow these are all for pigs?

I1: Animals in general.

P2: The vet would know most of them but us no. He is the one who comes to treat them. And he knows what to treat.

So many drugs. I thought I knew a lot but I don't.

This one is for chickens yeah.

I1: But not for pigs? Ok we will put it here because you do recognise it.

P2: This one looks familiar. We use for poultry. When the chickens are sick. We used to have chickens but right now not.

Not yet

Not yet

I know this antibiotic for chickens. It is still the same. It is a repeat.

No

No

I1: So from these, I am just gonna take a little photo. I would like you to now sort these ones into ones that you have used on the pigs and ones that you have not used on the pigs.

P1: These are just chickens. Just chickens.

I1: These three sachets

P1: Plus the box, plus the s dime.

P2: All this is just chickens.

I1: And this is used on pigs?

P2: He just sees it in the agrovet

I1: Ah so you haven't used it

P1: Not yet

I1: Great so also not used. Cool so none of the drugs that I have brought are ones that I have used.

Have I missed out any antibiotics that you use on the pigs?

I2: Anything that we didn't find in the agrovet

P2: Like multivitamins?

I1: No so just antibiotics

P1: Oh you are just doing on antibiotics.

No, no, no. As you know we normally deworm and give multivitamin. This and everything, it is the doctor who comes, so we are not lucky on that. But for vitamins and minoozi (dewormer) we do our own.

I1: And i just have one last question for you. So if you are just about to send to slaughter and they get sick. What do you do?

P2: We call a doctor and treat them.

I1: So if the doctor has to give a medicine, can you still send it to slaughter?

P2: No. We dispose it.

I1: Do you know why you dispose it?

P2: It's harmful for humans.

I1: Ok and so if it's just about to go to slaughter and you have to give a drug, can you wait to slaughter it or you have to just dispose?

P2: Maybe if you give the drug and it dies before you know you just dispose. It's not good just to take it to the slaughter. But you can stay like 14 days if it is recovering.

I1: Ok so you could give a medicine and wait, and then send. And how would you know how long to wait?

P2: We normally read, you know it's like 2 weeks for the drug to be out of the system. Normally the doctor will tell you.

I1: Ok. On here, does it tell you how long to wait?

P2: Yeah. Withdraw, for milk 3 days you don't drink. Then meat, is 28 days. That's like a whole month. So you can't consume that product. It is not fit for human.

I1: Do you find that it is easy to follow that or are there times that you have to send to slaughter anyway.

P2: It depends. You also consider your, it depends on your mind.

I1: Tell me more

P2: You might risk, you might not risk. We normally, they just die. Even before they are healed. Pigs are delicate. Very delicate. It's like a new born baby, you know they are delicate. So anything within hours it is gone.

I1: So do you think you have had to send pigs to slaughter within this time? So do you think that at some point you have had to give a medicine, and then send to slaughter before the end of this time?

P2: No, no. We have not reached that. You are not supposed to.

I1: Do you think other people do it?

P2: People are different. It is business. If my pig is selling and i can make 2000 why not. Yeah so people don't care. You, you will care but the rest don't. You can't even tell which one is good or which one is bad.

P4: Or maybe that time you are in need of money. And the quickest thing to do is to sell the pig.

P2: Before it dies. Let it die in the slaughterhouse. And be sold, whatever it will be sold. And get you a little. Instead of it dies and you also lose the money.

I1: No I understand that. So no, it could happen, but for you it hasn't happened.

P1: Yeah, no no no,

P2: You see us we are a small farm just growing.

I1: Do you find when your vet comes and gives a medicine, do they tell you about this time that you have to wait?

P1: Yeah

P2: Yeah they do.

I1: Fantastic. How have you found the study?

P1: It was nice

P2: We enjoyed

I1: Was it annoying to have to put stuff in the bucket and write on the chart?

P1: No, no no. That's a norm. There is no issue there.

I1: And was your vet happy to write on the chart?

P2: He was very ok. He didn't have an issue. So he is giving you knowledge. And he is also writing the knowledge there. If he didn't write I would not have known to, what the disease was and to google you see.

I1: So in the future, would you like to write what medicines you give?

P1: Yes.

I1: Why would you like to write?

P2: So like when the doctor writes you go and like, you see he wrote oedema. So you go and google what it further means. You gain more. By knowing what is happening. You know when you just write for me something I won't know, but now there is youtube i just go and read. And what causes, what happens. Then I know. You gain knowledge from each and every thing he writes on that paper.

But if he didn't write you know he would have just told me and it would have passed.

I1: Yes and we forget right.

## **Farm 5**

### **Visit 1:**

When we arrived some men were outside digging a very deep well. There was a man digging right at the bottom who goes from farm to farm digging wells. It was perfectly square and beautifully neat. The two men of the family were at the top. They said that when they get water, it should give them about one month's water.

I1: Tell me about the pigs.

P1 through translation by I2: So the pigs eat twice a day. So they eat twice, 3 kilos in the morning, 3 kilos in the evening. So he also sweeps the place twice a day. In the morning and in the evening.

Drinks water in the morning and in the evening. But initially they had a nipple, but they don't have. It has malfunctioned.

I1: Ok. So what will you do, what do you do for water?

P1 through translation by I2: So after they have finished the feed, they put water in there.

I1: Ok that makes sense. And it is because of the well do you have to restrict how much water they have?

P1 through translation by I2: So they restrict.

I1: What else do you do?

P1 through translation by I2: Those are the basics.

I1: So who are these, how old are they do you know?

P1 through translation by I2: Six months.

I1: And who is here?

P1 through translation by I2: So this is the same batch of six months.

I1: So you've just separated girls and boys.

P1 through translation by I2: So seven for six months each.

So these are four months and there are six.

I1: And these are, did you have the mothers before?

P1 through translation by I2: They were sold. They were sold on Tuesday.

I1: To [LIA]?

P1 through translation by I2: He wasn't sure the owner just called up.

I4: The owner told me they take them to [LIA]

I1: Ok. And so do you know why you sold the mothers?

P1 through translation by I2: He had some costs to offset so that's why he sold the mothers.

I1: So will keep some of these or will you sell them all to [LIA]?

P1 through translation by I2: They won't sell, they will be reared.

I3: And so these don't have tails. And these have tails, why is that?

P1 through translation by I2: So they forgot to dock them.

I1: And do you dock or someone else?

P1: Docteri

I1: That's good. They look strong. So how many do you sell to [LIA] every 6 months?

P1 through translation by I2: So he says as long as they are big enough, but it is not up to his decision. His is only to keep them alive.

I1: And how big do you sell them do you know?

P1 through translation by I2: Maybe above 60

I1: And how old would they be to get to that weight?

P1 through translation by I2: Around 9 months.

I1: That's good. Can you show us the feed bag, can I see it? Ah great.

And anything else you feed them?

P1: Hapana

I1: Nothing, just pig food. That's good. And they look big.

And you've told us about your cleaning, and about your giving food and water, do you do anything else to stop them from getting sick?

P1 through translation by I2: He used something to spray the pens to be disinfectant.

I1: Disinfectant, that's good.

P1 through translation by I2: But it's over now.

I1: Ah you have run out? How will you get more?

P1 through translation by I2: Yeah it is run out. So he informs the owner to get more.

I1: So what you do depends on what you are given.

I2: Yeah exactly

I1: Do you have any medicines here? Dawa hapa?

P1: Hakuna (there is not)

**Visit 2:**

No pigs been sold.

Drinker working now. Participant talked about the scarcity of water but they are solving it with the well which they are digging for two weeks.

Talked about selling sows last week but didn't get much money for them.

Because of feed issues, needing to reduce how much food they get.

No sickness, vet visits or meds in bucket.

**Visit 3:**

I1: When one dies, what do you do?

P1 through translation by I2: They have a dog, the dog could eat it

I1: Do you ever slaughter here to eat?

P1 through translation by I2: They never slaughter at home.

**Visit 4:**

Sold 5 pigs this week. Translated through Nick that the main reason for this is the scarcity of water. He doesn't get told what weight they made and they just go.

They are needing to dig the well again.

Everyone has been healthy and no medicines use.

**Visit 5:**

Sold another 2 pigs this week. But last week sold 5.

Will keep some of these for breeding now.

I1: And have you used any medicines

P1 through translation by I2: Not yet

[Nothing in the chart or in the bucket]

I1: In this bag we have brought lots of empty packaging of drugs to see which ones you might recognise or not recognise. So I want you to sort through them for me and I want you to put them into two piles. Recognise and don't recognise.

P1 through translation by I2: He knows it

I1: So he knows it cool.

P1: Bado (not yet)

Bado

Sawa

I1: You do recognise

P1: Yes

I1: How do you recognise most of these? Where have you seen them?

P1 through translation by I2: He's worked at a previous farm and he used to use this

I1: Cool! Which animals?

P1 through translation by I2: Cows, goats, chickens, pigs

I1: Everything. So now I want you to sort these into the ones which you have used on the pigs. How long have you worked here?

P1 through translation by I2: Six months

I1: So the ones that you have used on the pigs here. And the ones that you have not used on the pigs here.

P1: Hapana (no)

Hapana

P1 through translation by I2: He has used it here.

I1: Cool so these I am gonna throw away. Next I would like you to sort these into those that you have used frequently, and those that you have not used frequently on the pigs here.

[sorting noises]

I1: Can we go through these and you tell me what you use them for, or how do you use them?

P1 through translation by I2: So this, normally when they are not either eating well. But he says that he uses it injecting either here or here.

I1: So from a version in a bottle or do you inject this?

P1 through translation by I2: He says a such version of this. Not necessarily this, but in a bottle.

I1: Ok so a version of tylosin and doxycycline. So number 7 you will inject when they aren't eating.

P1 through translation by I2: Ok so they call the vet. Normally he comes around, especially when they are not feeding well. And probably he comes with it.

I1: Ok cool. And that was number 29.

And this one. Number 12

P1 through translation by I2: So when they have low body condition score, he gives them this.

I1: Ok cool, to make them big. And this one, number 20.

P1 through translation by I2: He hasn't seen the vet using it but he knows it is a familiar one.

I1: That's fine. Number 15?

P1 through translation by I2: Ok so for number 15. He normally uses when they are feeling a bit cold.

I2: I bet maybe like a pneumonia form.

I1: Ok

P1 through translation by I2: When their hair is falling off and when the skin coat is not very nice. That's 32.

I1: Number 26

P1 through translation by I2: He says when they have a bit of malaria. Just general sickness.

I1: 22

P1 through translation by I2: So when he comes he comes with his own bottles and he takes them to the drug bag. So he might see just familiar but it might not be very specific things.

I1: The vet?

P1 through translation by I2: Yes. He says he normally uses this

I1: The vet normally uses this?

P1 through translation by I2: Yes

I1: Do you inject this or the vet?

P1 through translation by I2: The vet

I1: Ok 34

P1 through translation by I2: So he combines gentamicin 34 and 29.

I1: For what reason?

P1 through translation by I2: When they are generally unwell.

I1: And that's the vet aswell

I2: Yes

I1: ok 13

P1 through translation by I2: When they are deworming.

So he uses this maybe to bring back the body condition. And he combines it with this.

I1: Ah so 2 and 32 go together to get them fat.

Last one, 31

P1 through translation by I2: He acknowledges that he has not seen 31.

I1: So I want you to put these all back together. So these are all the ones that you have used on the pigs. So now I want you to sort these again for me into the ones that you have used in the last month and ones that you have not used in the last month.

P1: Hapana

I1: Super so, do you remember when you last used this one and what you used it for?

P1 through translation by I2: The owner requested that they be injected before they are sold to get them on proper weight.

I1: Do you remember the time between giving this and then selling?

P1 through translation by I2: He can't remember

I1: More than one week, less than one week?

P1 through translation by I2: 2 weeks

I1: Cool, nice. And do you remember when you last used this one?

P1 through translation by I2: Ok so he used this for boosting condition.

I1: To the ones that you sold?

P1 through translation by I2: Yeah the ones that were sold.

Ok these ones have not been injected.

I1: Yeah ok cool. And do you remember when you last used this one?

P1 through translation by I2: Ok so he is saying for most of these drugs, they were injected two weeks before. They were injected and then they were sold two weeks after

I1: So the vet came?

P1: Ehh

I1: And he injected this, this this

P1: Yes

I1: Ok great. Thank you so much. Do you know what this means? [pointed to withdrawal]

P1: No

I1: When you give a pig a medicine, can you send to slaughter straight away?

P1: Hapana

I1: Why not?

P1 through translation by I2: So he says that there is still some medicines in the body system

I1: And why is that bad?

P1 through translation by I2: He says the meat also could be smelling of the medicine.

I1: And so how long do you have to wait between giving the medicine and sending to slaughter?

P1 through translation by I2: Like three weeks

I1: And how do you know that?

P1 through translation by I2: Seems like routine, he just knows what it is.

I1: Does the vet tell you how long to wait between giving a medicine and sending to slaughter?

P1 through translation by I2: So the doctor comes in, injects and goes. So it's up to him to inform the farmer "oh these have been injected so we can't send them away".

I1: It's up to who?

I2: Him, he informs the farmer. The owner.

I1: P1 informs the owner ok. So if the vet has come, what do you say to the owner?

P1 through translation by I2: So he will inform "oh these drugs, they have been injected"

I1: So this time, you injected and two weeks later you slaughtered?

P1: Eh (yes)

## **Farm 6**

### **Visit 1:**

I1: So you were saying, what were you about to tell me?

P1: Yeah food, main challenge.

I1: Food, what's going on with food?

P1: They have not quality. Yeah they are not of quality. So, maybe if you start a pig from 3 months, you end up waiting for a whole year. Because the food is substandard. So we have to improvise.

I1: So you get piglets and what happens?

P1: Ok we buy from 3 months, then we <inaudible> to slaughter.

I1: But they don't grow

P1: They don't grow faster. They are very slow. So the market is still down there, pigs are up there, so you are just hanging on.

I1: So the market for pigs is low?

P1: It's low

I1: But feed price is high

P1: Is high. Production is very low.

I1: And so how has this affected you, what has happened?

P1: Ok for now, I used to have like 100 pigs. Now i am going to about 74, 75. I am losing every month.

I1: So you are getting less money because you have less pigs?

P1: Yes. Less money, less pigs. More pigs, more money. The feeds is a big challenge.

I1: Is that your biggest challenge?

P1: Yeah this is the biggest challenge.

I1: And for how long has this been a challenge?

P1: For now, 5 years now. The profit margin is too small.

I1: 5 years. So it's not just since the war in Ukraine?

P1: I don't think so. Because they have the raw materials here. They have maize, wheat, we have all that. It's not about the Ukraine war, I don't think so.

I1: Do you know why it is?

P1: I think there are so many brokers in between. Maybe the government is not doing enough to <inaudible> these markets. Ok food production, maybe there are curtails, I can't tell. But there is something wrong there.

I1: I will try to find out. So what do you feed them?

P1: I start with sow and weaner, then grower, then maybe sow big, maybe finisher.

I1: So you use four different feeds.

P1: Four yeah. I try to juggle them to see how they, they are giving something.

I1: So some people, I've mainly been to smaller farms than you, some people just use one feed. Do you find four feeds makes them grow better?

P1: Yeah. Four kilos a day. The feed should come down. Or at least the market should be a bit higher. Now we are buying for around 260 per kg. That's the minimum.

I1: 260 shillings

P1: Yeah. That's very low.

I1: Ah the pig is 260 shillings per kg. Yes. And you sell to [LIA]?

P1: Usually [large integrated processor]. Maybe [LIA], maybe some brokers, they come and buy.

I1: So how do you choose when to go [large integrated processor] and when to go to [LIA]?

P1: [Large integrated processor] is better. It is better, they pay well, on time, not well, just on time. They pay on time. Not very well.

I1: They pay on time. So you get about the same money, to go straight to [LIA], to them to [large integrated processor] but [large integrated processor] pay faster?

P1: [Large integrated processor] pay faster yeah. They have permissions, they have incentives.

I1: So why do you sell any to [LIA]? Which pigs might you sell to [LIA]?

P1: Ok mostly boars yeah.

I1: You sell boars to [LIA].

P1: Yeah

I1: Why boars?

P1: They usually go for boars.

I1: They like boars

P1: Yeah, I don't know why.

I1: That's interesting. And old boars or just young?

P1: No big ones for slaughter.

I1: Big ones. What kind of weight would you sell?

P1: For [large integrated processor] they go for 65kg to 75kg. That is grade 1. That is where they buy it for 270 (shillings) per kg. That is the best grade they can. But for me around 56kg, for example, to me that is too small.

I1: So their website says that they are much higher than that.

P1: Haven't seen one.

I1: Because another farmer told me 55 - 75. And then I looked on their website and it said like 80.

P1: 80kg. When it goes to 80kg, then the money goes down. They say the carcass is not good, too much fat.

I1: Too much fat. And why is there too much fat at 80?

P1: I don't know. I don't know why they do it. But 80-100, that is too much. They call it <inaudible>, of low quality, grade 5, grade 4.

I1: Which is interesting because at home we do much heavier and I wonder if that might be a food quality thing, that they are going fat rather than putting on muscle at 80. I don't know, I'll try to find out.

P1: 80kg-90 they don't have muscle, they just fat. Like these ones here, the fat margin is too small. Sometimes they don't even take out the fat. Maybe by December they will be ready for market.

I1: So when you sell to [LIA], what weight is the boar that you sell?

P1: [LIA] goes more 75 up to 80.

I1: A bit heavier. But not a boar that has served, not a breeding boar?

P1: No.

I1: They are lovely.

P1: They are.

I1: Can you show me them, can you show me who you have?

P1: These are now eight months old. Yeah very slow. Because of the feed, feed of poor quality.

I1: And so when do you want to send these to slaughter?

P1: They will be going by next week. This one is now <inaudible>, this is one now 70kg. So they are <inaudible>.

I1: They are getting there. So 55-75 is dead weight or live weight?

P1: Dead weight.

I1: So you have mixed, you have boys and girls.

P1: Yeah because they are castrated.

I1: You castrate? Or vet castrates?

P1: The vet castrates.

I1: [Large integrated processor's] vet or?

P1: No our own.

I1: Your own private vet. And what age do you castrate?

P1: 2 weeks.

I1: Is the water?

P1: No it's the drainage here.

I1: Ah she's getting some drainage.

P1: They have water there, the water is available.

I1: Ah so they have nipple drinkers. But they prefer the puddles. They are funny aren't they.

P1: They are very funny.

I1: We try to keep them clean and they prefer the puddles. Pig will be pigs.

P1: Always.

I1: And who else do you have?

P1: This ones, a bit younger, six months old. You can see that some are very small, and they are of the same age. The same age, same mum. There were 14 of them. Some are very big, some are very small.

<walked to a new litter>

So they are <inaudible>. Same mother, some of them are so big, some are so small.

So these are 4 months old.

I1: Four months. Not all from the same mother?

P1: Yeah same mother yeah! There are 14.

I1: 14! Very good.

P1: It's a (either hybrid or high breed), same as this one. So it's a large white, but their dad was a duroc.

I1: From [large integrated processor's] genetic?

P1: No we just source it around, from farms here.

I1: So natural service?

P1: Yeah.

I1: So do you have a boar here or do you use a boar?

P1: There is a farm somewhere there where you go.

I1: So you take your sow? You have sows here?

P1: I sold them last week. But I will just choose them from here.

I1: So you choose the best?

P1: Yeah. I choose the best.

I1: And how do you choose? What do you look for?

P1: Like this one. She is a good pig. She is bigger than these.

I1: Ok so you look at the ones that are growing the best. So why did you sell you sows.

P1: For the brokers.

I1: Kwa sababu? (Why)

P1: Because [large integrated processor] they don't buy them.

I1: And why did you sell them rather than keep them.

P1: It is about feeding. If you can feed a sow for another 6 months, my profit margin goes down. So i make sure i serve them once, then sell them.

I1: Really?

P1: Once and then I sell them.

I1: Because you need the money now, and it takes to long to wait for them to grow. That's really annoying. Especially when they are giving 14 piglets. Did you want to keep her?

P1: I don't want to keep her. They will be eating, eating, eating.

I1: Ah so because you then have to wait to serve her

P1: Yeah again. It's around another 6 months.

I1: Right. I understand. So this is all the pigs?

P1: Yeah we are around 74 for now. Used to have more. All the way up there. Feed is the biggest challenge.

I1: And so do you do anything else to keep them healthy? To stop them getting sick?

P1: Ok, maybe sometimes the deworming. Management. Boosters.

I1: Vaccines you mean?

P1: Something like that.

I1: Do you have drugs here? Can i see them?

P1: My mum's house.

I1: Thank you.

P2: You can come anytime, this is your home now. These ones.

I1: Ah so you have some penstrep.

P2: They are sometimes taken by bacteria. There is a bacteria affecting skin. Within 7 days, they die. This one is the best to treat it? He will tell you the name of that bacteria. Within 7 days! Booster hapa.

I1: And when do you use it?

P2: Vaccine.

I1: Ok. Ah great. Any others? Or just this?

P2: Those ones, they are finished. They have taken.

I1: Ah they have had it. And any other dawa?

P2: He will explain you.

I1: So you keep in here any other dawa, or just this?

P2: No, we have buy it when the disease occur.

I1: Ok, i understand. From docteri? Or agrovet?

P2: From docteri. Docteri comes here. Or we have to go to the agrovet to buy it.

I1: So you use this for the skin condition, when you see it.

P2: Yeah. There is a name of that bacteria.

I1: Erysipelas.

P2: Yeaahh. Una joo (You know).

I1: Nina joo.

<Walk back to farm>

P1: So this one, for diarrhoea.

I1: So this is for the water? (Skazone)

P1: Water you can do water or the feed. You can mix it with water or the feed.

I1: Ok. And so when do you use this?

P1: When they are diarrhoeaing, not always.

I1: When they have diarrhoea. Any age?

P1: Any age. This one is a dewormer. (piperazine citrate)

I1: Ok, and when do you use?

P1: There are signs. When the pig is, the tail is swinging, the appetite is low, they have the worms. So we just use. I don't call the vet for this.

I1: You have to call the vet?

P1: No I don't. For these ones I can manage.

I1: And this one you have to call the vet?

P1: For injections, that's when I call the vet. Same with this one.

I1: Same with that one, you have to call the vet. And the vet comes here to look or they say go pick up the medicine, what do they say?

P1: Yeah go pick up the medicine. Give this one, or this one. But for injections, I don't do it.

I1: Oh you don't inject the pig.

P1: The vet comes.

I1: Just when you put something in the water, or feed, you do.

P1: Yeah. So like I was saying for the pigs, what I usually use is

I1: This is your feed

P1: But I have to supplement it again.

I1: What do you supplement with?

P1: So i have soya.

I1: Oh soya, where do you get soya?

P1: I just got it from the market.

I1: From the market ok so you buy.

P1: So I supplement it with that. Then there is fish.

I1: Fish meal

P1: Fish meal, then there is minerals like this one. The food is here, they have them. All this. But very small quality. That's why I say the feeds are of low quality, so I have to supplement it again. With this.

I1: Oh so this is better quality than the pig feed you buy.

P1: Yes. So we have to go to the pocket again for this one and mix again.

I1: And fish meal, how expensive is that?

P1: 100 shillings per kg. Same as the soya.

I1: Is that lots or cheap?

P1: It's a lot.

I1: So what costs you more, to feed like this or to feed like this?

P1: To feed like this, you feed it for a very long time. More than a year. The pig is just not growing. You have to do it to supplement with this.

I1: And do you supplement with anything from the kitchen or vegetables?

P1: No, I don't do that. I don't. I tried once, that why I got this disease. They call it erysipelas.

I1: You got that after

P1: After that. So now I don't. I go for the commercial feeds although as I was saying, they are very low quality. So we have to supplement it with all this. These ones here.

I1: But this costs more than this?

P1: It costs more than this (pig food costs the most), but I have to supplement it little by little. To make it more of quality.

I1: We will talk more as the weeks go if that's ok as I will hear stuff from other people and I will want your opinion on it.

P1: That's ok. I am always here. 24/7. With my babies, they are my babies.

I1: They are your babies.

P1: I have big passion for pigs. I don't do it for money. I have passion. Because i changed my job to do this. I was a hotelier. After corona[virus] I decided to do pigs.

I1: So only recently you've done pigs. And you love them.

P1: I love them. I love them.

This one is just in case the feeds have aflatoxin,

I1: Oh great, binder.

P1: Yeah binder, because as I was saying, this is of low quality. So you don't know how they do it. So I just put a little.

I1: Can I see. Can I take another photo.

P1: Because if you are not careful with these feeds, you end up killing your pigs. So i have to buy all these. Because I see them dying I give them this. I used to use [food brand name] feeds, I lost 10 pigs. So I have to be very careful. So every bucket I put a spoonful of toxin binder. Every week.

## **Visit 2:**

I1: How has your week been?

P1: Good, no diseases. Little management of deworming. No diseases so far.

I1: I can see in a week they have grown.

P1: Yeah they have grown. These ones are ready for the market. That one there. That one there.

I1: When will you send?

P1: On Tuesday. 15 of them.

I1: to [large integrated processor].

P1: Yeah

I1: So someone will come and see them first?

P1: No I have to choose for them, then I take them there.

I1: Ok so you don't have to have a certificate?

P1: We do. We have it.

I1: Oh you have it already.

P1: Yeah

I1: Oh so they don't have to come every time?

P1: No they don't. So we use this one.

I1: Oh you use a weigh tape, fantastic.

P1: Yeah. I know the exact weight I am taking there.

So it will come up to 67kg dead weight. So most of them are between 66 to 77kg.

I1: And that's good? You are happy?

P1: That's good.

I1: I find it very interesting that if you feed them more than that they go fat.

P1: Yeah. You can feed a lot but the food might be not of quality. It will just be eating. But with the right food. In the morning, in the evening, 2kg of the right food.

I1: So at home I'd be feeding these probably 4kg a day. But these would go fat?

P1: Yeah they go fat. They go big.

I1: Yeah. Ok.

P1: So i think 4kg is too much.

I1: Have you sold any this week?

P1: No i am starting from next week, on Tuesday. <Inaudible>

I1: Anything in the bucket to show me?

P4: Nothing. No disease so far. But by next week i will be giving some of them some boosters. I try very much to avoid diseases here.

I1: You know you said you get erysipelas.

P4: Yeah I once got erysipelas but that was due to negligence.

I1: Oh really? Why?

P1: Because I gave them leftovers.

I1: Oh yes that was it.

P1: So the food was contaminated.

I1: Have you ever thought of vaccinating them for erysipelas?

P1: I have vaccinated them. Yeah. The first day they came here I vaccinated them.

I1: Oh so you vaccinate all of them.

P1: Yes.

I1: Just the sows or?

P1: No all of them.

I1: So all these have had erysipelas vaccine.

P1: Yes

I1: Ok, and where do you get it because I couldn't find it in the agrovet?

P1: I have a vet who does that. It is a bacterial disease. We know that. It is quite manageable. Not like the swine flu. Bacterial diseases are manageable in pigs. Very manageable. But viral diseases, very sick.

I1: At what age do you vaccinate for erysipelas?

P1: Three months.

I1: Three months. That's good.

P1: They need erysipelas first week. Second week I boosted them. The third week I dewormed them.

I1: Ok so these had theirs quite recently?

P1: Two weeks.

I1: Two weeks ago.

P1: And next week I do the vaccination [booster]

I1: And do you repeat the erysipelas after 4 weeks?

P1: No that's ok.

I1: Just once.

P1: Yeah that's ok.

I1: Do many people erysipelas vaccinate? Cause I think you are the first I know.

P1: They don't?

I1: Well I'm only seeing small farms. So I'd imagine the big ones do. But you are one of the biggest that I see, but I think you are the only one to vaccinate. But I think erysipelas vaccination is very important.

P1: It is very important. It was bad. Do you know how it looks like? It was diamonds.

I1: Yes!

P1: Because they used to be sleeping over there. No eating. I think it might have been very big like this one, very strong, very powerful but very weak when it comes to diseases. One day is enough to knock it down. So I try very much clean-ness, management of diarrhoea. I have some, you saw the, the diarrhoea drug.

I1: Yes. Which you use when they are loose. The skazole.

P1: When I notice in the dung. I just give it. Put it in the water.

I1: And just in one group or would you do the whole farm?

P1: All of them. I do all of them.

I1: Ok so you see a bit of diarrhoea and then you do all of them.

P1: Yeah all of them.

### **Visit 3**

[Big pigs have been sold, averaging 72kg. Which was around 20,000 shillings per pig and 282 shillings per kg.]

I1: That's better than [LIA] right?

P1: Yeah it's better because they offer transport, some bonuses.

I1: So do you have to pay for the transport?

P1: Yeah you pay, then they <inaudible> later.

I1: So that 282, you get all of that?

P1: Yeah.

Talking about how the pigs that are left can now grow lots as there is less competition.

Talking about the difference between breeds and how he likes Durocs.

Talking about how this week he will do boosters and how he will have to call the vet.

P1: I don't want to do injections I am not a vet, I might miss a vein. It's the way they know how to inject. So if I do it, no I can't.

I1: So would you be allowed to do it if you wanted to?

P1: If they can show me, I can do it. If I really know where.

I1: But is it your vet who has said no don't. You might miss.

P1: Yes he said that. Yes. I am not a qualified vet so...

I1: No

P1: There is a time with another vet, when he did it he had to, some sores, they are rotting. I think he missed a vein, or <inaudible>. So you had those boils. Swollen. So when they cut them they were rotting, the meat was rotting.

I1: Ah so then you lose money from that?

P1: Mm.

I1: Do any of your friends who have pigs, do they inject them themselves?

P4: Some do, some don't. But I prefer the vet. A vet is good because will tell you, you know this pig is not doing fine. This and this and this. So those advises.

I1: So when they come do they look at everyone and give you some advice?

P1: Yeah everyone.

I1: And that's what you like?

P1: Yeah he comes here, he checks and he removes whether there are boils. He checks every pig. The ones that are not very good, he marks them, takes some samples, comes back later. <Inaudible> needs deworming....

I1: Oh that's great.

P1: Just keeps the samples, some few bloods or the dung. Then he comes back later.

I1: Oh so he takes some poo and will tell you whether they need worming or not?

P1: Yes. He doesn't just come. He tells you then, they need deworming, it can be something else. He has to go to the lab first. I insist that. Don't come tell me that it's sick, it needs this. I want proof. Yeah because the vet himself is taking money. He can make money with me. "They need deworming".... no. Come with the sample.

I1: You are the first farmer who has mentioned what we can diagnostics.

P1: I have to, I insist that.

I1: And that's so that you are not doing things that might cost money unnecessarily

P1: Yes. So I have to insist. Unless it is an emergency. The pig can be lying there maybe, if he can do what he can do then, yes. But not like this ones.

I1: No they are fine.

P1: According to me they are fine.

I1: Ok so do you find that the vet might come and say "oh these this pigs need this thing when actually they don't."

P1: Don't. That's why I insist that. If I am not very sure, I ask for a second opinion. Because I have two. They don't know each other. So I play with both. If I doubt this one, I go to that one. So I have to play them.

I1: You are cleverer than them. And do you find that when you ask for proof, for them to get the proof, is that cheaper than them just giving the medicine?

P1: It is cheaper because, maybe one pig, it's 50 bob. To the lab, so it's better. Than him coming, injecting them with some medicines there and some drugs there and maybe a few hundred bob and all this. You end up paying like 10 thousand. And you are not very sure if it is A, B, C, D.

[Talking about pigs with diarrhoea and using skazole]

P1: For that one, I don't need a vet. Sometimes I pick the dung, I smell it.

I1: How often do you have to do that?

P1: Whenever I have a doubt. This dung is not this way. That is not good. So I remove it (the pig) from there, maybe even somewhere like here. I put the medicine. Then the evening, it goes back.

I1: Oh so you don't give it to all of them?

P1: No I just pick one. The one I suspect.

I1: Oh and then it sits here for the day, has the medicine

P1: Then I observe it for a whole day. If it's the one, I treat it then put it back. Because if maybe you give all of them, that's an extra cost too. So I have to be specific to this one.

I1: It's cost isn't it.

P1: Yeah. I have to keep the cost as low as possible.

I1: And is the skazole is that expensive?

P1: Not very expensive. But I hate just always giving the medicines. I hate that. Ok so you do that for a very long time, it becomes, what do you call it? Too much drugs...

I1: Resistance?

P1: Yeah yeah. It will resist.

I1: I thought that last time I thought you said that when one has bad poo you give skazole to all.

P1: Because erysipelas is different from diarrhoea. Diarrhoea is maybe one pig picked something from the ground. Not all of them. Erysipelas is infectious.

I1: Yes it goes everywhere.

P1: It goes everywhere and it is airborne. When it sneezes, some of the water is there. The drainage, all the way to the back there. You have to do it, all of them. That's not good.

I1: I tell you what is good is your knowledge.

P1: The other one I got, the last herd I had, was swine flu. Not swine fever, swine flu. Where they sneeze.

I1: Horrible right

P1: Yeah I got that one

I1: And did they die?

P1: No they didn't. So that's why I have to get the vet. To see the symptoms and what is going on. So I have to treat all of them, because it was airborne. Swine flu is airborne. So for that one I have to do it all of them. Not like diarrhoea. Diarrhoea is few. So swine flu, erysipelas. That is all I have had. But not this flock, these ones never. Even diarrhoea.

I1: Not even diarrhoea? Why is that?

P1: Because I have made it clean. Where they sleep there, I don't have to clean with water. Maybe once per month I have to. For here, I have to wash it because that's where they dung.

[Talking about how one day he would like to add slats to the unit as an upgrade, which he has seriously thought about. Even thinking about the food wastage because of their meal feeding. But he said that he likes to wet the feed to reduce the wastage. I asked where he learned to do that:]

P1: Sometimes I go to the books. In my free time. Just google them and I read them. So mostly it is self learning. Because, last time, I was learning some farmers <inaudible>. They don't even know the pigs they are rearing. They don't know if it is a large white, a hampshire and duroc. They have no

idea. So they have to go to the books, their behaviour. How pigs do their things. So again feeding, medicines.

[Talks about how he doesn't let anyone on farm unless they have to be there. And if they do then they must dip.]

P1: If anybody comes here and says hey, I want to see your pigs. It's a big no. Not for tourism.

#### **Visit 4:**

Cementing in his own nipple drinkers as one was leaking and he likes to be self-sufficient.

He is buying new duroc piglets next week and is trialling pure durocs!

#### **Visit 5:**

[New, just weaned pigs arrived which aren't very nice.]

P1: I want to watch them for two weeks.

I1: What are you watching for?

P1: Like that one, I can see it has got worms. The skin is peeling off. A lot of them.

I1: So what will you do?

P1: I will call a vet. Yeah so, the vet had come yesterday but I told him up to Monday. Because of these ones.

I1: Ok so you will vaccinate them next week?

P1: Yeah all of them. These ones, that ones, those ones.

I1: What for?

P1: Boosters and worms. Like this one, don't look very nice.

I1: They are not as good as your others that's for sure. They are a bit itchy aren't they.

P1: These ones, they are three months old.

[Conversation about what he is doing with them to make them better in two weeks.]

P1: Next year will be different because I want to change the maize and the feed type. I will be changing them to a better one. Because I sent some samples to the animal nutrition. We call them the animal nutritionists. So I put my samples, the one I am currently feeding, I took the samples there. And I got another company which are supplying some feeds too, I took the samples there.

So my education there told me that the other feed is better. After going to the lab, analysing everything. So the other feed is better than the one I am currently feeding. So I have to cancel the contract from the supplier. So I can't just do it... legally. I have to follow the process. So I am cancelling by December. January I am starting afresh with a new supplier with better feeds.

I1: Well you send me some photos. You have my email.

P1: In fact for the analysis I wanted to see. Proteins, the one I am feeding there. Proteins is not as far. Carbohydrates is too much. Because they are putting around 4 of them. Wheat, maize, corn, that is

all starch. And they need protein. The other one the protein is well above 50%. Theirs is below 30. And you can see. So I'll be going for 5 months six months.

I1: Have you needed any medicines this week.

P1: As I told you, I have to be very careful. That's why I am watching these very carefully.

I1: Can I see the bucket, is there anything in the bucket?

P1: Not yet, only the skazole one.

I1: Ah there is skazole?

P1: Yeah. Only this one.

I1: Ah you have used. So tell me, when did you use?

P1: Yesterday, no on Monday. On these ones. And they are ok,

I1: And did you write?

P1: Not yet but I will always record. But they are not diarrhoeing now, they are ok.

I1: Did they all have diarrhoea? Did you have to treat all of them?

P1: Yes. All of them. On the feed not the water. Because they do like this. Although they have clean water over there.

I1: Ok so you put it, and you wet their food anyway right?

P1: Yeah

I1: So you put it in with their wet food

P1: Yeah wet food.

I1: Just for one day?

P1: One day. Yeah. They are ok. Because i have to observe them very closely for if their tails [movement motion]. It is a problem. If you cut it off, how can you know that the pig is sick? When the tail is swinging, it is a sign that there is something wrong with me. Something is wrong with me. So you immediately pick up a problem. If you see a pig swinging a tail like this, it is not healthy. There is something going wrong with it. This one here is has many worms. That is a sign.

I1: Could we go through my bag of drugs? These are all empty packets. I've bought them along to see which you might have used and which you might not. I'm gonna get you to sort through them if that's ok

P1: This one is a booster.

I1: Ok. What i want you to do is to start off by over here putting the ones you recognise over here and the ones you don't recognise over here.

P1: This one is ok.

I1: Yeah so you know skazole.

P1: No idea

Tylosin. But i use a different one. Not with the cows here.

I1: I might have it. Shove it over here for now but I might have the one that you use.

P1: This one, it is tylosin. But the picture here is pigs and cows.

I1: This one? No that's just cows.

P1: That's just cows. But there is another one, better than this. For pigs. This one is multipurpose, you can see? These are goats, cows. Mostly these are goats and cows.

I1: Ok.

P1: There is another like this one but for pigs.

I1: Ok we'll leave those in the middle then. That sounds good.

P1: These are vitamins.

I1: Yeah? You recognise?

P1: This one, this is just the same. This is a dewormer. For pigs.

This is a booster. Yeah it is a booster.

This one I have no idea.

This one is an antibiotic, but I have no used it. Because this one is for, you can see here, there are pigs here, also..... There is one which is only pigs only.

I1: That you use. We will see if I have it, you can tell me if I don't have it.

P1: Yeah it is a bacteria one. It is an antibacteria.

Most of these ones are vitamins.

I1: Do you recognise that one?

P1: Yeah I use this but for the chickens.

Antibiotic.

This one I use it on the chickens.

This one I have never used it.

These are dewormer.

Egocin.

Antibiotic.

I1: Do you recognise?

P1: Yeah

This one no idea.

No idea that one.

This one no idea.

No idea with this one too.

No idea with that one.

Alamycin i know about this.

No idea.

This one no idea.

Antibiotic, I know about this one.

No idea.

No idea.

S-dyme yeah, I know about this. It is a diarrhoea one. Same as Skazole. I used to use this but not as powerful.

This one is a vitamin one. It is for vitamins.

Most of them are water soluble.

No idea.

Antibiotic. It is an antibiotic.

No idea.

This one is an antibiotic. But I have seen another one with a bottle.

I1: Is it this one?

P1: Yeah but without all this. Just for pigs.

Like a booster. Looks like a booster. Not very sure but looks like a booster.

No idea.

I1: I want you to split these ones into the ones that you have used on the pigs and the ones that you have not used on the pigs.

Cool ok, you have used....

P1: This is a booster, this one is a dewormer. [Talking about his own drugs]

I1: Now I want you to sort these ones, so these are the ones that you have used on the pigs. I want you to sort them into the ones that you use frequently on the pigs and the ones that you have used not frequently.

P1: My pigs that get sick always, this one mostly yeah.

I1: This one is frequently.

P1: This one, same as them but i changed it from (S-dyme), to this one (Skazole). These are the same but this one is better than this.

I have used this one. This is an antibiotic. I have used this. Same as this. This one is a dewormer, I have used this.

This one, I have used it. Yeah the same.

This one not much. Mostly this one is for the chickens.

This one, penistrep.

I1: And not frequently.

P1: Not frequently.

I1: So now finally, I want you to go back to this whole group and over here I want you to put the ones that you have used in the last month and over here I want you to put the ones that you haven't used in the last month.

P1: Just that. All of these ones I have not used, for the last 3 months. For the last three months I have never used.

I1: For the last three months you haven't used any of these.

P1: We boosted them in July.

I1: And what did you use to boost in July?

P1: Booster? This one. And this one.

So these ones here are mostly what I use and some bacteria.

I1: Now do you think I've missed any? Do you think in my bag there are some that I didn't bring?

P1: No.

I1: You think I got them all?

P1: They are there.

I1: Thank you. Do you remember, I can't remember if we talked about this or not. If you have a pig that gets sick just before you are supposed to send it to slaughter? What do you do?

P1: Ok I haven't got that challenge. But for that one you never go to the slaughterhouse. You never go there.

I1: Ok how come?

P1: It is not good. It is against the regulations.

I1: For it to be sick.

P1: You can't take a sick animal there.

I1: And if you have to give an animal a medication? But it's ok, can that go?

P1: Withdrawal period of 21 days.

I1: Wow, you are good.

P1: Any of them.

I1: Can you show me where the withdrawal period is on here?

P1: Where are you, where are you?

I1: You have it? Perfect. Thank you. Is there ever a time where you have to send to slaughter, even though the withdrawal period is not done yet?

P1: I haven't. You have to follow the rule of law.

I1: Do you think other people follow the withdrawal period?

P1: Not all people. Or they use shortcuts.

I1: Why do you think maybe someone wouldn't follow the withdrawal period?

P1: Money. Money is everything. Because the market today, you have agreed your pigs like yesterday. And the market is ready. You don't care. It's about money. You sell them to the market. Ok it is not right. It is not right for the customer, the one who is taking that meat, can be having some problems. It is not good. The buyers might never know. It is the consumer that gets the whole mess.

I1: Ok and do the buyers, do they ask you?

P1: They don't because they have all the guidelines. So you miss one there, there are penalties, maybe your license will go. All that.

I1: And this is [large integrated processor]?

P1: Yeah that is [large integrated processor]. You have to go through their papers. Make sure.  
<Inaudible>

I1: Ok and [LIA], would they ask?

P1: I think that is a makeshift one. I don't like it so much. Yeah so I don't know about [LIA] so much. But I think there, there are many <inaudible> there.

I1: Ok thank you. And if you have a dead pig, what do you do with it? If a pig dies.

P1: In here, I just discard it. Bury it or sometimes I may ask for post mortem. To be sure, what, why? Yeah before I discarding it, I first seek an opinion of a vet. By a post mortem.

I1: And then you bury it?

P1: Yeah bury it or burn it.

I1: Ok, because there is not as much space here right?

P1: Yeah there are other space up there.

I1: Thank you so much. How have you found the study?

P1: Not bad. Like back in school. I have to go one by one.

I1: Is that ok?

P1: It's ok.

I1: Has it been annoying or has it been ok?

P1: No it's ok

I1: And the bucket and the chart? Has it been ok?

P1: Ok, I will still use them. When the vet comes

I1: Will you? Oh you will still use them?

P1: I use them. For the vet who will be coming there. Like on Monday. I have to write down, the vet was there he did this and this.

I1: You will write?

P1: Yes I have been doing that. That is the challenge you gave me.

I1: Why will you write?

P1: For future reference. And in case, [large integrated processor] might come here. They want some records. Ok I have some records but not mostly about medicating them. About how they are faring. Managed.

I1: Ah I'm so pleased that you will continue. And it will be useful to you?

P1: Yes, it will be.

[Later he said that the pen-strep he used when the pigs had flu.]

## **Farm 7**

### **Visit 1:**

I1: Tell me, who do you have. What do you have.

P1: Now these pigs they are due for slaughter on 31st of this month. They are due. A total of 11. The challenges we normally have here, they are not actually diseases. We don't have too much of a disease problem. The diseases I have noticed are when it is cold. When it is cold they suffer from pneumonia. And sometimes, I normally buy piglets. So you might end up buying some piglets which have a disease. But if I have reared mine, I usually give them iron after two days. And then I give them again after 21 days.

I1: This is when you breed your own.

P1: But when i buy from outside, you never know whether they are injected or not. And i am trying as much as i can to stop buying from outside because i have done it almost 3 times. I bring the piglets here, and they die. And when you call a doctor, sometimes they can, for example, when was this. About six months ago, i bought piglets from three different locations, for three different homes, and all of them died when they came here. And when I called the Dr, he told me that it is a disease which has been bothering them. I don't know what kind of disease it was. Because even when they were treated, they didn't heal. They died. So i have noticed that when i breed mine, at least i am able to control. But i will show you, i have one there which has given about a month ago, and the piglets are quite ok. Otherwise all this, these i have bought from outside, and the other thing is, sometimes you buy from outside, and they are have not been fed properly from the word go. So when they come here they take too long. That's one thing. Otherwise, as far as diseases are concerned. We only deal with deworming, we deworm them. I normally call a doctor to do the deworming. You give them vitamins, boosters, otherwise the diseases are very rare. Although i don't allow too many people to come in. Because the diseases which we experience here are normally brought from outside. And especially from those people who, we have a slaughterhouse here to fill, if you encourage those people to be too much coming here, they normally bring diseases. Because there are diseases like swine fever. Which normally comes from Western Kenya. Since they are brokers they will buy pigs from anywhere. And for example recently about 2 months ago, there was an outbreak at [Kenyan

town] of swine fever. So in such a case we normally block them not to come, because they will leave me here with a lot of problems. When we hear there is any other kind of disease we normally disinfect using [brand name]. I don't know what you call it. The designing name is [brand name]. So I don't know what the scientific name is. We spray the housing with those ones. There is also salt ash. It's an old thing, which is normally found in Magadi. It's a very bitter kind of salt. You find it in the markets. It is used for something scientifically, I don't know what. It is very good when you sprinkle it down here. Even if you go to [large integrated processor], when you are entering they put some ash on the floor. They sprinkle that and then they spray water. You chase away whatever bacteria is there.

I1: so that's interesting that your biosecurity will change based on what disease you know is in the area.

P1: otherwise here I normally keep, we call it penstrep. I think it's an antibiotic. That one I keep around and whenever I notice, if I come, because I am always here, I come here every morning, and I have a lady that helps me to sweep these things. If I notice maybe one of them is not eating or it is coughing or anything, I will normally use that penstrep. I will show you. That is another one which helps to avoid the swellings.

I1: swellings when do you get swellings?

P1: no the inside, for example now you have a pig with a pneumonia, there is inflammation, that one helps. It is called what. Anyway I have the bottles here I will show you. Otherwise that is what we do, unless you have some questions.

I1: thank you I have lots, that was so helpful thank you. So when you said disease is not your main challenge, what is your main challenge?

P1: feeding. Feeding is the most difficult thing around here because the feeds which are in the market, they are of poor quality. The main ingredients which is the protein or whatever, those ingredients which make up the feeds are not there. So I am forced when I buy the feeds from the market I am forced to come here and add fish meal or soya. Normally protein is what is lacking. Vitamins is not too much. They have other stuff they call boosters which they sell in the market.

I1: They call boosters which some people are calling vaccines?

P1: No, there is a vaccine for vitamins, but this booster is for feeds. I will show you one packet here. The main challenge here is the feeding. Otherwise marketing, marketing is not so bad because we have a [large integrated processor]. If you go there and make a proper arrangement with them, for example me I deliver normally pigs once a month, so what I do is I go there I tell them for example these ones, I booked them about 2 months ago. These ones are already booked for November. So I have a cycle of 30 days, and when you do that when it comes to selling there is no problem. And they buy well. Because if I deliver them today, they slaughter them tomorrow, so I wait tomorrow and the next day and the Third Day I will go for the cheque. So marketing is not problem. The whole issue is now feeding. The feeds are very expensive. They are of poor quality. So instead of these pigs taking about 5 to 6 months from when they are born they are taking about 8 months. So you find that you are not doing so well.

I1: so these are seven

P1: these are 7 months now. By the end of this month they will be seven and a half. Which is not bad. Anyway they are due, I had another one I gave it to an old man who had a problem. Otherwise I would have taken them to the market at the beginning of this month.

I1: do you ever sell to [LIA]?

P1: those fellows are thieves. You go there and deal with the brokers. What they will do, they will come here and take these pigs, you see them, since they are not straight forward they will go and slaughter the pigs themselves. They will not pay me. So you keep on going there for about three weeks. And they have already sold the pigs, and they are telling me we have still not slaughtered them. And if they have not slaughtered them they will keep the pigs there for maybe a week without feeding them properly. So the weight will go down, the quality will go down, so by the time you... And when they are paying you they will not pay you the whole amount. They will pay you in patches. Which is not fair. So [LIA] yes, if you don't have a choice. But they are not the best.

I: So sometimes you have to? Or never

P1: unless maybe you have a problem. Someone can have a problem with money. And the pigs are not due, because [large independent processor] they use the weight. Maybe for example these ones I cannot take because the weight is not yet. So I can sell them because I have a problem with money. Otherwise I would not recommend [LIA] too much.

I1: so in the last year have you sold to [LIA].

P1: was it in March. And they stole 10000 from me.

I1: stole 10,000 shillings?

P1: I was very bitter about it. But I normally don't take the pigs there.

I1: so [large integrated processor] what do they do for you?

P4: marketing is good. I like them because if you have a proper arrangement with them, they will pay your pigs on time. If you go there they will give you a date. Bring your pigs on maybe 15th of November. One week before 15th of November you will go there and they will give you an order. And a certificate which I will use to Jeffrey, to get a movement permit. But right now they have a slight problem where because the people who are giving the no-objection certificate are also the meat inspectors. For example I was there on Tuesday, I spent almost the whole day there. Instead of giving the no-objection certificate, they told me that I go yesterday. So you find that you are wasting almost two days following that document. So I don't know maybe the company will take it up and will employ their own veterinary doctor. Who will be issuing this document. Otherwise the pigs are healthy, they have no diseases, they don't have any problems. Yes that is the way it is. So that the main challenge is feeding.

I1: so [large integrated processor] give you feed?

P4: they have feed, but they are in short supply. Sometimes we go there with a pickup which can maybe pick up up to 20 bags but they will only give you two because the demand is too high. And the raw materials are not available. And some people are hooligans, they go there and take all the feeds, maybe they have selling shops, and you come there and pick them in their shops and you are still buying a grower for 200 shillings, when you go to buy from these brokers, they will sell it to you at 2500. So you find it is not economical. So when you go there maybe they will give you two or three bags. So you find it is not profitable. To drive all the way to [large integrated processor] and then get

two or three bags. At the same time apart from the grower feed, the other feeds they produce are not the best. They are not up to standard.

I1: and you use their genetic?

P1: that is what we are trying to do.

I1: For AI or boar.

P1: have we finished here you can see another.

I1: yes so how many do you have here.

P1: right now I have not counted. These ones they are 15, I have bought them from somebody. And they are ok they are not too bad.

I1: their ears are quite red.

P1: yeah because of the heat. Anyway he assures me that they are healthy

I1: can I take a photo

P1: Yeah. About about 50. In these units I have about 50

I1: and then you have more?

P1: yeah I have two sows there.

I1: Two sows. This way?

P1: I used to be a little bit up laquini because of feeds problem I have gone down. This one (new sow) I bought it on Sunday, it is a good breed so I went for it all the way to [Kenyan town]. It's pregnant. I am trying to upgrade my, instead of buying from people, I want to be selling 10 pigs per month. I want to have seven of these, but instead of keeping a boar I want to do artificial insemination. It is better.

I1: From docteri do that or you do that?

P1: there is a person who comes from [large integrated processor].

I1: She's big

P1: yeah she is big

I1: can I take a photo of her and her piglets. You are feeding her well

P1: Yeah

I1: how many has she got

P1: 12

I1: that's fantastic

P4: this one is a hybrid from [large integrated processor]. We bought her from [Kenyan town]. And these are artificial. These are 1 months old now.

Anyway they are not bad, according to the standards around. So they will stay with them for another 3 weeks.

I1: do you have to castrate them?

P1: yes I will call a doctor when I remove them from the mother because it is very bad, when you touch the piglets.

I1: oh she is annoyed

P1: yeah she is annoyed. Because the secret seems to be you have a good breed and good feeds. You can make something. Otherwise that is the way it is. We cannot expand very much here because you can see it is a village and the big problem here is also disposing the manure. It is a big big problem.

I1: Yes what do you do with it?

P1: I have a piece of land that I remove. So when it is dry I put it on there. The ones you can see, the bags that. I put it on a lorry, and the manure is taken to the shamba. Which is very good for crops.

I1: so you don't call this a shamba?

P1: no this is a residential plot. It bothers people because these are rental houses. Although we try to keep it as clean as possible, because we clean the piggeries in the morning and in the evening so they don't stink. And also we use disinfectant.

I1: can you show me your medicines?

P1: yes. This one we use for deworming.

I1: ok can I take some photos.

P1: it's a good one. This comes with a doctor, this is a booster, this is pen and strep. That is an antibiotic

I1: what do you use this for?

P1: whenever you cannot identify anything, but you can notice that it is not doing very well.

I1: and so when do you use this one and when do you use this one

P1: this one it comes with the doctor, I don't know what he used it for. He had come with it, he uses it in combination with that one.

I1: okay so the TMPS he uses in combination with the pen strep.

P1: yeah 5 ml of that one, and 3 ml of this. This one is to avoid inflammation [TMPS], for example now, the pig is sneezing, it's coughing, this one is very good when you use it in combination with that one. Otherwise, this is iron. For the piglets.

I1: and that's everything that's all you have?

P1: normally whenever I have a problem which I cannot identify I call the doctor. And you know the doctors are also funny because he won't tell you exactly what drugs he is using. So he will come with his own drugs, inject the piglets and go. It's business you know. Because if he tells me and he knows I can also inject them, he won't tell me because he will lose their business. Otherwise

I1: how do you feel about that?

P1: well it helps but I would feel better if I knew what the problem was. Because I would cater for the problem, because sometimes you call him and he is not available, so if I knew exactly what was

needed I would go and buy the drug and come and inject. Of course the instructions are there, I can read. And you would just inject, and I know where to inject. And life continues

I1: so he won't tell you the disease

P1: sometimes they don't. But what I have noticed, pig diseases are also funny, because even some of the doctors don't know. They are just doing it for you know trial-and-error methods. I remember sometimes back I bought some piglets, I put them in that corner. By the time that in fact the last time that one gave birth, so I called the, and he is a doctor, he is working with I think <inaudible>, he came. I noticed that those piglets started dying, I had bought eight, two of them died so I called him. He came and injected them, and after that he told me let us go and inject those ones. And those ones were there. So that they will not get the disease. Actually when he injected them, three of them died. After a couple of days. And these ones continue dying, in fact all of them died out of eight maybe five of them died. Only three remained. So I noticed that he did not know what he was treating. But what to do. Although he told me that it's a disease which is given even[large integrated processor] a big big problem. It affects piglet when you remove them from the mother, if you continue with, you have powdered milk like this one, and then you give them with the food that disease will not come. But if you remove them from the mother and the feeds you are giving them are not up to standard they will be affected. So I don't know what kind of disease that is.

This is powdered milk

I1: oh so you give cows

P1: this is the stuff which has expired, because it is not good for human consumption but it is good for animals. It is just proper milk, powdered milk.

I1: but if you give this to the piglets they don't get sick

P1: no they don't, actually it helps.

I1: and this is your other food

P1: yes this is the other food I usually buy from the market.

I1: thank you so much. That has been so helpful already. And I get to see you four times.

## **Visit 2:**

I1: How was your week?

P1: I have had some kind of cold but now it has improved.

We having some drugs.

I1: Ok. Oh you have a dead one. Oh no, what happened?

P1: Yeah. It was diarrhoea.

I1: Ah you've done something for me, thank you so much.

P1: So i called a doctor and they recorded this. This are the drugs that he gave them. And we are still continuing with the treatment.

I1: So what happened?

P1: So you remember when you came here I told you that I had bought those piglets. I think when they came here they had some infection.

I1: Right.

P1: That is what affected them. And now they are improving.

I1: Bowel oedema, that's never fun.

P1: This is the disease i was telling you. This oedema, I was telling you is very common and very troublesome.

But when it is found on time, it is treatable.

I1: Can i see the dead one?

P1: Yeah you can.

So he told me to keep it so that he will come and do some

I1: He will come and post mortem? That's good.

P1: But it is diarrhoea. Mostly it is diarrhoea. Because even the other ones they were diarrhoeing and because we give them those the drugs, they have stopped.

I1: Can you show me them? So you noticed shortly after I came did you? You have got some big pigs in here!

P1: Yeah those ones are due to go on 31st to [large integrated processor].

I1: Great. Hey little guys. Ah you are struggling back there aren't you.

P1: Yes so they are not over it yet so this one is still. But the piglet is better. Yesterday it was not so good. But the others, they are ok.

I1: Ok. I'm sorry.

P1: It's normal.

I1: When you buy in?

P1: When you buy in, they are not getting proper treatment. When they have come from, it normally happens.

I1: How annoying.

P1: It is very common when you take them from the mother, you know the milk. The mothers milk is cut off. So it happens.

I1: You noticed them not very well...

P1: The day you came, the next morning i noticed one of them was not feeling very well. My normal doctor was not around. So i had to wait. When he had not come by the evening i consulted another one. And that is the one who came and gave them injections. Two each of the drugs you have seen. And they have improved.

I1: So the vet injected and you haven't done anything since them?

P1: No, i am still giving them another drug. Which i will show you.

I1: Oh well fingers crossed. The others look better dont they. And so your vet will come and do the post mortem?

P1: Yeah he will come today in the evening. Yeah because he is a bit busy.

I1: And do they do it here or do they take it back?

P1: Yeah they will do it here. I think he is an experienced man so he will do it here. The others are ok. The others are no problems.

I1: It doesn't seem like it's passing right.

P1: It is a disease that is particular for the piglets. The big ones, maybe they are affected by pneumonia or is very rare to see them getting sick. Unless the weather is very cold. When the weather is very cold we normally put some sawdust. Otherwise at this age it is very rare to see them getting sick.

I1: Why do you guys use sawdust and not straw?

P1: Because straw is expensive. Especially during this dry season. People are using it to feed their cows. So when you go to buy a bunch of that straw is about 500. And they will just use it for a few days so we prefer sawdust or the shavings. It's ok.

I1: So how old do you think these piglets are?

P1: Should be three months. Although they were not getting properly fed so they should be a little bit bigger than this. So they are three months.

I1: Do you want to show me and then i let you get on. So 31st so they've still go a bit more to go. They are gonna be huge. I'm not gonna touch you cos I've touched the dead one.

P1: So this is the drug.

I1: Colistin ah. So how are you giving this?

P1: So that's about 5g

I1: To each piglet?

P1: Yeah

I1: And then you put it?

P1: We mix it with milk so that they can take it quickly.

I1: Oh yes with your cows milk that you use.

P1: So there is in addition to what the doctor gave.

I1: What they have already had. So, i hadn't realised this last time i came to see you, that technically you are not supposed to inject? Is that right?

P1: Myself? I can. Some of them are very simple injections. But the doctors have showed me how to do it. So you just, because the drug has instructions on how to use it. And you know where to inject. Whether it is intramuscular or under the skin. Especially for deworming we do it under the skin. The others are

I1: That's harder though right

P1: Yes so i sometimes do it but when it is serious like the way it was, i have to call a dr.

I1: And actually inject all of them every day would be a nightmare.

P1: Yeah, for example this one i am supposed to give over five days so this is a bit expensive. But the injections you give only once. So it will be continuing with this one for five days.

I1: Ok.

P1: This one is simple, even she can do it. Because it is just a matter of, if there are 11, maybe this, 5 and a half of this. You mix with, you open it, then just give it.

I1: Great.

P1: And they survive.

I1: They look much better, that's good. You did the right thing by calling. And that must be hard when you call and the vet is not there instantly.

P1: Yes especially when it is the evenings. Because sometimes i don't spend the whole day here. So when i come here in the evening and i find that one is not feeling well, you call the dr he is not there. Sometimes it is disturbing. But if they are checked in the morning and then in the evening then they are, by the time you call the dr it is not so serious because of the time limit. It is not so good when they are infected and one of them dies and you have called them but you just don't feel so good.

I1: So will you say anything to the person who sold you them?

P1: No. Sometimes you find it is not so good. Because i took her pigs, i did not notice anything when i was taking them. So going back and starting telling her... with animals it is very common. Even a cow you can buy it. It is looking very healthy but when it comes here something maybe happened, or you took it from the owner and maybe it was already sick. If it dies in your hands then you say, ok.

I1: Thank you so much for getting your vet to do it. How happy were they to fill it out?

P1: Yeah he was ok with it. Because it is a record, it shows me, if you keep it, it shows me which kind of diseases which are giving me a lot of problems. You can look for solutions.

I1: Yes. Would you want to keep a record in the future do you think?

P1: Yeah because i intend to increase the number of pigs, records are very important for pigs for whatever. Drugs, whatever drugs. It is good to keep records so that you can see if there is one particular disease which is giving you a lot of problems. Then maybe you can even go to your father, even to the university and see what they can help.

I1: You are very good.

### **Visit 3:**

All the bowel oedema pigs are better. Even the one that was really really sick. No more died after the one on the last visit. No medicines given, nothing in the bucket or on the chart.

### **Visit 4:**

I1: When you have a dead one, what do you do here?

P1: Ahh if I notice it is not doing very well, sometimes i call the vet. We can slaughter it and then he will come and check what the problem is, if it is that it can be consumed we give it to people around. Otherwise now for example now those which ones, those which died from that lot there (bowel oedema pigs), we boiled them for dogs. Because they were already injected with the drugs. So, we boiled them and I gave to those people who have dogs. And the dogs were very happy.

I1: I bet! Ok so if it's been given a drug, then you wouldn't eat it yourself?

P1: No, no, no, no, no. You can't do that. You can't. Even if it is a big one, like maybe if we can't dispose it, dispose it very well, you can boil it, give it some of it to the dogs. If they can't finish we bury the rest.

I1: Yes, because I was wondering, because you are in a more residential area, what do you do? But yeah that makes sense.

P1: Yes, so and you know meat, we have a lot of poor people around. So if the meat is ok there is no point in throwing it away.

I1: But the vet will check that it's ok

P1: Yeah of course.

I1: That's brilliant.

P1: Yes to come and give us the go ahead. Otherwise if it is not good we just dispose it.

#### **Visit 5:**

I1: How has the week been? They have gone

P1: We have not found any challenges. Otherwise the problems are still the same. Lack of good feeds.

I1: They are growing though.

P1: But if the foods were better, they would have been better than this. But we are hoping maybe if the rains comes, the cost of the raw materials will go down. Apart from the imported maybe because of the poor strength of the kenyan shilling. Maybe the imported materials will still be high but the local materials like maize, or wheat, will be better. Yes.

I1: Did you get a good price for these?

P1: Oh yeah. They were not bad. In fact two of them were overweight. Yes i lost about 15,000 kenyan shillings because of the overweight. Because one of them had 89kilos. The other one had 84. And when those people, their prices, the best prices range between 65 and 82. If the pig is lower than that it is not so good. If it goes above that, we lose money. But you know when they are eating together, for example now if you look at this one, but see there <inaudible>. You cannot segregate it because i don't have anywhere to put it. And also what I have noticed with pigs is that they are funny. If you separate them, when they are together, like those ones now, you find them all of them are eating. When you segregate some of them, for example now if you check this section and this one. These ones are bigger than this. And they were together. That's why i bought them from the same place. Now these ones are bigger than, but when they are together the sizes were the same. Because they compete when they are eating.

I1: So would it be more economical to send one overweight one to [LIA]? And then send the rest to [large integrated processor]?

P1: No it is not economical because what they do at [large integrated processor], if you take this one today they will not slaughter it today. They can even keep it there for a week. So by the time they come to slaughter it, the weight has gone down. And when they slaughter it they won't give you the money in good time. That is the reason you don't go there. And the prices at [large integrated processor] are better than this. So unless, maybe you find somebody, a broker, who is really reliable, it is not advisable to take pigs there. There is another slaughterhouse at [Kenyan town].

I1: A new one right?

P1: Yes, no it's an old one. But they also very tricky because they will tell you that they want to remove the skin. The skin and the fat, so they are saying they will remove that skin and the fat and they will buy the skin of the animal at a different price from what they are buying. So I don't want to go in business with you.

I1: So any medicines? Anything needed?

P1: No I have not used, apart from the ones we used on those ones. During this course of the four weeks you have been coming here, I have not used any drugs.

I1: Can you help me with something? The last thing I need you to do for me is just over here.

What I would like you to do for me is, in this bag I have lots of empty drugs that I would like to know if you recognise them or if you have ever used them. So first of all, what I want you to do first is I want you to sort them into two piles for me. The ones you recognise over there and the ones you don't recognise over here.

P1: Skyjactine. I used to use it when I was rearing chicks. I have not used it so much in pigs, but I have used it in chicks.

I1: 37 was a recognise.

P1: Tetranor. This one I have not seen. Is it from China?

I1: Probably. Most of them are.

P1: Myself I don't like Chinese products. They are not so reliable. But drugs from Europe, mostly from Germany, from Sweden, from Netherlands, they are normally very good. This one I have not used.

Even this one I have used with the chicks.

Penstrep, we have used. We normally use.

This one I have not. What is this for?

This one I have not used.

Yes this one I have used.

I have not used.

Tylosin, no.

I think I have.

Alamycin, I think I have used.

I think they are also the same with that one but maybe with a different name.

For these injections, maybe the doctors i call may have used them. But for me personally, no. But sometimes i do call them. And you know some of the doctors don't tell you exactly which disease they are.

I1: Which disease it is?

P1: Yeah they don't tell you which disease they are treating. So they could have used them sometimes but...

I have used in chicks.

These ones we have used with chicks. Yeah with kukus.

Alamycin I have used.

Penstrep yes.

I1: This one is a bit more difficult to see.

P1: This one I have not used.

I have not used.

I1: So we can ignore all those then. And what i want you to do with these is sort them into the ones you have used on the pigs and the ones you have not used on the pigs.

So you said that 25 is for chicks.

P1: Yes

I1: Also for chickens? 28?

P1: Yeah

This is for chicks.

Penstrep for pigs.

Alamycin. I think i have used on pigs.

Kombitrim.

I1: So now we are gonna ignore these and i want you to tell me the ones you have used frequently and the ones which you have not used frequently.

P1: It's only these.

I1: 12, 15, 20

P1: Most of these are penstrep

I1: So what do you use these for?

P1: For penstrep. Actually it goes with this one mostly.

I1: Ok so you would use the penstrep and the oxytet together.

P1: Yeah when the pig has a problem with breathing.

I1: Pneumonia i think you said?

P1: Pneumonia this kind of thing. And penstrep is good because even when you have something which you don't know what it is, you wake up, she comes, she tells me, oh this pig is not feeling so well. Even if you don't know what it is, you just use penstrep. But mostly during the gastrotomical problems, when you are breathing what what, this they go together. Even this one.

I1: Ok

P1: A combination of kombitrim and this one also helps.

I1: For breathing.

P1: Yes sometimes you find that the nose is blocked. It's coughing. Sound like coughing. They help.

I1: So lastly, I want to put them all back together again and i want you to tell me which you have used in the last month and which ones you have not used in the last month.

P1: This kombitrim. Actually the three of them we have used.

I1: Cool so the oxymet you have used in the last month, penstrep

P1: Penstrep, oxymet and the kombitrim.

I1: Can you tell me, when you have used them in the last month and what for?

P1: The same problems i have told you. The problems in breathing, sometimes it is coughing. We used. For example now those ones, there was one which was, was it this week? Early this week. Used these two. This is the same as this one [pointing to his drugs]. This is kombitrim. And we inject them only once. There was one pig which was coughing, we gave it just one nini. We didn't do it twice. And it improved. So we normally use this.

I1: Great, thank you. So you will inject?

P1: Yeah, i know how to inject.

I1: Cool.

P1: Apart from, and also the other drug we normally use is for what, deworming. We normally use...

I1: Do you use any other antibiotics that you think i might have missed in the bag?

P1: They might have been used by the doctor. And some doctors are also very funny because, if they notice that you can do it, they even hide the drug they are using. Because they want you to call them. And because it is not so tricky injecting a pig. Because you only need know the amount of injection you are going to give it, and where. Normally use it on the neck. But the doctor will hide it, he doesn't want you to.... this is what we normally use on piglets. For piperazine. For deworming. And there is also an injectable dewormer. This one.

I1: The levacide

P1: Good for deworming. And it is only once. Especially in this size. Once in every three months. But the small ones need this one for once a month. Until maybe they are 4-5 months.

I1: Great. Thank you so much for your time. Do you remember last time you were, although no, I don't think I asked you about this properly. If you have a pig that you have to give a medicine to just before it is going to slaughter, what do you do.

P1: If we injected, we don't take it to slaughter immediately. You have to follow the instructions which are on the packet. Because sometimes they say when you inject you stay for, for example you can see here. Normally it is 28 days. And of course it is a cow it is 3 days. But for a cow, for these pigs, you cannot inject it if it is going within that month. So you have to follow these instructions.

I1: And has there ever been a time that you haven't been able to follow that instruction?

P1: Maybe that one, if you find that it is not, the health is not very good, maybe now you can call these people at [LIA]. Because now there is a doctor there who will check the meat. If you find that it cannot wait, if I find that I cannot wait until I take it to [large integrated processor], I can call those people. And they will come and take it. Although maybe the price is not so good. But that one is safe because when it goes there the doctor will check what's wrong with it. But those ones we normally sell live here. You call the broker, you negotiate the price, he tells you, he takes the pig. So you don't have to go there. Because you don't know, you might go there and be rejected the whole thing. So you lose. So normally if they come and they agree to take it, of course you are not forcing them. If they come, they see it, they agree to take it, because for a pig normally the meat is, the edible meat has nothing wrong with it. It is the internal organs which are normally affected by some of these minor diseases. Unless it is swine fever. The other diseases which kill pigs, pneumonia is very bad with pigs. But here it is good because the weather is good sometimes. Unless it is during winter time between June and August. By that time you know it is very cold. That is the time they are affected by pneumonia.

And you know pneumonia. The doctor will come and treat it but if it is not so good you can sell it to those people. Or as long as it is not injected with those drugs.

I1: Ok so if it has been injected? Can you still sell to [LIA]?

P1: No it is not safe. Although the doctor will go and check it, but for me I don't think it is safe to do that.

I1: Do you think some people do?

P1: Ah, especially those brokers who sell these pigs. They are very unscrupulous. They will do anything to get money.

I1: So they will take a sick pig sometimes, whereas [large integrated processor] wouldn't?

P1: [large integrated processor] would not.

I1: Ok, and if you said to a broker, I have given this an antibiotic,

P1: What they normally say, they will go and put it somewhere and wait. And if their doctor says, if it is good, maybe he will check the meat, he will either condemn it or they will say it is good for sale. So I don't know exactly what they do there. When they take such a pig.

I1: Ok so if it has had a medicine they might take it and say to you, we will wait.

P1: Yeah. But not here. They will take it and maybe go and put it somewhere. Or slaughter it, I don't know. I don't know exactly what they do when they take it from here. But they will, if it is not so, if it is not showing such bad signs. Normally he will take it. If it is not so good, even me I cannot agree to

sell it to them. Let it stay here. If it survives, fine. If it doesn't, I will slaughter it for the dogs around. We normally boil it. We cut it into pieces, put it into that drum, boil it. By then you know if there was something wrong it will not be there.

I know in a place like Britain, your standards are very high. But here. Here the government is not so.... some of the people who have been given this responsibility by the government are not responsible. And money in this country has become corruption is too much. And it is affecting a lot of <inaudible>, where you would expect people to behave like human beings. You find some of them are not doing so. So we are having these problems. But it is a growing country so what we do. For example some of these drugs, some of them are manufactured here in this country. But when you compare the quality, of the drugs, of course some of them are good. Especially now the drugs coming from China, some of them are produced here. You find that some of them are produced from Europe are better than what we have locally.

I1: And when you say better, what do you mean? What do you notice that is different?

P1: The response. When you use on a pig or chicken or anything. You will see the response quickly. But these ones you can use, use use, and of course you are using money. The response you will find that the animals are not responding all that well.

I1: That's a bit scary isn't it.

P1: The problem is our government because they have these thing they call KBS. Kenya Beareau of standards, which doesn't do a commendable job at all. Because the people who are supposed to check these things, anything coming into the country, anything being manufactured here. They are supposed to check everything. Make sure that it is the required standard. But they don't. They will go there and get bribed by these manufacturers. And we get these funny things. So those are the problems which we face here. But we hope one day they will go.

You will find a responsible government, not actually the government, the people themselves. Because now if somebody is given the responsibility, you are the doctor in charge of this area. These are the people who are not doing their job properly. Which is a pity.

But there is nothing you can do.

## **Farm 8**

### **Visit 1:**

I1: can you show me the pigs, can you tell me about you

P1: yeah yeah. This is my business, I do it in a small way. And I've been doing it for the last 10 years.

I1: Oh you are an expert

P1: not really. We start with here. That is my boar.

I1: he's lovely

P1: he's lovely thank you

I1: A Berkshire?

P1: It's Berkshire?

I1: I think so?

P1: Hampshire or Berkshire

I1: right ok

P1: but it's a crossbreed. They are scared they have seen a visitor. These are about 16 of them. We have problem with feeds, so they have not been able to grow very well. Because the feeds are substandard. We are thinking of making our own feeds. So we give leftovers from everything else which is a challenge, because we can hardly afford to buy feeds. A sack sometime ago was going for 1,800, now it is going for 27. That's a whole big difference

I1: is that one bag?

P1: one bag

I1: For 2700 shillings?

P1: a 70 kg bag used to go for 1,800, sometimes like 6 months ago. Right now it is going for 2700. It is really because there are no grains in the country, we are experiencing that. So they have really degraded. That one is affecting us so so much. Now the other thing, these were been born a week ago. You can see the leftovers we are giving, these are carrot peels. She had nine, but two were still birth

I1: so they are one week

P1: yeah one week

I1: and you have done their tails

P1: I do it myself

I1: you do it to yourself?

P1: yeah I clipped the teeth. I gave iron injection.

I1: how do you know how to do all that stuff?

P1: I went for a training day. And I was able to do it. I gave them an injection of iron. . I have given them booster.

I1: for vitamins

P1: yeah multivitamins I will show you What I have been using. And now I clip the teeth,

And I did tail docking.

I1: Ok. And you find it easy?

P1: it's easy for me

I1: how do you do the tails?

P1: I just do a scissor then I spray with alamycin, the back so they don't get infected.

I1: yes ok. So special scissor or just normal scissor?

P1: special scissor and I disinfect them. Yeah I just disinfect them.

I1: that's good

P1: because you can't afford to call dacteri any other day. It is very expensive.

It had footrot this one (sow). Here.

I1: what did you do for the foot rot?

P1: I just used bicarbonate soda. I washed the place and it healed.

I1: oh good. She's lovely

P1: she's a first time mother. She's docile.

I1: this little one that holds its foot up, do you do anything for that?

P1: Dacteri, a ta ni pia hapo si joi. (Doctor she will too, i don't know). That I am a bit confused, since Dacteri is here.

I1: She is here.

I3: I have just noticed it, even myself.

P1: even when it was given birth, it was not going. It was not moving around. I do not know the problem. she had a problem, of walking around, I noticed. and this one, I have not dewormed it. It has mange. And even, I noticed, even these ones have mange.

I1: so how do you know she has mange?

P1: I know she has mange by, she is scratching

I1: so the food from the hotel, you give straight or you boil first, what do you do?

P1: I use toxin binder.

I1: ah you use mycotoxin binder?

P1: I do yeah. I make them overnight then in the morning I give.

I1: so the food comes from the hotel, to you. And then what do you do before you give?

P1: I spread it on a sheet, then I put this bran. Then in the bran there is toxin binder. Then I put overnight, then I give.

I1: ok so you don't cook it first?

P1: I do not cook it, because cooking again, firewood is a problem. You know you want to be as economical as possible. Because very many people have given up the job. Pig farming. Very many people. In fact there were people here yesterday, they were telling me that I am the only serious small-scale farmer around. They were telling me they are giving up. Because of the feeds. Then water, this is where I put water, there is whey. You know whey? From cheese. Yeah I get them from [factory name]. Natural cheese. Then they give me that whey. And they love the whey. So I mix it with my water.

I1: Who else do you have?

P1: the rest. I will show you. These are boars. These are my boys I have not castrated them.

I1: so you keep them for breeding?

P1: some people may need them

I1: for breeding?

P1: yeah for breeding. They have some, I have not given them some injections for worm. Because they eat a lot of hotel waste, they need to be wormed often. I have not been able to do it, but I will do it. This one always fights with the rest. This is another Road of about 5, 3 are castrated, 2 are castrated. I just keep them. I thought they were a good breed. I always keep some uncastrated. So if some people want some boars I give to them.

I1: so you sell boars for breeding, and also to the abattoir.

P1: the first one is already bought, the black one, the hampshire. Someone has already bought, somebody is coming to collect tomorrow. Now this one this is where I keep my wastes. The urine comes here in a soak pit. I have done a soak pit. Because I do not want my neighbours to complain.

I1: so what do you do with that after?

P1: that one it's sinks. The manure, it's here. In the shamba.

I1: you spread on the shamba?

P1: yeah. These are the ones I want to sell.

I1: who will you sell these to?

P1: [Large integrated processor]. [Vet's name] helps me to take them to [Large integrated processor]. They are about 12.

I1: and when will they be ready soon?

P1: it's a bit difficult to predict because of the quality of the feeds. Before we could predict because we could get our feeds from [large integrated processor] and you know it's quality feed. So you just give and when they are ready you take. You are not able to predict.

I1: so now you just don't know when you will send?

P1: I am hoping by the end of November.

I1: you said you could get [large integrated processor] food, you can't get [large integrated processor] food now?

P1: they are limiting. Because also, you could take as many bags as you want, but now they are limiting. And again they are expensive.

I1: so you get some from [large integrated processor]? Some food from other places?

P1: actually I don't get food from [large integrated processor] now. I get from other places. In the afternoon I am going to get some.

I1: so they get some hotel waste and some normal food?

P1: yeah and cheese, like tomorrow I am going for cheese. I get locally what I get. If there are vegetables, I bring them here. If there are hotel waste, I bring them here. If there are seeds from the shop, if I have money, I bring. So I do them locally.

I1: just whatever you can.

P1: yeah.

I1: and any more you have any more?

P1: no. I have about 40.

I1: 40 total

P1: yeah 40

I1: do you sell just to [large integrated processor], or ever to [LIA]

P1: I sell to [LIA] and [other LIA].

I1: that's the new one.

P1: the new one at Kabuku. You sell everywhere.

I1: wherever you can

P1: yeah wherever you can.

I1: so what is better [other LIA] or [LIA]?

P1: [large integrated processor] is good. But the only challenge in [large integrated processor] they have the limit. They cannot take below 50 kilos. The least you can take is from 56 carcass weight. Anything below that, you are going to make a lot of loss.

I1: so why do you have pigs below 56?

P1: first because of feeds. The determining factor is feeds. Because once you have good feeds, and again, you see these ones I have not dewormed them. It is eating the foods I am giving them. So you see growth is low. Then cold. Sometimes you make shelters as the pigs don't like either cold or very hot weather. So I have seen that. Again disease is a factor. I sometimes there are diseases like pneumonia. Once they have pneumonia, you lose some. And they stay without gaining weight.

I1: so you find you have to sell them because they just stop growing?

P1: Yeah. Yeah sometimes you have to sell them because even if you feed them there is a state they cannot

I1: do anymore. So then you have to sell to either [LIA]

P4: [LIA] or [other LIA]

I1: and you get less money if you go to them?

P1: you get less money because they are brokers.

I1: what do the brokers do?

P1: because you don't get to sell to the customer, the butchers. The broker must come in between.

I1: why must the broker come in between?

P1: because they are the ones who, because if you go there, you slaughter your own pig, no one is buying for you. No one buys for you. Then they have the orders. We have none. So brokers must

come. They buy from us 250, they sell at 350. Then the ones at the butcher they sell at 600. So the farmer is always down.

I1: when you have raised them. And is there anything anyone can do to change that? Could small-scale farmers group together?

P1: yeah that one could be very good. Because [large integrated processor] is our only hope but they determine our prices. Currently they are at 280. But you find when you go to buy that kilo of meat from [large integrated processor], you get over 900 per kilo. So farmers are ready demotivated to do that work

I1: and then they are stopping.

P1: they are stopping. Because currently I don't have a farm hand I do it personally. Because you cannot be able to pay a farm hand. Because you don't know when you are going to sell. And you might disappoint the one who is helping you.

I1: and how important are the pigs for you in terms of money?

P1: well when the feeds were good pigs were very good for me. Yeah because per year I could sell like 500000. And you see 500,000 it's like 50,000 or 45,000 per month. That is good for me. I can use 30,000 for feeds, I have 15. For myself.

I1: and you have the poo for the shamba

P1: yeah Yeah

I1: you've told me some things but what else do you do to keep them healthy?

P1: I have always learnt to do the deworming myself. I do the booster for myself. And once the fruits, the season for avocados, I get them and I give them. When the mangoes come I give them.

I1: it's funny because at home you pay 300 for one avocado and here you give them to the pigs.

P1: at the season, there is a plant who export. Those are degraded. So I always go. A box I get and I give.

I1: could you show me your feed.

P1: the feeds I use? Ok. This is the bran.

I1: and where do you get bran from? The market?

P1: yeah the market

I1: and you gave bran to all or just the sows?

P1: I mix them with the hotel waste. These are macadamias.

I1: goodness me

P1: these are macadamias. So I mix anything I get. So the food waste, the hotel waste I have finished. You mix there, you mix with those ones. This is toxin binder.

I1: does it have a label?

P1: no. He puts it in a different bag. I usually buy from the suppliers. It is usually packed. Like a kg.

I1: does it have a label?

P1: No. that guy gets them from China. From China then he nini.

I1: so all the pigs, they have one food? They all have the same?

P1: yeah, they have the same. But they are not supposed to be that one. So I give the sow and weaner.

I1: lots of people do that

P1: lots of people do that. Because the starters, that is where there is no money to do it.

I1: because that would mean many bags.

P4: yeah there will be many bags.

I1: thank you so much. Do you have medicine here? I forgot to ask what you have

P1: yes. Let me give you.

I1: so you have, this is your vitamin.

P1: sometimes this one or this one (both vitamins)

I1: how do you choose which to use?

P1: whatever is in the market is what I buy.

I1: this is your iron? So you give this at what age?

P1: that day then after three weeks. 21 days. When they have pneumonia I do this.

I1: which get pneumonia?

P1: when they are sick.

I1: but the piglets get pneumonia?

P1: no I don't give the piglets.

I1: big pigs get pneumonia?

P1: yeah.

I1: how do you know they have pneumonia?

P1: they are shaking. There was one which was urinating blood. That's one I bought kombitran. I gave it

I1: you injected?

P1: [large integrated processor] taught me

I1: [large integrated processor] taught you?

P1: yeah they did. It was a seminar

I1: ok so with the vet? You go and learn?

I3: sometimes they have seminars for farmers, and farmers are taught to do stuff. Simple procedures in the farm.

I1: so this one (TMPS), you can just go to the agroveter and ask them?

P1: yeah

I1: and they gave?

P1: they give me

**Visit 2:**

P1: My week has been fine. We struggled, I was going to get some feeds. I couldn't get because of this dry season. I am planning to go today to look for feeds. Because I always plan ahead. Because you don't wake up and you are looking for what to give them. So I am still going. Tomorrow I am going to get the whey. Because I am almost finishing it. One was very sick. I gave it kombitrim. And I have not. I indicated in the chart you gave me.

I1: What happened? How did you know he was sick?

P1: He was bitten by the others on the ear. You see it. You will see it. Let me show you. This one, very sick the ear.

So I injected it with kombitrim. 3mls. I talked to the vet and the vet told me what to give.

I have not given them the second jab because they are for two weeks. These ones, they hide from visitors. The other one with the bad leg got healed. I didn't do anything. It just. You know there was one limping the other time you were here. So it's ok.

I1: So you didn't inject with anything and it healed.

P1: I didn't inject because I fear injecting these small ones because I don't want to introduce them early to medicine. I just let them grow. But they are good. This a very good mother. I don't know what is happening here.

C1: Little teeth marks?

P1: Eh! Ok! Thank you!

I1: So tell me Grace. So you said you noticed the ear and you called your vet?

P1: Yeah

I1: And what did they say?

P1: He asked me whether I have an antibiotic. I told him the antibiotic I have. It was kombitrim. So he told me to give it 3mls. And I injected. That was on Saturday. And I can see the improvement. Slowly.

I1: So you injected into that ear?

P1: Intramuscular

I1: Ah so not into the ear. Great. Ok I understand.

P1: That is only what I have used. Next week I am planning to inject them worms. I am planning to deworm them. And I am planning to boost them to give them vitamins so that they are ready to go to the market.

This one here my husband was asking 'what is this?' I had to explain.

I1: What did he say?

P1: Eh my friend is visiting. She will be visiting for the next 3 weeks and after that we are done.

So I indicated kombitrim 3mls, one pig.

I2: Do you want us to indicate inside?

P4: Ah i was supposed to indicate inside?

I2: Inside yeah

P1: Oh I'm sorry.

I1: Don't be silly, you indicated and that's all that matters. You know what, it's fantastic. Because that means that I haven't properly explained it.

P1: The date on Saturday was...

I1: 22nd.

P1: Asante. (Filling in chart) It was 22nd. Kombitrim. Inflammation of the ear. By the farmer. Four month old. Improving. It is improving.

I1: So what are you feeding now?

P1: I still have some here. The breadcrumbs plus the onga. I mix with whey.

Onga is flour, pollard, sunflower, methionine, i put everything here. I do my own formulation. There is lysine here, there is everything.

I1: You buy lysine from the market?

P1: From the neighbouring country Uganda. Now in Kenya we have nothing. Because of the population and this drought.

I1: Did you sell your boar?

P1: I sold it at 20,000. That was good. Somebody wanted it for breeding. So this are also boars, I am going to rear them like two months. I will give some people.

I1: And did you send anything to slaughter?

P1: No. I will be having those one. These ones by the end of November I am selling them to the market. They are very annoyed with me I have not cleaned for them. I don't give them food before I have cleaned for them. I have to clean for them then I give them food. They poo here and then they lay here. I read somewhere in a journal, they are cleverer than a 3 year old baby. I read it. Because if you slap it and you say 'don't go there', tomorrow it will not go there. Or when it sees you are coming and it is doing wrong, it retreats immediately. That is very clever. I leave here open. I go hide there, when they see me they go back.

Before i take them to the market I have to deworm them. Because of the leftover I am giving them and the kitchen waste and the farm waste. So i am planning next week, by the time you will be coming i will have dewormed them and i will give them vitamins. When i go into town i buy the medicines.

I1: If one dies, what do you do?

P1: I dispose, I just dig a pit, then I bury it. Within no time it composes. Yeah because this ones because the bones are not very strong.

**Visit 3:**

P1: Had to give them injections of iron, I had to give them injections of vitamin. I indicated yeah. I did that yesterday.

**Visit 4:**

Electricity was out and P1 was covered in pig food so we didn't go in this time. Not sure on news.

**Visit 5:**

P4: They are eating leftovers of sausages, you know [place name], have you even been to [place name]?

I1: I drive past it, what is it?

I1: It is a [place description] there so they give me their leftovers. Like their cakes, so they are eating a lot of cakes. They are eating a lot of chicken, so they are enjoying.

You see they are growing, so they are taking advantage of the mother. So my husband told me we are going to block them out. They only come in the evening to sleep here and suckle a bit.

I1: Do you see her udder? This side is still ok

P1: This is why I want to give her some medicine. It has some mange. So this one controls worm and mange. Am i supposed to record this if i give this?

I1: So because today is the last day, you can now do whatever you like. So if you want to write you can write

P1: Yeah i will write.

I1: You will write?

P1: Yeah let me write. Yeah because I am doing it today.

I1: Well can i take this one. And I will leave you some more sheets and then you can write. Is that ok?

P1: You are leaving me this?

I1: Of course

P1: Thank you thank you.

I1: Have you used any medicines this week?

P1: No I didn't use any medicines this week because they are not sick.

I1: or actually the week before because I didn't properly see you last week

P1: yeah you didn't. I have not used anything. You can see they are eating the leftovers and they have grown big

I1: the leftovers are nice because they have something to play with

P2: yeah they are playing

I1: how has it been to get food at the moment?

P1: we are straining.

I1: so in this bag I have lots of empty medicines. And I need you to sort through them for me and tell me which you recognise, which you have used, so that I can understand. Let's put the ones that you recognise over here and the ones that you don't recognise over here.

P1: I have done it for 12 years so I know a lot of medicines. You will be surprised, I know so many. And I also reared chicken. So some of these ones I used on chickens, these ones. this company I use it so much. I do use it a lot of it.

This one I love it, I love this one.

I1: you do? You love the limoxin? Why do you love it?

P4:1 this one, everything which has Holland,

I1: is good?

P1: yeah they help me so much.

I1: why specifically the ones that have Holland?

P1: because I know that they are original. They are not generic. They work fast on anything. When I try to use it they work fast on my animals. Whether pigs or chicks, they respond very well. Because others you don't trust them.

I1: you can now put all those in there for me. And we are just going to work with these ones. I want you to sort this pile into the ones that you have used on the pigs, and the ones that you have not used on the pigs.

P1: this one I have used, this one was mine. This one I have used. This one I have used on chickens, on chickens I leave it?

I1: yes just pigs. And now I want you to sort this pile into the ones that you have used frequently, and the ones that you have not used frequently.

P1: My all-times. Skazole to control diarrhoea. Yeah I took. And this one it has some electrolytes, I use it alot.

I1: 27 you use a lot.

P1: Penistrep. I think those ones are the ones I have used frequently.

I1: And now finally let's put these back together and i want you to tell me the ones you have used this month and not this month.

P1: This month i have only used kombitrim and skazole for, before you came i used this one because of diarrhoea for the small ones. Yeah before you came.

Only those that i have used yeah.

I1: So this one you use for piglet diarrhoea? And this one (kombitrim) you use for?

P1: For inflammation of the ear for my pig. You remember?

I1: I remember. And what else do you use it for? And what else do you use it for?

P1: I use it when they have penumonia. Yeah when i detect pneumonia, i use it. There was a time my boar was urinating blood, it had UTI, I also use it. And it acted very effectively. I thought i was losing it.

I1: And frequently you said this one too (limoxin), what do you use this one for?

P1: This ones when the piglets are, when they are born and they are diarrhoeaing, i add water to the water. Yeah they become strong.

I1: And where do you get that? Actually for all these do you get the vet to give or do you give?

P1: No i give. I do it personally

I1: So you can buy this yourself?

P1: Yeah i buy them myself.

I1: And do you speak to dacteri, or do you buy?

P1: I first of all talk with my vet. I tell my vet, I have discovered this one in my pig. And he know I know how to administer the drug. So he advises me. And most of the time i actually don't [call the vet] because we've done it over the years, now i am confident i can do it. I used to do it, before i used to consult but now i can tell the signs of pneumonia, i can tell when it is urinating blood, I can tell now. So i do it personally, even without consulting somebody. When i go to the vet shop, i know what i want. I want skazole, i want kombitrim. I want and they give me.

I1: And that is because of what you vet has used previously.

P1: Yeah because of that. Every time the vet came i was very alert. I could see and i could ask questions. Why are you giving this? How many ml are you using? Are you going to give it tomorrow? And he used to educate me on that one. And i new it worked. And we go to seminars on [large integrated processor] and they enlighten us.

I1: And so [large integrated processor] are happy for farmers to give medicines themselves?

P1: They have no control because they do not have their own Dacteris that come to us. That's the problem.

I1: So when you say they have no control, what do you mean?

P1: I mean, they only want meat. They do not have like extension officers who come to the ground. And what makes us use this is because of money. You have the money for the medicine but you do not have money for the vet. So you buy the medicine and you save your pigs. Because when you call the, supposing i call the vet to come and give a dose of kombitrim. 5mls. He is going to charge me 600. And 600 i go to a vet shop, I buy Kombitrim and i am ready to give over 20 [pigs]. So i say.

I1: And when you call the vet for advice, when you consult the vet to say i have this sick pig, what should i do? Do they charge you for the phonecall?

P1: No, it depends on how you relate. Because over the time, because there are things that i cannot do myself like castration, I have to call them. There is a vet who will still visit. And when I do not know what is happening i call the vet.

I1: Ok so they will get their money because at some point you will call.

P1: Yeah. At some point they have to come. And when you have money like when you have sold your pig you call them for a routine checkup.

I1: Oh you do.

P1: Yeah they come they advise you. They tell you on the feeding.

I1: And when you said [large integrated processor] do training, do they come here?

P1: Once you go to their farm and you, before you sell to them their pigs they have to come and see whether they maintain the kilos. Then if they see there are things that you are not doing that you are supposed to do then, they will advise you like on your feeding. They tell you. The shelter. They helped me to put up the structure. They come. But rarely, because they are very few. And the pig farmers are very many.

I1: And that's a vet that comes is it?

P1: The other vet who comes who comes for training, that one we contract.

I1: Ok. Let's say you are just about to send these pigs, and some get sick, what do you do?

P1: Like I am going to give, currently, right now I am going to give ivermectin. I am not supposed to sell them before 21 days. I have to make sure they do not go before 21 days. You read on the instructions. The others, if you have given such nini you are not supposed to sell it. So when, if i am going to sell and one gets sick, i have to isolate it, give it medication and then wait for a period of time. If it gets better, it is ok, if it doesn't, yeah. Some die. Yeah some die.

I1: So if two get sick, you have isolated, you have given a medicine, they can't go then with the batch right? To [large integrated processor]. So what do you do? When do you send them and where do you send them?

P1: We have individual butchers, because locally we, because once the pigs get to [large integrated processor] and they slaughter them, the meat is very expensive. So what the locals have done is they have opened their own butcheries. So they are always coming to buy but they buy at a very lower price. So we had, personally i don't like selling to them because they make a lot of profit. Something which could have gone for 20 thousand, they buy at 15. So you lose a lot of money. And don't forget, there was a time i had swine flu here.

I1: Did you

P1: I am not kidding you. It was not that one. I gave kombitrim and they got better. I gave kombitrim. I consulted a vet. A vet told me to give 5mls and it got better. I lost 3. The rest got, Ah but it took some time, I stayed for 2 months me without selling them. Because they had to go back. They didn't grow very well.

I1: Ok and so have you ever had a time where you have given a medicine and you have needed to send to slaughter within the time, you said 21 days right?

P1: Yeah there is a case I remember I had this case. When I gave some hotel food they had food poisoning and I didn't really know it was food poisoning so I gave kombitrim to treat the food poisoning. It died. I never sold it. So you don't sell. And they were telling me, the butchers, I wish you never administered any medicine because you could have slaughtered it.

I1: right so they wouldn't buy, because it had the medicine?

P1: yes because once you slaughter, it will show. I know, the meat will show.

I1: how will it show?

P1: the vet knows. They will tell you. " you have given medicine yesterday, or before 3 days." they will tell you. I have gone to their slaughterhouse and I have seen the vet saying this meat cannot be consumed, the reason? They had administered some antibiotics before 3 days.

I1: and which slaughterhouse was this?

P1: [other LIA]

I1: ok [LIA] would be the same?

P1: [LIA] would be, any vet will see. Because the indication. I am telling you, I can look at the meat and I will tell you this is good for human consumption. Because I have always been going there and I am training myself.

I1: Oh so when you go to [other LIA], you see

P1: Yeah i put on a white, I get in. I talk to the vet. "What do you look for a pig to say it is good?" The liver, they tell me a bit.

I1: Ok do you think many people would send a pig that had been treated with an antibiotic to slaughter?

P1: Yeah they will. Because of ignorance. Many people do not know the information i am telling you. I have known it because I have done it for ten years. For the people who are doing it, through either, if you'd come here 2015 I would be very naive. But now, over the time I have known what is right. I have done a lot of research personally. And now I know.

I1: So who taught you about withdrawal periods?

P1: i read it. The vet mentioned it to me and because the vet knew I was treating my pigs, he had to educate me. And he told me there are some, i remember once you administer, read the instructions.

I1: Can you show me? Where does it say?

P1: Withdrawal times for meat.

I1: So you read. You are very knowledgeable.

P1: I read, i don't take it for granted.

I1: And do they always sell this sheet with the medicine?

P1: Yeah it is usually there packed. And that is why i like, i like some companies, because local companies sometimes will not do this. But international, outside companies they will.

I1: Thank you. How did you find the study, was it ok?

P1: It was very nice. I was telling people about you because they could see your vehicle coming. First of all they thought it's corona. I told... no, no, no, no. She is doing her research.

I1: I am so sorry for all this. It's because I don't want to bring African Swine Fever.

P1: No i have made them understand that you mean well and it is for our good.

## **Farm 9**

### **Visit 1:**

I1: can you show me the pigs, can you tell me all about them.

And tell me about you two, what do you do.

P1: we normally work as a team but we sometimes, we have a specific work. For example me I deal with shamba and sometimes the pigs on holidays and off and when someone is not around.

I1: what pigs do you have, what do you do for the pigs.

P1: we feed them, especially me I normally feed them and clean.

I1: ok.

P1: but with medicine, it is the responsibility of....

I1: can I see what pigs you have?

P1: it's ok

I1: how many pigs do you have do you know?

P1: we sold some the other day. And I have not been here.

I2: 12 [but 15 as 3 were out the back in a 'hospital room']

I1: so who are these do you know? Are they for breeding or for?

P1: we normally bring the male one to impregnate this one.

I1: and these are all girls to keep for breeding? What do you have?

P2: here we have these pigs, this is a project that started in December 2018 with just one Pig. And there was a time even when we had up to 80.

I1: 80 pigs in here?

P2:Yes. So we have been working here with the, this project was mainly an idea from [P3]. Now when he is not here, maybe when he is on year leave, we assist him. So we have learnt how to. Because the main thing is cleanliness and the feeding. Then if you maintain the cleanliness and you feed them well, then you are free to do other work.

I1: so what do you feed them?

P2: we feed them [pig feed brand], pig feed called [pig feed brand].

I1: just pig feed or anything else?

P2: There is some other leftovers from the kitchen. Sometimes we also feed them with some of the green vegetables. Also it is not just pollen. There is the mixture of [pig feed brand], maize jam, bran and fishmeal.

I1: can you show me? So you have the normal sow and weaner?

P1: you know this one, this one is another feed that he just changed the other day. we used to buy bran and [pig feed brand] and maize jam. Then we come, we mix here. But now this one is already mixed.

I1: when did you start it last week?

P2: about a month

I1: so how do you find it?

P2: According with how we have been observing

P1: normally when you are feeding you see how the pigs are enjoying it. So you see it is not taking them. Because you can bring some feed, that maybe it has bad smell. You can smell this one.

I1: good or bad?

P1: that is good.

I1: so they like this one?

P1: and also the improvement of the body. You see that there are some changes/

I1: good changes?

P1: good changes yeah. This is good.

I1: so now you don't need the bran and the fish meal?

P1: now this is mixed everything.

I1: and then you have the food waste?

P1: from the kitchen

P2: because you can see sow and weaner enriched with vitamins and minerals. So it is a combination

I1: and when you get the food from the home do you do anything to it? Or you just give straight to the pigs?

P1: we take this and we mixed with that one, so we give them

I1: about half and half?

P1: you can see in each shed of the pigs, when they were many, because I think we have sold about 12. And we have slaughtered 16. And we have slaughtered two last week on Thursday on Friday. So you see this shed, because this was not meant to be a bigger program, it was just meant to sustain the children. This is a children's home. But they got increased very quickly. So we started the

Business of eliminating some and selling. Then we keep what we use here. So in each, there was a time you could come and find in one shed, there are even six. So six, you do your calculation. How much would they take, the six of them.

I1: and how much do they take? How much were you feeding?

P1: now six you can give them even two buckets

I1: so what do you think 10 kilos?

P1: around 10 kilos or 15

I1: a day?

P1: yeah Yeah

I1: that's good they are eating well.

P1: then you find, they like the peelings of the kitchen. So we collect them. When there are many we come and we also add that one. And we also give them the Green. Because you can see we have a lot of kale and spinach. So there is a time that is too much. That it is over contained here. So then we just give them and then they are healthy.

I1: so when you give from the kitchen do you boil? or you just give

P1: ok we used to boil. I told you we started with one. To give birth to 12. All the 12 who were females, they gave birth. So at that time we were boiling. Then they overpowered us so we could not boil.

I1: just too many pigs

P1: yeah

I1: so now you don't boil?

P2: so now we don't boil. Maybe we start because now there are a few.

P1: yeah now we can get back to the program of that one. Because you can see, like I have told you, I think there is a plan of minimising them so that we can have at every cage one. Because we know that soon they will be big and they will give birth again. So let's say by next year, by March April, we may have the same number again.

I1: ok so you keep going round. When you slaughter them to eat, where do you slaughter them?

P1: there is a slaughterhouse, just you have passed [place]. There is a private owned slaughterhouse there.

I1: the new one so not [LIA]?

P1: no there is another one. We take them there, because of the issues with the doctor and everything. Veterinary will have to, because you see, you cannot risk the children of course.

P2: Now we have to follow a process of going to the slaughterhouse. The vet will confirm whether the meat is okay for human consumption and then we bring.

I1: ok so the vet comes here?

P1: no.

I1: the vet at the slaughterhouse?

P1: the vet at the slaughterhouse

I1: check that they are ok

P1: that the meat is okay for humans.

P2: There are other farmers who are taking so we just joined them. We just pay the charges of the slaughterhouse, plus the doctor charges I think. I think they are included. Then we have to transport them there when they are alive. To the slaughterhouse but when they are coming they are meat. So we just cut them in small pieces and then we keep them in the deep freezer.

I1: so you don't have to use a broker?

P1: no we don't

I1: and that's because you are buying it back for yourself

P1: yeah.

I1: or is that different with this abattoir? Do most people use a broker?

P1: us we go direct. We have a clear contact with the slaughterhouse. So we just take them pay the charges of the slaughterhouse and everything is done. That is what we do

I1: and do you ever send to [LIA]?

P1: you know this one was opened just the other day. Before we were taking to [LIA]. Yeah but from here to [LIA] is very far. Now we've got here it is easier, you just take them there, they get slaughtered, you come back easy.

I1: so the pigs are slaughtered last week, do you know what weight they were?

P2: I think they were around 50 or 40

P1: it was 49 48.

I1: Carcass weight? Dead?

P1: Yeah. Without the inner parts and without the head.

I1: do you want heavier or is that good?

P1: the main issue with us here is when you wait for it to be too big, then it will have a lot of fat. So that number, we like that number. Though we do make them big for the buyers. So we can for example say the ones that are here are for selling. So this one you will not pick them.

I1: I understand. So you said how you keep it clean and you feed them well. Do you do anything else to stop them from getting sick?

P1: initially, i think P3 is here.

<Went to meds>

I1: and who have you got in here? Who are these three? What do you use this for?

P1: This one is worms. This one is for dewormer

I1: So supermec is for dewormer. And when do you give this, do you know?

P1: yeah we bought it in the agrovet. But it is me who not goes to buy it so. This one we think it is for antibiotics. Yeah.

I1: And what is this one?

P1: This one is also antibiotic further?

P2: This is the injection.

P1: Antibiotics?

P2: I think all these are meant for worms and when it has some bacteria.

I1: So do you know what would be wrong with the pig to use these two?

P1: No the person who always deals with this, but he is not around. Maybe next time you ask him.

I1: Any others?

P2: We don't have others.

I1: Thank you so much. Are these sick or are they ok?

P2: These ones, you can see the ears.

I1: Yeah that's what I saw. Were they sick or?

P2: It is an infection.

I1: But they are healed now.

P2: Yeah they are about healed now.

I1: That's good. Ah and you have some more here can i see?

P1: This is for the wound. When we do castration.

I1: Ah you castrate. You castrate yourself?

P1: P3 is an <farmer descriptors>. So he has been a farmer for the pigs before he was employed here. So he knows about the pigs.

I1: That's good.

P1: Most of the time he do it, he injects himself. And then also to castrate.

I1: So that's oxytet. And then you have some more.

P1: This one is for worms.

I1: Some more ivermectin. And this one is multivitamin.

## **Visit 2:**

P3: We have so many challenges. Like now there is drought. Everything has gone up. Whatever they are making is very low. No nutrients. So you are just putting soil on the pigs and they don't even grow. That is one of the main challenges we are facing.

I1: How is that affecting you?

P3: I told you we are not on that business, but we are eating a lot of the profit. So even now we are deciding to eliminate almost, and left with two or three for our consumption. Because the pigs are too expensive. Nothing in the feeds, no nutrients.

I1: The boys told me you have started a new feed.

P3: yes the previous one is alot of bran. Then this one you can see, you know what they are doing, they are taking the this final nini, products of things, like bran and whatever. Taking it into the machine again then trying to bring [pig feed brand]. There is no pollard here. The maize jam you can see, there is a little bit of bran.

I1: A shell

P3: This is from the sea for adding protein

I1: Fish meal

P3: Yeah fish meal. But it is the poorest quality. All of these products are not being sold in kenya. This is what we are having. Our government has failed us in so many ways. Because we should be having, now farmers, they are sucking from the farmers every now and again and the farmer does not get what he is supposed to get. So this, I think this is, there is the fibre from rice. When you take out rice there is that whatever, remains. This is what they are now grinding and whatever. And it has nothing to add to the pigs and whatever. Then they sell you 2700 per bag. And this is very expensive. Even if you see, that is dust, there in now [pig feed brand] here.

I1: It feels like sand doesn't it.

P3: I think you can get the poo poo and look at it. How the digestion and whatever of the pigs. There is nothing. Black substance or whatever, i don't know what that means.

I1: In the poo

P3: Eh in the poo.

I1: That's sand

P3: It's like sand yes. The poo you take it and put it in water, that is what you get. But that is business in Kenya.

I1: Is there anything in the bucket?

P3: This one I have not put anything. But, here, I have written.

I1: So tell me, what have we got here.

P3: This is what we applied. This is kombitrim. It is an antibiotic because of gastrointestinal tract. Because of this food and whatever. You know I told you, you see the poo is a bit sloppy. So for it to be a little bit solid you have to use antibiotic and whatever. Yes and it works. You see the poo has changed. But you don't have to give it all the time, it is when you change the feeding.

I1: So because this was new.

P3: Yes

I1: So you injected

P3: Yeah. 1ml/30kg bodyweight.

I1: So that was all the pigs?

P3: Yes. Because we are adopting the other feeding and whatever we have to do that. The other one was for deworming. I injected.

I1: And that you do every few months?

P3: 3 months. Then this one is, almost doesn't have that big problem because I inject 2ml per pig of this size.

Then we had the boosterlife for multivitamin boost.

I1: And you do that the same, every few months?

P3: Booster you can inject and it doesn't have problem. Because it is for adding vitamins. This is per the water when you want.

I1: Ok so how do you decide?

P3: Me i normally inject when i am injecting the others. Then in this other one, the doctor [vet] was here we.

[Written on the back of the sign rather than in the clipboard]

I1: What did [vet] come for?

P3: Vaccination.

I1: Oh the foot and mouth.

P3: You know this time we have these cows from, you know Massais. They are pastoralists. Now since they don't have whatever in their, they have just started moving all over. Now we have noticed. But not us. Neighbours. Foot and mouth. So this one has to be done to all animals. So she came and I also remembered her to do it for me.

I1: This chart is good, however is best.

P3: We have some unwanted visitors. These are the poo from the rats.

There is another company who are introducing their feeds to farmers.

I1: So this is from the kitchen?

P3: Yeah the leftovers yes. This was for breakfast.

There was a meeting, there is a new company which is introducing feeds to the customers.

[Talking about a new feed company that is reducing cost and boosting productivity. They are doing a trial with a cow farm in the area. Using raw materials from Europe. They don't sell through a broker, seling straight to farmers instead.]

P3: Kenyan farmers, all of them are crying now. The feed has gone up and up and there is nothing in the feed. You are just doing your farming for the manufacturers of the feed. I can call then, they are like brokers. So the person that experiences the pain is the farmer. So with them they just take the money and then they go.

P3: But the quality of feed we are having is very poor. Normally a mature pig we feed it 3kg per day. That is enough. Because there is somebody who told me if you give it a lot of food it will just... But that is quality food.

[Talking about how pigs are low maintenance as you can 'just feed and go wherever you are going'.

Talking about pig diseases, saying that they are very rare unless there is an outbreak. They also get constipation.]

P3: When there is that African Swine Fever we normally apply sodium bicarbonate. Yes to clean and all this. Magadi.

I1: If a pig dies, what do you do with it?

P3: You have to dig the hole. Then you bury. We have a very big forest. Which is not common.

I1: What is not common?

P3: To have a dead pig. It is not common.

I1: Do you ever slaughter here?

P3: No, we take it to the slaughterhouse, then it is being slaughtered. A muzungu wouldn't want, because of the children.

I1: Talking about magadi salts.

P3: When there is that whatever, the poo being dry. You can just have a teaspoon, you put it in a bottle, then you distill, then you feed it with a bottle. Veterinary, it is also very costly. Now what made me learn how to inject. You know when the newborns are born, you have to apply iron. And to every pig they will have like 30 or 40. Which is almost 200. I just go and buy iron, I come, it is only 2ml per piglet. But when you call a doctor you are parting with almost 10,000. Which is too expensive. Say you are a commercial farmer, then it means most of your money is going to you people Dacteri. So you are the farmer, you are left with nothing.

I1: So when you go to the Agroveter to buy drugs, do they say... for example the kombritrin. Do they say 'oh this should be from the vet?' or you are fine just to buy.

P3: No you are free to buy. They are in business. Otherwise i am not an expert on that, but they sell. They just sell and there is no restrictions on anything. Even if you are not the owner for animals, even for own consumption. Even antibiotics. They sell them freely in the shops.

I1: For people.

P3: Yeah they never ask you, oh see this you are not supposed to do this. This should be done by an expert or anything like, or prescribed by an expert or anything.

I1: And because of the cost of a vet, you couldn't call the vet anyway.

P3: Yeah because of that cost you are try to, because that one you buy at 500 shillings. And 100ml can go for 50 piglets. With a vet, with the 50 piglets, you use 50 x 200. Which is 10,000.

I1: So it's 200 shillings per injection

P3: Yeah so that one is too expensive. So with a vet, I normally say I call them when it is necessary. For the diseases i cannot treat. But boosting them with immunity and vitamins and deworming, that one, that one I can do for myself. But if there is another complication, I will just call a vet. I don't have that knowledge.

[Explained why a cooperative wouldn't work of buying feed in bulk together because everyone gets paid in different ways at different times.]

**Visit 3:**

No meds given, nothing in bucket or on chart.

**Visit 4:**

No meds given, nothing in bucket or on chart.

**Visit 5:**

Nothing more in the bucket or chart than before.

P3: I never knew your intentions so i wrote on both. So it said write here and write here. So i wrote on both.

I1: It's not clear is it. Oh the ears are red.

P3: But they are normally that way. When it has a problem, it is all over the body. That is when you have the swine fever. It normally, these are the signs. It is normally pinkish when it has the nini. [...] That is the one that normally kills pigs. Pigs it is very hard for them to die, but...

I1: Swine fever will do it. The final thing I would like your help with is my bag of drugs. In this bag I have got lots of empty boxes of drugs and I have brought them with me because I want to know which ones you have used, which ones you have you seen before, which ones you have not. So I have just bought them along for research. I have never used them. What I want you to do for me first is to sort them into the ones that you recognise so the ones you have seen before over here and the ones which you don't recognise over here.

P3: what about if the company is different but I have used it from a different...

I1: that's okay, so tell me your thoughts on each one and we can decide together where to put it.

P3: this one is for deworming. [But later took this out of the recognise pile]

Penistrep i have used.

This one is, it is not the same? [Talking about another penstrep]

I1: You tell me

P3: No this is the same.

I1: I have bought all that i can, even if they are the same drug but slightly different packaging.

P3: This is from a different company, this twiga company. So this one are the same, but different companies.

I1: So you recognise?

P3: Yes i recognise.

This one no, limoxin. It is for what?

I1: I am not sure. I have just bought everything that i can find but i don't really know what they do

P3: This is also an antibiotic i think. If i am not wrong.

Vetoxyl. This one no. But it also seems to be an antibiotic. This i would want to know because i can see some pigs there [on the packaging]. They have not written anything, no nini. Oh it is an antibiotic. See treatment and prophylaxis of respiratory. This one is just like the ones i am using there. It is also for nini. This is also an antibiotic. The ones i was telling you to change the poo and whatever.

I1: Ok

P3: This one oxy-met. Dosage and administration. This also are the same, but i have never used them.

This one no? What is this for? It is also, they are all antibiotics.

This is doxicin, i think i have seen it. I have seen it but i have not used it.

I1: Ok well pop it over here.

P3: Even this one I have never used. This one is good for the urine and all this. It is also an antibiotic. I think most of them are antibiotics. This one no.

It's an antibiotic, i have not used it.

This one is not like the, they are the same company.

Even this one i have not used it.

Even this one.

Even this one.

This one i think is for deworming.

This one no.

Even this one i think is for deworming, if i am not wrong.

Even this one is strange also.

These are strange.

I can see they are almost the same purpose as this. They are all for, you have deworming and the other one antibiotics.

No I have never seen it.

These are for those with chickens i think. I also think it is an antibiotic. I have not yet used it.

Even this one, nope.

This one is talking about bacteria and all this.

Even this one no.

This penistrep i think, yes. It is powder?

I1: It is liquid but i have emptied it. This one is harder to see. Can you see it says quinitas and enrofloxacin.

P3: You don't have vitamins and all this?

I1: You tell me

P3: No there are no vitamins and all, boosters and... So most of them are antibiotics and deworming. But most of the ones you have are for antibiotics.

This one i don't think.

I1: Earlier you recognised this?

P3: No no no no

Even this one no

These are for bacteriosstastic.

This one i have it.

It is also an antibiotic.

Penistrep is also antibiotic but now i don't know i have used which company. But these ones i have used. They are the same but different companies.

Oh these are almost for the same.

Tablets? Tablets mostly i don't use.

I1: This one?

P3: No but also it is an antibiotic.

I1: So the penstrep that you have used, is that one of those or have i not bought the one that you use?

P3: I can't remember the nini but i know i have used it.

I1: Now i would like you to sort these ones that you recognise into the ones that you have used on the pigs, just on the pigs, and the ones that you have not used on the pigs.

P3: I think we can take all these pen-streps. These ones i think we can say i have used but i don't know now which one.

This also i have used.

This one I have not used.

This is like this so i think there were only 3

I1: Now i want you to sort these ones you have used on the pigs into the ones you have used frequently and the ones you have not used frequently.

P3: These ones I don't use frequently.

I told you these ones, all these antibiotics. Normally like these when it has er, it is dehydrating or something you use it but it is very hard. So i use it on purpose. I don't think the most i use regularly you don't have it, is the for deworming. Yes those ones for deworming cause after 3 months i must apply. For vitamins, boosters, also those ones after some time. Or when i am injecting these ones i told you, I must also apply vitamins.

I1: So would you say you use any of these frequently?

P3: No.

I1: Great, so all no. And finally

P3: Unless i notice a problem in a pig, that is when i normally use antibiotics.

And most of them are antibiotics.

I1: So finally i want you to put over here, any that you have used in the last month, and here any that you have not used in the last month.

P3: I think this is the only one I have used. These are the ones no. This one is the only one i have used [kombitrim].

This one I have used it on the poo as i was telling you, because of changing their food and all this. So there was that same thing. That is why i normally apply to change.

I1: Great and you have already told me how you use it.

If you are just about to send pigs to slaughter and they are just about to go to [LIA], and they get sick. What do you do?

P3: First you have to treat it. And you have to check on the medicine the withdrawal period.

I1: Wow

P3: So you slaughter it after seeing when it is supposed to be slaughtered. If you have used medicine, you can't sell. Yes you have to hold until the withdrawal period. Then now you can go ahead.

I1: And can you show me on here where it says the withdrawal period?

P3: Most of me, when i apply most of these chemicals, i normally stay for 28 days. Most of them talk of 28 days the withdrawal period.

So, you know here we have children. So you can even extend the 28 days to a month and plus. To be certain you don't take... Have they written here withdrawal period? Yes withdrawal times. Slaughter 5 days, yeah this one the withdrawal period is 5 days.

I1: But you would wait much longer than that?

P3: Yeah mostly because what i apply with, for deworming it is 28 days.

I1: How do you know about withdrawal periods?

P3: I think that is just a knowledge. Yeah because most of the time you talk with the doctor. You know even injecting these myself, i normally learnt from the doctors. But i know this one. Mostly this one i am not supposed to use but because i, with injection now i have learnt how to inject through experience. But the information you normally get from the doctors. When they have done it, they tell you don't do this after this, don't take milk that is how nini.

I1: Have you even had it that you have had to send a pig to slaughter within the withdrawal period?

P3: No, no. That one i cannot even do. Because i wouldn't. Even if it for business. I wouldn't. Because you are causing harm to another person knowingly. And us, you know we are Christians. You know when you do that, that one is against even our nini.

I1: And do you think other people do it?

P3: Yes. Mostly business people do it. Because all they are interested in is money. If you don't have money and you want money. But those ones, maybe those people. But for us we aren't even here mostly for commercial purposes. So we have no hurry of money.

And for this time i think it is only because there are too many and we want to reduce. But our main interest is not for money. Ours is for the children. So we are not in a hurry of making money or anything. So us we can wait and even longer.

I1: How did you find the study?

P3: It is been very much ok

I1: How did you find the bucket and the chart?

P3: That one also has taught me how to be organised.

I1: So it is useful?

P3: Yes it is useful

I1: Why is it useful?

P3: Now i will be knowing, I never used to know what i have applied and what I have not applied. But now i will be knowing i have applied this. And this. So it will also help me with my records.

### **Farm 10**

I1: Hear what you do here. Piglets, five days old.

P1 through I3 translatioI2: The mum, this is the fifth time. There are 13 piglets.

I1: 13, she is very good. So dacteri has been yesterday?

P1 through I3 translatioI2: Yes. To inject, there is some medication. Supplements given. At three day old. He will come after 21 days to come and given them again.

I1: Do you know what they injected?

P1 through I3 translatioI2: Something to prevent infections.

I1: Maybe iron?

P1 through I3 translatioI2: Not sure. The mum was also injected with antiwormers.

I1: Ah good. And you are happy with the piglets? Piglets are healthy?

P1 through I3 translatioI2: I am very happy.

I1: They are big. And who else do you have here?

P1 through I3 translatioI2: It's with the son and the sister.

I1: And more pigs?

P1 through I3 translatioI2: These are five month old, same mother.

I1: So one litter. 9 piglets all to the same.

P1 through I3 translatioI2: There were 9 when they were born and all of them survived.

I1: So are you happy with these?

P1 through I3 translatioI2: Yes. So they are waiting for them to grow until 7 months and then they take them to [LIA].

I1: And what weight will they be at seven months?

P1 through I3 translatioI2: 60.

I1: And any other pigs or just these? This is it. So you have one sow, you get her pregnant, they have piglets and you keep going round.

P1 through I3 translatioI2: Yeah

I1: And do you always send to [LIA]?

P1 through I3 translatioI2: Yes

I1: At seven months

P1 through I3 translatioI2: Yes. They are mixed.

I1: And castrated? They are.

P1 through I3 translatioI2: At 21 days old they are castrated.

I1: Who castrates, you castrate?

P1 through I3 translatioI2: The same vet

I1: Ah they come back to do it. Are they a vet or AHA?

P1 through I3 translatioI2: A paravet

I1: And so you were showing me their feed. Can we see their feed?

P1 through I3 translatioI2: Sow and weaner. So she gives this ones, and when she is able to access beans she cooks the beans for them.

I1: Where do you get the beans from?

P1 through I3 translatioI2: She gets them from a shopping centre.

I1: Ok and so you bring here and you cook?

P1 through I3 translatioI2: She has something for cooking.

I1: And why do you cook? Do you know why?

P1 through I3 translatioI2: They cannot eat raw beans. These are dry beans.

I1: And this, what is this?

P1 through I3 translation: So for the mother to produce enough milk, this one is mixed in the feed to make the mother produce enough milk for the piglets.

I1: And how much do you mix?

P1 through I3 translation: So she does two spoons of this, she has something for measuring the quantity of the feed and then she puts also this. For every one full bucket she does two tablespoons of this.

I1: So anything from the kitchen?

P1 through I3 translation: Yeah. These vegetables, the kales. She cuts them and gives them as well.

I1: And when you use kitchen food do you cook or just give?

P1 through I3 translation: She has said, whatever remains after they have eaten they give.

I1: They get

P1 through I3 translation: Yeah.

I1: So what do you do to keep the pigs healthy, to stop them getting sick?

P1 through I3 translation: The injections they are giving also helps them keep them healthy. So once they get the injection, rarely do they get sick.

## **Visit 2**

I1: When a pig dies, what do you do with it?

P1 through I2 translation: So they slaughter it and give it to the dog.

I1: Oh when it's sick?

P1 through I2 translation: And when it dies. But she said they rarely die.

I1: So if one is sick you kill it and give it to the dog.

[No medicines used, nothing in bucket or on chart]

## **Visit 3:**

Castration done by vet this week. Of three week old piglets. Only antibiotic they use is spray.

On chart.

## **Visit 5:**

I1: Has anyone had any medicine?

P1 through I2 translation: No

I1: Have you sold any?

P1: Bado

I1: Later?

P1 through I2 translation: Later.

I1: Anything in the bucket or on the chart?

P1: Hakuna

I1: In this bag i have lots of empty medicines which i want you to sort through and tell me which you recognise and which you don't recognise. I have just brought these along for research to understand which ones you know and which you don't know. So recognise over here and don't recognise over here.

P1: Sawa

P2: This one is for cattle and sheeps.

I1: So you know it.

P2: For poultry. We know it.

We don't know this one.

This one is for cows and sheeps.

We don't know this one.

Skazole. We know it, but we don't know how we have used.

I1: You know it? How do you know it?

P2: It is for poultry.

We don't know this one.

This one is for pig, poultry, cows and sheeps.

I1: Everything

P2: Let's say everything. But we have not yet used.

We don't know this one.

We don't know this one.

Not yet.

We have used this one.

These are not yet.

We don't know this one.

We don't know this.

We don't know this one.

We have not yet used this one.

We know this one.

Antibiotic. We have not used.

Even this one we don't know it.

I1: Now this one is hard to see but it is just here.

P2: Not yet.

We don't know this one.

We don't know it, we have not used.

We know this one.

I1: From the chickens did you say?

P2: Yeah.

We know this one. Antibiotic.

We don't know this one.

We don't know this one.

I1: So now i want us to take these ones and i want you to put these into used on the pigs, just on the pigs, and whichever you have not used on the pigs.

P2: We are saying that this medicine is coming with the doctor. So we are, so when it is passing. Because the doctor used it but not us.

We have used them in poultry.

This one we have used in poultry.

I1: Ok so all these are not used in the pigs and these are used on the pigs.

P1 through I2 translatioI2: She is saying the pigs don't have a lot of diseases.

I1: So now I am going to put all these back in here. And i want you to sort these ones, so the ones you have used in the pigs into the ones used frequently on the pigs and the ones not used frequently on the pigs.

P2: Vitamin

I1: Which is the vitamin?

P1: They are minyoo

I1: So 17 is deworming?

So what do you use this one for? Number 17?

P2: For deworming.

I1: And when do you use it?

P1 through I2 translatioI2: After 3 months

I1: Ok so all the pigs after 3 months get this?

P1 through I2 translatioI2: Yes

I1: And this one?

P2: And this one

I1: What do you use it for?

P2: It is for vitamin. To make it grow faster.

I1: And when do you give it?

P1 through I2 translatio I2: After 2 months

I1: All the pigs?

P2: Yeah

P1: Ilikubwa

I1: To make them big?

P1: Yeah

I1: And do you give it or does the vet give it? Dacteri?

P1: Doctor

P2: Doctor, not us

I1: Ok, they come and inject.

Now can you put these back together and can you tell me which you have used in the last month, so here, and not used in the last month.

P2: Deworming. Even this one.

I1: So the same two.

Do you remember when you used this one last?

P2: We used this one last week. For vitamins to make it grow faster.

I1: So you use at 3 months?

P2: After 4 months we inject.

I1: Just once?

P2; Once or twice.

I1: Ok i understand

And this one when did you last use?

P2: After 2 month, we give it. But the doctor comes.

I1: The doctor comes to give this?

P2: The doctor.

I1: How does he give it?

P2: They put it into water.

I1: Ok.

P2: We mix.

I1: And then they drink.

P2: And then they drink.

I1: My last few questions to you then. If a pig gets sick, just before you want to send to slaughter, what do you do?

P2: If you want to take it to slaughter...

I1: Yes but it is not well

P2: Not well?

I1: It is sick, it has disease. What do you do?

P2: We don't take it to the abattoir if it is sick.

I1: And what do you do instead?

P2: We call a doctor and look it out and told us what to do next.

I1: If a doctor gives a medicine and then it starts to get better, can you send the pig to slaughter?

P2: When it becomes better, you take it to slaughter.

I1: And when you give a medicine and you want to send to slaughter. Can you send straightaway?

P2: No, no no no. We first of all wait for the medicine to be used in the cow. Not the cow, the pigs. When it is ok, that we can take it there.

I1: Why do you wait?

P2: We wait because, that medicine is inside the body. And when it is taken there, it is very poisonous.

I1: Poisonous?

P2: Yeah not usable.

I1: Ok poisonous to who?

P2: The user.

I1: To people might eat

P2: The consumer.

I1: How long do you wait?

P2: I wait after two weeks.

I1: Two weeks

P2: One month.

I1: How do you decide between two weeks and one month?

P2: As directed by the doctor.

I1: The doctor will tell you.

P2: Yeah

I1: And they will tell you every time?

P2: We are told, somehow, this pneumonia. These diseases of cold, cold diseases. It is injected. We are told don't eat it, or take it to the slaughter after two weeks. Something like that.

I1: When they come to give these, do they say that you should not send to slaughter straightaway?

P2: Yeah

I1: And do you remember how long they say for these?

P2: Two months

I1: Two months?

P2: Yeah.

I1: And this one?

P2: We wait for two months.

I1: If i show you this, do you know what that means?

P2: This one? Withdrawal period of meat? Withdrawal period of meat. Yeah i know it. It is saying, withdrawal period of meat. How we can use, when it is injected, this one, how long it can take to be eaten. Am i ok?

I1: Yes. Very much so. Very good.

How have you found the study?

P2: We are ok because you have taught us how to use, we have seen another medicine that we have not yet used. So we have experience when we get a cow, or a goat, we can get that medicine.

I1: Ok, these are just any medicines i could buy. I don't know if they are good or if they are bad. By me bringing these I am not saying, you should use this because I have never used. I am not a vet in Kenya so i have just brought them to show you to see if you recognise or not, not to say you should use or not.

P2: We can use it when we get something to give it. When the diseases come for that medicine.

I1: But you will chat to your vet right? And how did you find the bucket and the chart?

P2: That we put the medicine. It was good.

## **Farm 11**

### **Visit 1:**

I1: She's big! Tell me about them.

P1: These ones are for 21. They are breastfeeding for three months. I usually breast feed them for two months, now i am seeing that for three months it is good because when you start feeding them they grow very fast than two months.

I1: And she is big so she can cope with it right.

P1: They are breastfeeding.

I1: Yes but she has not gone very skinny. And you have 7.

P1: They were 13. But the other died because of diarrhoea. My husband was giving them the peelings. He realised that they were diarrhoeing and then stopped.

I3: Cooked peelings?

P1: Cooked. Yeah.

I1: When did they die?

P1: The time they started eating small like that.

I1: I'm sorry. Did you give them any medicine?

P1: I don't know what I gave but i will ask in the agrovet.

I1: And who else do you have? So you have 6 in here? Are they from her?

P1: The mother is there.

I1: That's their mother.

P1: Not this one, the other one.

I1: Ok and how old are these?

P1: I can't remember. I wrote it there.

I1: And they will go to [LIA]?

P1: I sell them to [LIA].

I1: When do you sell them?

P1: Mostly i should sell them when they are from 6 to 8 months.

I1: And what weight, do you know?

P1: Approximately they are usually, average usually 55 to 60. Because there is another one that can come 88 to 90.

I1: Big. So why [LIA] and why not [large integrated processor]?

P1: [large integrated processor] they have a big process. [LIA] is personal, it is 1 to 1. You see in [large integrated processor] you must have order. And then they classify them to class A, B, C. Then [LIA], they don't classify the meat. They slaughter them and then they measure your weight. After measuring your weight they take your weight and then they pay you.

I1: So it's more simple to go to [LIA] for you?

P1: It is more simple than [large integrated processor].

I1: And you sell through a broker?

P1: No.

I1: Straight.

P1: Straight. There is a person who usually comes and picks them.

I1: Who is not a broken.

P1: Not a broker, he is a person who has, he is <inaudible> and orders.

I1: Another sow? With some piglets. 8 piglets.

P1: There are 9.

I1: I cannot count. And you are happy with them?

P1: These ones are one month.

I1: And they are good? You are happy?

P1: About them? Yes. I want to see them, I can't say now that i am happy, because when they eat, <inaudible but was explaining that she doesn't want to say that she is really happy with them until they are weaned.> That is the date that I will say they are good.

I1: And this is your boar? Hello.

P1: This is the mother of those ones.

I3: Oh there are two.

I1: And this is your boar right. And this is the boar that you use.

P1: Duroc.

I1: You are happy with him.

P1: He is well. I have not stayed here for long. The first one to give birth will be this one. Now i will observe how the children will grow.

I3: Ok the piglets.

I1: Do you think that he has served her?

P1: It is already served.

I1: Yes, oh good.

P1: It was here. This male doesn't want to stay here a long time. Wants to jump.

I3: Oh it jumps, through the other side.

I1: That's nice. It's nice to see them with someone. And here, who do you have in here?

P1: This one is the same. It was stunted. It had a boil. It stopped growing.

I3: So the doctor came?

P1: The doctor came and diagnosed it. Now it is the way, the deformation of the leg. Now after healing. But that male, she is saying she was staying with this male, they fought, they were fighting.

I1: And what will you do with him?

P1: This one, i will just give him food. He is not done anything.

I3: She is just observing.

I1: Ok and you see if he grows?

I3 translating for P1: So this one has experienced stunted growth. She cannot explain what.

I1: That's annoying. What do you have here? You have lots! So in here you have 7.

P1: These ones are six to eight months. They have seven, but i want to now feed them beans so that they can add weight. When they reach here, I usually feed them beans.

I3: They are almost ready for market so they are doing finishing where they feed them beans and potatoes.

I1: This one is big

P1: That's why I was giving you the average, because there is a one that can grow and the others.

I1: He might be one of the best pigs I've seen here yet. And here you have,

P1: They are the same age. That would be even if they have a difference of one week which cannot be a big difference.

I1: No, they start to go all the same don't they. But they are different litters.

P1: They are two mothers.

I1: They are lovely. They are growing well.

P1: I inject them. I have injected them,

I1: What do you inject them with?

P1: Vitamin and iron.

I3: Dewormers?

P1: Dewormers. After treatment then I feed them for either one month two weeks or two weeks.

I1: And then they go.

P1: And then they go.

I3 translating for P1: She does one month before they go.

I1: Can you show me the medicine? Oh you have cows too!

I3: And they are building a poultry house on the upper one.

P1: This one, these are my containers. I am not the one who used to do this one.

I1: So what's this?

P1: This is the booster, this one is the vitamin. This one is for dewormer.

I3: Ivermectin

I1: Anything else?

P1: These ones are more the same.

I3: So basically here, they do dewormer then multivitamins.

P1: After every two months, that is the time that i usually do it. And when they are almost to go, i give the last one.

I1: So two months before they go you give the last one?

P1: Now I have separated them from their mothers, I am not the one who usually injected.

I3: The animal health officer will come.

P1: Will come and inject them after separating. When he injects them, after every two months, then I call him. After every two months, when they are almost to go, i usually give them either two, or four month i give them one month, one month, one month. That way. Because of this booster, to boost them.

I1: Can we look at your food?

P1: Ah my food. My food is sow and weaner. I show you. The sow and the weaner with the beans. Already they have been used today.

I1: Ah wow, this is how you cook. Can i take a photo, is that ok? Just of how you cook. And your food?

P1: Let me show you.

I1: So everyone gets sow and weaner?

P1: These ones so, from this company.

I1: And it's good ?

P1: I started using them, these ones. I started using them like two weeks ago. Because the food are expensive but these ones are cheap. You go to the cheaper one, because you want them to give you the profit. So when they are full with beans and the leaves and these ones for potatoes I do like this for that one.

I1: Ah ok so they mainly get beans and peels and viazi. And just a bit of this.

P1: Yes just a bit of this.

I1: When they have finished.

P1: Eh.

I1: It's interesting because yours are strong. And so you have already told me lots of what you do to keep them healthy, to stop them from getting sick.

P1: Mainly, they get pneumonia when the weather changes. But when there is no change of weather i don't see any problem with them.

I1: So how do you know that they have pneumonia?

P1: For example they stop feeding, they sleep and they shake.

I1: They cough?

P1: No they don't cough. But they start shaking and stop feeding. You realise because the pigs are playing. They play a lot. Now you see the one that has a problem.

I1: It does not play, or because ha ku cheza?

P1: Because, when you give them food, then you see the one who is not jumping and is just sleeping, then you know.

I1: And what do you do when you see the one that is not playing?

P1: I just call the health officer, the veterinary. I just call him. I have the number. Not I call him because he is the one who will do that one.

I1: And then he comes to give the medicine?

P1: He comes to give the medicine.

I1: And it works?

P1: Very well. But when you delay you see that, for example when i see that it is sick in the morning, when i delay and call him in the evening, i don't know if it is the medicine has strong then the pig dies. But when you see and you call him immediately, it recovers.

I1: And do you know which medicine he uses?

P1: I will ask. Next week when you come i will show you.

### **Visit 2:**

Pigs are fine.

P1: He injected them, then he decided to inject them so they grow with vitamin and dewormer. But the one that has the wound, it was given antibiotic and the spray, the dawa. So that the wound can dry.

I1: Did you write on here?

P1: Dacteri. But not yet [result], but we will know, even if it is next week the doctor will come and write how they are going.

I1: So you, all dacteri? What is VTC?

I3: Veterinary technician.

I1: And so that's his ID?

P1: But i will not inject them until they go now. Because the vitamin and dewormer until they go. That is the time that i will give the other ones now.

I1: So you did your iron? And then you did multivitamin. And those are the ones that will go right? And the same for this, those are the ones that will slaughter? In a few weeks?

P1: Yes. No i will give them one month two weeks so that they can go.

I1: And do you do this again before they go?

P1: No

I1: So this is the last time

P1: I give them only, because we feed them 6 or 8 months, we give them only 3 times. Vitamin and dewormers. After that, no again.

I1: Why no again?

P1: Because now, because i want them to kujaza (fill), when i inject them they will have medicine when they go there. Before that, one month, two month, the medicine will be vita kumaisha [it will end].

I1: And this one was the back wound?

I3: Was this an injection or a spray?

P1: It has an injection and a spray.

I1: Asante sana.

### **Visit 3:**

P1: Once this one has healed he [vet] will come and press the boil.

I1: What stick a knife in?

P1: No a scalpel. And then the to press that thing that is causing the boil. They are good because they don't take medicine. When you give them that dewormers and vitamins, they just go.

I1: Do you remember last week you said that when you give a medicine you have to wait to slaughter. How do you know to do that?

P1: Because the medicine is written, when you inject the pigs give them 28 days. But i don't give them 28 days me. I give two months or one month two weeks.

I1: Great, to be sure?

P1: To be sure.

I1: So how did you learn to look at what it says on the bottle? Who told you that?

P1: It is just me because i say these ones, the medicine is not good for people. So i say even if i inject them, selling them the meat has already, because the medicine will just circulate in all the blood. So the meat will have the blood. So i, we, my husband told me, you'll not be selling them immediately when you inject. You'll be giving them two months or one month three weeks, or one month two weeks. Yes.

I1: It's very good. Can you ask your husband how he knew that, for me? And tell me next week.

P1: I will tell you.

I1: Because we are worried that people don't know that, but you do and it is really good. Do you think most people know about that? That you should wait?

P1: I think they know. I think they know because even if there if, there is a time like this one [pigs almost ready to slaughter], almost to go, they came ill. Mine. There were three, they came ill. And when they came ill the vet come and he injected them. Now we saw that they are not improving. The time when we wanted to sell them, my husband told me, because these ones they have not even finished one month, even one week, before they were injected. Let them die and then we bury them.

I1: Really?

P1: Yeah we buried them and they were very big. They were like this [pointed to finished weight pigs two weeks from sending to slaughter]. They were three of them.

I1: So that's a lot of money that you have lost.

P1: We lost but it is good. Because when we'll have money, and the other ones [people] they'll eat and they die, it is not good. And it [people] becomes sick because of the medicine. It is not good.

I1: So when a pig dies?

P1: We bury

I1: You bury. So you wouldn't eat?

P1: Ah you can't eat them. Even meat [inaudible], you can't eat. You can't eat. Because you don't know the disease it has. And these ones goes together with the people. When you eat it you can get sick. You can't.

I1: Thank you so much, that's so helpful and so interesting. You are very knowledgeable.

Talking about abscess pig.

P1: Doctor must come and press that boil. And now I cannot send this one, because it has taken a medicine, an antibiotic. Now it will stay here so that the medicine be over in the body.

[After the dictaphone was off she said that she is really hoping that at the end I will give her some feedback so that she can be the best farmer she possibly can be.]

#### **Visit 4:**

[Participant expressed that she would get a vet out to check the results of the pig which has been treated before my final visit so that she could completely fill in the chart for me. Which I had asked her to do. I told her that I really didn't want her to as this would cost her money and that she was perfectly competent to write on the result.

No meds this week, in bucket or on chart.]

#### **Visit 5:**

I1: So have you given any dawa?

P1: I have given then for diarrhoea. These ones. But this one I have not recorded. The smaller ones. For diarrhoea.

I1: All of them?

P1: To give them this

I1: Ah the skazole.

P1: This one for diarrhoea. Only this one.

I1: And how did you give it?

P1: I put it in the water then i pour them. I took some hours so that they can become thirsty. So i can put, so that they can drink all of them. So that they can stop that diarrhoea.

I1: Ok. And how many days did you give it?

P1: Just one day. Just yesterday.

I1: Will you give it again or just once?

P1: No i will see, i will look if they diarrhoea again. If they diarrhoea again i will give them. But if they do not diarrhoea, I will not give them. Because i don't like giving them medicine.

I1: Why don't you like giving them medicine?

P1: Because you see the medicine will not move in their system. And this one i am keeping them for meat. You know when people eat medicine, it is not good for their health. I just avoid as much as possible not to give them medicine.

I1: Great. And did you get this from the vet or from the agrovet?

P1: This one, my vet told me to buy it.

I1: Ok spoke to Paul?

P1: He is the one i usually consult him if my pigs are sick. And he tells me go and buy the medicine. Dilute it in the water and give the pigs.

I1: Ok so you always speak to him first?

P1: Yes i must, because you can go and those ones, they are selling medicines, they give you the wrong medicine.

I1: The agrovet?

P1: The agrovet. So i prefer first to talk to him, he tells me you buy a medicine, I go and say this medicine.

I1: Any other medicines?

P1: Not yet.

I1: In this bag i have medicines that i have just bought for research. I want you to tell me if you recognise them or if you used them before. So first of all i am going to give you each one and i want you to put it over here if you have seen it before and over here if you have not seen it before.

P1: I am not recognising it.

I don't know if the doctor has used this one.

Not.

I am seeing it is for the chickens but i don't feed chickens.

These I have given in the cows.

These are for the chickens, I don't keep chickens.

This one and these ones are the same. [Indicating same brand but different drug]

I1: How do you know they are the same?

P1: Ah they are the same, what, the same company,

I1: Yes i agree

P1: If it is for the cow or pigs, but if it is for the chicken, no.

Oh yes this one [skazole] for the diarrhoea.

This one is for the cows. I have used in the cows.

This one I have not seen it.

No.

I1: So all these go away and we just leave the ones you recognise. No i want you to sort these ones into ones that you have used on the pigs, and ones that you have not used on the pigs. So just on the pigs, nguruwe tu.

P1: This one i have used in cows. Because i have used can i place it here?

I1: Only put here what you have used in the pigs. Yes. So if you have not used in the pigs then pop it here for me.

P1: Because mostly i usually use this. Because i usually use them for dewormers and vitamins. The dewormers, which ones are the dewormers and which ones are these ones.

I1: You tell me.

P1: The one that i have used. Because mostly the one that i have given you are the one that i usually use.

I1: This one, do you remember what they used it for?

P1: This one, I think it is antibiotic.

I1: Ok cool.

P1: This is an antibiotic.

This one i have not used. I see the bottle and when i see the bottle i can recognise. So that i can place it. Let me see.

This one i have not used. But this one i know they have used but in cows.

I1: But these ones were used in pigs. Do you remember what they were used for?

P1: Mostly, this is an antibiotic. These were, you see these are antibiotics. The pigs, they were sick. Not these lot.

I1: A different lot.

P1: A different lot. I used this one because they had a, first when you come you asked how would i know they are sick? I told you when they are shaking i usually know they are sick.

This one is for diarrhoea. Even you have seen I have used.

I1: And this one?

P1: This one I have used in cows. I have only used these ones. Only these ones.

I1: So out of these two, i now want you to tell me which of these two you have used frequently and which you have not used frequently.

P1: Frequently is the one i use mostly.

I1: Often

P1: Often, yes. Only this [skazole]. And it is because they have diarrhoea.

I1: Yes

P1: These ones i have bought for them two times.

I1: Now i am going to put them back together and now i want you to tell me which of these you have used in the last month and not used in the last month.

P1: Last month i have not used these one, but I have used this month.

I1: But this you have used in the last month?

P1: But only for the litle ones. These big ones I have not used any medicines. If it becomes sick now, die, bury. I cannot give. Because now they are going on December 12th. It's only two weeks. And when they go, when you give medicine, it is only two weeks, it will leak medicine.

This one i have given for smaller ones. And if today it is not diarrhoeaing i will not give them.

I1: And this one, have you used this in the last month?

P1: No i have stayed for long.

I1: Thank you.

Do you know what this means?

P1: Withdrawal period for meat, poultry five days. Other animal 8 days.

I1: What does it mean?

P1: That you don't give them if you want to slaughter them, if it is for poultry, don't give them if you will eat them before 5 days. And if it is for other animals, for 8 days, give them the period of 8 days. Yes.

I1: Brilliant. Do you think everyone follows these? Do you think everyone does what you do?

P1: Let me say for myself. For me, no. For others, I don't know if they know.

I1: How have you found the study?

P1: I am happy. I thought that you will tell me the conclusion, how i will do for my pigs to become big.

I1: And how have you found the clipboard?

P1: Writing? It is good.

I1: Why is it good?

P1: For record. It is very good.

I1: Why do you like to record?

P1: Because sometimes even you can forget. And when you have already written, the written thing cannot be forgotten. Instead of thinking, yes.

I1: And would you record what you give or just what the vet gives?

P1: I recorded what the vet gave but this one I have not yet recorded

I1: You have not yet done, but would you like to record both? Is it useful to do what you do or just what the vet does?

P1: Even me. I record, even now my cow has been given this one. I must record even if it is in the calendar. I will write something there. The vet gave this one.

## **Farm 12**

### **Visit 1:**

I1: Can you show me the pigs? Can you tell me about them?

P1: I am the one who takes care of the pigs. I have not watched for them.

I1: Today?

P1: Today.

I1: I am sure they are fine. Who's this?

P1: These are my pigs.

I1: These are your pigs. Who is this?

P1: I have not named it.

I1: Girl or boy?

P1: This is a girl

I1: Your sow? Is she pregnant?

P1: No she not.

I1: What are you doing with her?

P1: This I am just taking care of it. I want to sell it because when it gives birth to piglet it sleep for them. It is heavy.

I1: Oh no it laid on them?

P1: Yeah. Cause it is heavy, no it doesn't control itself.

I1: So she killed them all?

P1: No it doesn't give them all?

I1: How many did she kill?

P1: This time she killed almost 12 of them.

I1: Oh no.

I1: And who is this?

P1: This is a girl also.

I1: Does she sleep on hers?

P1: No.

I1: Tell me about her.

P1: She has just given birth two times.

I1: Great. And is she pregnant?

P1: No this time she isn't.

I1: She isn't. Ah did you put her to the boar?

P1: No.

I1: So you sell her or you?

P1: No, these I am keeping for bringing more piglets.

I1: More piglets.

P1: Yeah

I1: So will you get a boar or will you do artificial insemination?

P1: With this one? I don't understand. I want to give it a boar.

I1: So you bring a boar here or you take her?

P1: No I take her.

I3: You have a boar here? Inside here?

P1: Yeah i have it but i don't use it on these ones.

I1: Why not?

I3: Because they are related.

P1: Yeah

I1: Ah you know! Ah that's great.

P1: I have to go to another area and i bring it here.

I1: That's very good that you are not just using him. Who's this?

P1: This is also a girl.

I1: And what is she doing?

P1: This, they are to bring more piglets.

I3: Is she pregnant?

P1: No it isn't

I1: When did you take piglets away?

P1: Three months ago

I1: Ok. And they are waiting for you to find a boar.

P1: It is a boy I am finding actually. Because i can't find in this area. Because I sell to them. Because i don't know if i sell to them, we don't know which is their piglets

I1: You are very good.

I3: But three months is a long time.

P1: But we have gone to another area but there it is transport that we lack.

I1: Ok. So you have a boar that you want but you can't bring him here. Why do you lack transport? Cost?

P1: Yeah.

I1: Who else do you have? Piglets! Whose are these?

P1: These are the piglets that I reared.

I1: That she did not squash. So she had 16 total! That's a lot. You are the lucky ones. You 4. And they are good? You are happy with them?

P1: Yeah. They are three months and you can see how it's two months also.

I1: They are good. So you sell at how old?

P1: Eight months, 9 months.

I1: To [LIA] or here?

I3: Here we don't slaughter pigs.

I1: That's why ok.

I3: The nearest is [LIA].

P1: This one is pregnant here. This one i didn't buy it here. It came. This is the boy that I have.

I1: This is your boar and this is a pregnant.

P1: Pregnant girl.

I1: First time?

P1: First time. But i have to give it this one because they do not relate.

I1: They are not related. Do you think she is pregnant? How do you know?

P1: Yeah, you can see.

I1: So soon? You did well. Any others.

P1: Yeah i have some.

I1: Upstairs?

P1: Yeah.

I1: Oh cool! Upstairs pig farm? Who are these?

P1: I have not separated. They are mixed boy and girl. Those piglets they are down, they are their mothers.

I1: So you have four and then, different mothers? Can i take a photo? I have never been upstairs with pigs before.

I3: How many months?

P1: These they are two and a half months.

I1: And they are good, you are happy?

P1: Yeah

I1: That's good. Do you castrate?

P1: Yeah. When they are three weeks.

I1: Yourself? You do it yourself?

P1: No. A doctor.

I1: Ok. And who is in here? Four from different mum?

P1: Yeah.

I1: And then the final ones.

I3: I am asking if they can exit from there.

P1: They fear heights.

I1: They are sensible. So this is everyone. This is all the pigs. What do you give them to eat?

P1: We go there, to the slaughter house and we take the meats there.

I3: Meat parts?

P1: Yeah.

I3: There are those who trim meats. <Inaudible>

I1: So the offal so the intestine and

P1: Yeah.

I1: Cool and what do you do with it?

P1: I come and cook them here.

I1: Can you show me?

P1: We do carry them.

I3: Because there is no ramp to allow them to come down.

I1: So before they get too big you carry them down?

P1: Yeah. We do carry them. Two people.

I1: You are very brave. But you are using space. So you don't have more to go this way so you go that way.

P1: Yeah. Here is my kitchen.

I1: Can i take a photo and then you can tell me what you do. So you get the meat from the slaughterhouse.

P1: Yeah.

I1: And then what do you do?

P1: Here I boil meat.

I1: Oh wow.

P1: And there i boil now beans. I mix with the beans and meat now.

I3: So there are three types. He is also saying the feeds, like the ones you have seen in other farms, he mixes them.

I1: Ok so you get some normal pig food, you get your beans and you get your meat and you mix it.

P1: I mix them now.

I1: And you give it to them, once a day, twice a day.

P1: I give them at the morning and at the evening. Now at the day times giving them more water and more water.

I1: You are giving them water. And they like it?

P1: Pigs without water is not feeding.

I1: And feed, they like the food? So do you have to pay for it?

P1: Yeah.

I1: But it is cheaper than pig food?

P1: Yeah it is cheaper.

I3: These ones are trimmings. The ones that fall on the ground.

I1: Do lots of people do that around here?

P1: Yeah, lots of people do that.

I3: I think due to the proximity of the slaughterhouse. Blood?

P1: No

I3: Because I know also some farms they do that. They boil that and when it is dry they mix it with the food.

I1: Ok

I3: But not many.

I1: Do people feed pig to pig?

P1: No.

I1: So you would only feed cattle?

P1: Yeah.

I3: No these are from beef slaughterhouse only.

I1: And how do you know when it is done?

P1: When it has boiled. I do know because they come when it is hard, and when they are done it is very soft.

I1: Wow. You are the first person i have seen to use from the slaughterhouse. Sheep as well? And what do you feed them? Do you feed them the same?

P1: These are actually i feed them the waste of cabbages, potatoes. Those are roasted.

I1: And do you have any medicines here?

P1: Medicines. No i don't have. It is finished.

I1: So you don't keep stuff here.

P1: Right now i don't have any medicine.

I3: It is the doctor who comes with it?

P1: Yeah.

I1: And so you have showed me lots of stuff but what else do you do to keep the pigs healthy? To stop them getting sick?

P1: I was giving them even salt. When i am giving them food, i am mixing salt with food. But not the salt that..

I1: Oh you don't mean, I know what you mean. You mean vitamins. And that keeps them well. Anything else?

P1: No it is that or medicine. Yeah

I1: Thank you.

## **Visit 2:**

I1: If a pig dies, what do you do with it?

P1: I usually bury it.

I1: Would you ever eat?

P1: No no no.

I1: Do you ever slaughter anything here?

P1: No.

I1: I thought that home slaughter would be more common here. But not many people seem to do it.

P2: I think because of the doctors of the meat. The inspectors. So if you take it to wherever, in the butchery, they will require certification of meat because of the stamp. So you have to take it to there. So that they can inspect that the meat is ok.

I1: So if you slaughtered at home you would not have the stamp.

P2: It is for food safety.

I1: I think that's better right? But in Western Kenya, home slaughter is more common?

P2: Yeah. You know why?

I1: Why?

P2: Because the doctor there is not available mostly. But here the doctors are available, you find them there. I think in the slaughterhouse of Western Kenya, you will find one slaughterhouse i think three, two. So they prefer home slaughtering. I am from there, I know. They just slaughter one, two, three. Even the cattle they slaughter two, five. That's not common like here.

I1: So how many would they slaughter here?

P1: Thousands.

I1: Every month?

P1: Every day.

I1: I need to go into [LIA]. So it's because of availability. And do you feel happier eating the meat from here than you would at home?

P1: Yeah i think, you know, if the meat is infected, I think that's right because you think the meat is safe for you. Because you may find some animals, maybe they have a flu or what. You just take the meat you don't know what will happen to you. So i think, the meat which is inspected, it is the right meat.

[Multivitamins in the bucket and written on the chart. Prefers the water as it is cheaper and easier.]

### **Visit 5:**

P1: No i have not used any medicines, apart from these ones.

I1: Oh amazing. Super so that was the vitamins that you gave.

P1: This one was the doctor that gave. Cartisol (vitamin mix).

I1: Do you like writing?

P1: Yeah i did like writing?

I1: So when he gave the castration, he did not give any medicine?

P1: No he did not give any medicine. The experience that he gave for that castration he gave to all of those piglets.

I1: Nothing else?

P1: Except for vitamins that i give for two weeks.

I1: I need your help with what i have in here. So in this bag i have brought with me lots of medicines but just the empty packet. So i want to know which ones you have used. I have just brought these along for research. I don't know any of these because i am not a vet in Kenya, but i want to hear how you use them.

So i'm gonna give you this and i want you to put them in two piles for me. So over here i want you to put the ones that you recognise, and over here the ones that don't recognise.

P1: This one i recognise it yeah.

This one i have never used it.

This one I have used it.

This one no.

This one i have used.

Tylosin.

This one no.

I have not used it.

This also.

I have not used it.

This one i have used it.

This one i have not used it also.

I have not used tablets.

This one i have used it.

Genta I have never used.

This one also no.

I1: What you can do for me then is put all the not recognised back in the bag. And then i will explain what i want you to do for me next.

So next i want you to sort this pile into the ones that you have used on the pigs and not used on the pigs.

P1: On the pigs also.

Pigs. That one we usually give all of them, piglets and pigs.

I1: This one or this one. Sorry yeah, piglets or pigs.

This one?

P1: Yeah.

I1: All of these?

P1: Yeah all of them.

I1: Next i want you to tell me which you used frequently and which you have not used frequently.

P1: This one i usually use it frequently. [13]

I1: Ok and what do you use it for?

P1: Just for protecting them against disease.

I1: All pigs or just piglets, just sows?

P1: Every pig

I1: How often?

P1: Usually after 3 months or after 4 months

I1: And do you give or does dacteri give?

P1: The doctor do it. The that will be injected, it is the doctor we usually call to inject.

I1: Great so number 13, at a few months old the vet will come and inject them all to help them grow?

P1: Yeah yeah.

I1: This one?

P1: I have used it but the veterinarian that comes is the one that usually tells us which one to give.

Now that i have used it just once or twice. Not frequently.

I1: This one?

P1: Frequently.

I1: Number 8 is frequently. So what do you use that one for?

P1: For antibacterias.

I1: Ok so are showing signs of disease or to protect?

P1: No they are not showing any signs of disease.

I1: When do you use this one?

P1: This one, i usually mix them with food. But not every day. It is just like twice, like three months.

I1: When the pigs are three months or every three months?

P1: Every three months.

I1: Ok.

P1: Yeah, what we usually do, there is a doctor who comes here after every six months. He is the one who directs us which medicine to give all to them.

I1: So he will come with a few of these?

P1: No he will just write it to us and we just buy them. The one are to be injected, he is the one who just inject them. And the one to be given, mixing with food, he give us instruction.

I1: Ok cool. And so this one?

P1: That we give it not frequently

I1: This one?

P1: That is frequent.

I1: So what do you use this one for, number 7?

P1: I actually don't know what this one is for. But i usually do give them, the doctor just instruct.

I1: So when they come every six months they say give some of this, some of this.

P1: Yeah yeah.

I1: This one?

P1: Not frequent

I1: And this one?

P1: Not frequent

I1: Great. And then, finally, I want to put them all back together. And now I want you to tell me which ones you have used in the last month, over here, and which ones you have not used in the last month over there.

P1: Last month?

I1: Yes

P1: I have used this one.

And this one.

And these ones.

I1: So do you remember when you used this? [31]

P1: It is something like, last month but one.

I1: And what did you use it for?

P1: It was the doctor who just told me to give one to them.

I1: Yeah to all of them? So pigs weren't sick.

P1: No they were not sick

I1: And this one? [13]

P1: This one, he is the one who injected them.

I1: And again they weren't sick but?

P1: We just lost two pigs, and when he came he just instructed we can give them all to this medicine. [He hasn't lost piglets while I have been coming to see him so this was not this month.]

I1: You had what?

P1: We lost.

I1: Oh you lost

P1: Two piglets yeah.

I1: Oh so you injected all the other piglets, to protect them.

P1: Yeah.

I1: And did they not die?

P1: They did not die again.

I1: Good. And this one?

P1: That one i have used it.

I1: Do you remember when?

P1: I can't recall when i have used it.

I1: That's ok. That's ok. And this one?

P1: So that one.

I1: Can't recall. Cool, thank you so much. I am done. That was hard right? I made you think.

Hey I can't remember what i had for breakfast so....

P1: [laughing]

I1: Great so, my last question to you then is. When you have pigs that you are just about to send to slaughter, if one or two get sick, just as you want to send. What do you do?

P1: Ok that room, usually the last room, we usually use them for pigs that are sick. And we keep them together, because you can't sell to them. My dad is harsh he say, hey you can't give people bad things.

I1: Your dad, because he <identifiable information>?

P1: Yeah. Now we have to keep them in the last room, until they become well.

I1: And what about if you have given a medicine, can you sell them then?

P1: No you can't sell them. You have to wait for six months. So the medicine can be ready and be digested.

I1: So how do you do that then if the vet is coming to give medicine, how do you then not sell for six months?

P1: Hm?

I1: If the vet is coming to give medicine every three months, you are gonna need to sell before then right?

P1: Yeah

I1: So how do you wait?

P1: We to wait, they become

I1: So you know you said you have to wait six months, that's a long time right?

P1: Yeah

I1: How do you wait that long?

P1: He just says we wait. <Inaudible>, it is only god who can take it and it be die. And if it will not die it will just be alive and we shall sell it again.

I1: So if the pig is sick you wait for it to be better? But if it is has had a medicine, why can't you sell for slaughter?

P1: It is a bad idea because that medicine it can be gone and be slaughtered when the medicine is still in the body.

I1: And how long do you want to wait between giving the medicine and slaughtering the pig?

P1: We have to wait for six months.

I1: Six months, that's a long time.

P1: Yeah it's a long time but we usually say that we just wait.

I1: So if the vet has come and given, or if you have given this one, you won't have six months right? Because if you are giving every three months, it will be shorter?

P1: Yeah

I1: So are there times that you can't wait six months?

P1: Yeah we can't wait.

I1: Ok so how long would you wait if you can't wait six months?

P1: If you can't wait, for three months.

I1: And are there times that you have had to sell pigs within the three months.

P1: Yeah. Then the slaughter where we sell, we sell them, there is always a doctor who check on them. Before they will slaughter. And if they are qualified meat. If they are, they are to be sold. But if they are not, it can't be slaughtered.

I1: Ok so let's say you have given a medicine 5 days ago, and then it goes for slaughter. Is that ok?

P1: No it is not ok.

I1: But even though the vet is there.

P1: No, you have to wait. Usually ask if, have you already given it any medicine?

I1: Who will ask?

P1: The veterinary there. Yeah at the slaughterhouse.

I1: So you take your pigs there directly? You don't use a trader?

P1: No. We usually take them there.

I1: Ok and if you say yes but two weeks ago, is that ok?

P1: No you usually ask it is which medicine you have given them.

I1: Ok. So have you had a time that you have had to sell a pig that was given a medicine a week ago?

P1: No we have never. Here we are usually careful like that. Usually notice, even the vet who come here. He notice them, we keep them there in the last room, so it cannot be mixed. These are a litter of pigs. There is a time we usually have many pigs. These sheds will carry 30 pigs.

I1: Ok so this is not many pigs for you.

P1: No this one is not many.

I1: Why do you not have many at the moment.

P1: At the moment it is the boy. We are searching for it.

I1: Yes of course. You told me.

P1: And we want it to come from far.

I1: Yes you told me. Which is great. And other people, do you think they know that you should not sell a pig for slaughter if it has had a medicine?

P1: I don't know if they know.

I1: But you know because of your dad.

P1: Yeah

I1: So let me show you something. So, if i show you this [pointing at withdrawal period on bottle of medicine], do you know what that means? This withdrawal period, meat 14 days.

P1: No

I1: Ok cool, that's fine. So this is the part of the medicine that tells you, when you give the medicine, how many days you have to wait before you can then slaughter. So that is saying that for

P1: 14 days

I1: Meat it is 14 days. Whereas for this one, so withdrawal period meat 5 days.

P1: 5 days. So they usually write?

I1: Yes, did you know that?

P1: No, i didn't know.

I1: Is that useful?

P1: Yeah it is useful.

I1: How did you find the study?

P1: Yeah the study was good.

I1: Has it been ok? And the chart and the bucket?

P1: Yeah they were ok.

I1: And you said you like writing

P1: Yeah i like writing

I1: Do you have anything to add for me that would be good for me to know?

P1: The medicine that i gave to piglets. I have this paper. It is this cartisol

I1: Oh thank you! Can i take? Do you mind coming out with me so i can give you your gum boots?  
And i have some other things for you in the car.

### **Farm 13**

#### **Visit 1:**

I1: Can you show me the pigs? Can you tell me them?

P1: Yeah. This is a male one [when he says male he actually means female]

I1: So tell me about them.

P1: She is just six months old.

I1: Growing well. And this one.

P1: The other one is eight months old.

I1: And did you breed them?

P1: No, they are from the same mother.

I1: Here?

P1: The mother we sold.

I1: And so you have kept these two,

P1: We have kept these two. So i am able to feel them. Then i am able to keep them for some years.  
Have their piglets and then sell the mother. This is the fifth time.

I1: Fifth time you have kept a mother, had some piglets.

P1: Yes. They have some piglets and I save another. Then I take the piglets. But you see the difference  
from some males. Because this male was from another side. And I see there is a difference between  
that male. The enlargement. It is bigger.

I1: So she is better than the one you had before?

P1: Yeah she is better.

I1: So why did you sell the sow?

P1: I sell because I don't want to have adult pigs. Because it is expensive to feed them. If i keep the nice small ones, I will be able to care for them, to feed them.

I1: Ah right because she is bigger

P1: She eats more,

I1: She eats more, i understand.

P1: Exactly. Because the small ones, it is easier.

I1: Ah thank you for explaining because i hadn't been understanding why everyone was selling their sows. But it's because they are bigger.

P1: Yeah the way they are bigger they are eating more. The small ones, you know people can manage them. Because they are small ones, you would be able to feed them, give them medication.

I1: Ok, so how will you get her pregnant?

P1: I see at the back, it turns. And when it turns i just look for a male.

I1: So you don't use this one?

P1: No you can't mate with them from the same family. Like human beings.

I1: And what will you do with him?

P1: He will, just for a few years, and then i will send him for meat.

I1: Is he castrated?

P1: Yeah. So he has meat.

I1: So how come you don't keep them together?

P1: Because this is the male one, he wants to fight this lady. So i separate them.

I1: Oh so he might eat her food?

P1: I do them food separately. Then after some few days <inaudible>

I1: So in a few months you get her pregnant

P1: It will just be in one month to come. She will show me the signs. So before that i will just find a male before. And then the same comes and I will just gonna give the male. For some four days, it mates and i give the owner the pig. Then some fertilises 3 months, 3 weeks, 3 days, 3 hours.

I1: Great. Ok, perfect. So how many piglets did you have last time?

P1: I had 12, but 4 died.

I1: Oh I'm sorry.

P1: Yeah so

I1: Why did they die?

P1: Some of those holes, sometimes the mother wakes up badly and steps on the pigs. Because she is hot. So when the piglets are on the foot, she steps on it accidentally. So the ones that remain i sell.

I1: And who do you sell to.

P1: The people here. Who someone wants to start a project with the pigs. So he comes, he or she comes, we negotiate, they take the piglets.

I1: And him you sell to [LIA]?

P1: The people who slaughter, [LIA] or someone. But there are some others that slaughter. So when she gets two years, she is put for the meat. She is healthy, she is growing, we put her to the meat.

I1: You wait three years?

P1: Three or two years

I1: That's a long time.

P1: Yeah.

I1: So what do you feed them?

P1: [Pig feed brand]. From the agrovet.

I1: Can you show me?

P1: It is finished for now. But i am going to get it after work. Because i am not... but after work i am going to come. Then we feed with the pig food and then some vegetables.

I1: Ah what do you do with those?

P1: I just cook them.

I1: You cook them.

P1: But they are not cooked now.

I1: And where do you get them from?

P1: I buy them. Peels. Potatoes, cabbages, waste from hotels. They come and serve to us.

I1: So how much would you pay for a bag of this?

P1: 300. And then the pig food comes for 2000.

I1: 2000 a bag.

P1: Yeah the big bag.

I3: 70kg

P1: So i just mix them, and i make cook for them so they will be able to digest it easier. The peels.

I1: So what else do you do to keep them healthy? To stop them getting sick?

P1: I give the medications. Twice per month. And water. Because of the digestion.

I1: Do you know what medicines you give them?

P1: I can't actually tell you the name, but i get it from the agrovet. The only tells me about either a bacteria, or its either diarrhoea, she gives me medications.

I1: Ok and then you inject yourself?

P1: The person comes, the professional. He comes and injects the ones. Because i don't know the pigs.

### **Visit 2:**

He is seeing how long he can not give wormer (and vitamin) without them scratching too much.

He thinks that his sow might be ready to mate soon, but she is still very small.

He will hire a boar for one week in the area. He is going to choose one that isn't too big.

He talks about how the secret is plenty of water, but not too much food. They get constipated if they don't have enough water.

P1: The food i wanted, it will be the coming month. Because it is less. So i usually get the vegetables and even they are just finished yesterday. So I am going to look for what i will find by the evening. Because they can't stay. The vegetables still they are hard to get. So when we get some vegetables you try and manage them very well.

I1: So where will you go?

P1: In the hotels. The vegetables, the cabbages, in the evening they maybe have like half of sacks, i go and buy it from there. But it's hard. People are eating that way because of the economy.

I1: If the people aren't eating well, the pigs are definitely not eating well right? It's very easy for me to come and say pigs need to be fed more. People need to be fed more.

P1: It's hard. So the more we are not eating, the more the pigs are starving. Even the flour, the cost is going high. Because we they get the flour in the industry, the prices are high. Even for us, the ones that were low, you see if is hard for us to go and buy a food bag. So i go for the half or i go for some kilos. But you try your best. In the case of the food, we travel all over the place. <Inaudible>

I1: So your pay from work goes down?

P1: Yeah and the pigs must eat, the hens must eat, the family must, electricity must be paid. Because here you use electricity for the pigs. Because the pigs use that light. If it wants to eat it finds the food there. It stays on.

I1: Why do you keep it on?

P1: Because of the security. You see there is like a road. So when i close the gate a lot of people pass here. Even the come and steal the stalks.

I1: So you have to keep the light on.

P1: The light on and the gate closed.

I1: It's a hard life

P1: We try and survive.

Nothing in the bucket. Next week he will buy booster and vitamins.

I1: If you had one die, what do you do?

P1: I just dig somewhere. Because she can't eat her child. The dogs can't eat. Because if the dog tastes the pig the dog will be standing here for this big ones. So i did somewhere and then i bury them.

I1: Ok so not eat

P1: Not eat. I dig somewhere and i bury it far from here.

### **Visit 3:**

Doctor came. P1 said that the male one is a bit bigger. The female one is nearly ready to mate. He said to call again when she is ready to mate to give medication. Said that when he comes and injects P1 will get the vet to write it on the chart.

I1: And would that be useful to you to know what he has injected or not?

P1: Yeah because I'll google the medicine. You see the smart phones. If it is the booster, if it's the worms. I'll know. But i can see the poo is not bad.

### **Visit 4:**

Didn't see P1 this week but saw pigs.

### **Visit 5:**

Sow not come on heat. Piperazine citrate in the bucket and on the chart

P1: This one is the one that i have given them. I have given them this medicine. You see it is for the pigs.

I1: So this is the only medicine you have given in the whole month?

P1: Yeah <Inaudible but talking about how he gives booster in the feed>

I1: I have brought along lots of empty drugs. So what i want to know which you have used and which you haven't used. So i have just brought them along for research. I am not a vet here so i don't know if they are good or bad, i just want to know which you have used and which you haven't used. So first i want us to look through them and i want you to sort them into the ones which you recognise, we can put here and the ones which you don't recognise put here.

P1: There are many.

There are so many medicines I have not seen.

Most of these I have not used.

Oh the bag is dirty because it is so muddy

I1: Because we have had so much rain right

P1: It is a blessing. And now the crops can grow.

We are done.

I1: So now we can put all these back in the bag and we will just look at these ones.

So these are the ones that you recognise right. So now I want you to sort these for me into the ones that you have used in the pigs and the ones that you have used in the pigs. So not the chickens, just the pigs.

So now i want you to sort these ones for me into the ones that you have used frequently, we can put here. And the ones you have used not frequently.

P1: Those two

I1: So what do you use these ones for?

P1: I go to the agrovét. I tell them I want for the worms. Yeah so they give me these ones.

I1: And now i want you to sort these ones again, into used in the last month or not used in the last month.

P1: The last month i have used this one, haven't used this one.

I1: And this one?

P1: Haven't used.

I1: So what was this one for?

P1: This is the one that I have given you, in the box. So i give them for the booster, for the itching. I give them for worms. I see when they go to toilet. So even that one can be a bit easy.

I1: So my last question to you. If you are just about to send pigs to slaughter, and they get sick, what do you do?

P1: Sick as in...

I1: They are not well, so you notice something where you would like to give a medicine. What do you do?

P1: I go to the agrovét and i tell them to send someone to inject them. But i don't know, for the last two months or four, I have not yet called. But if they come and get sick, go to the agrovét and tell them my problem.

I1: If it is just before slaughter, can you still send them?

P1: No no i can't.

I1: Ok why not?

P1: Until they are <inaudible>

I1: Ok so what is that time?

P1: You find the meat of the pigs, it depends on if it is a male or a female. So if it is a male it can go even for two years, so that it can be weighed by the kilo. You see <inaudible> looks at the kilo. If it is heavy enough, i sell. If it is not heavy enough i just feed them until my kilos are reached.

I1: Ok. So if you have a pig that is heavy enough, ready to go, but you have needed to use a medicine, can that still go to slaughter?

P1: No it can't go because you can't sell meat that is not good. So until the pig is fine. So i go to the agrovét and then call the person, he comes and he injects.

I1: So the vet will come and inject. And then when can you...

P1: After the pig is all well. Even the cow. You can't sell a cow when it is sick. Because the meat will be harmful to the people.

I1: So if it has been three days and the pig is well, can you send to slaughter?

P1: For me, what i can, <inaudible> about a week or two weeks. So that i can be able to give the pig, when it is fully well. So that next time when the person comes to take another pig, he won't be disappointed.

I1: Ok. So can we look at.... and this is what you use for worming right? Do you know what that means?

P1: 5 days, this is 2 and a half for 2 days. Repeat it after 5 days [reading instructions]

I1: Ok and that is exactly what you have done. This behind it that says here, meat 2 days, eggs 2 days. Do you know what that means?

P1: Withdrawal? For the pigs or for the chickens?

I1: Let's talk about the pigs.

P1: No

I1: So if the pigs are fine, and you give a medicine just before they are going to slaughter, is that ok?

P1: If you give the medicine, you just give a few days while the medicine can be off in the body. Because even you can't do it and sell it tomorrow. So the meat aren't fine. So until the pigs goes <inaudible> until the medicine is fully out of the meat.

I1: And how long does that take?

P1: It can take almost two or four days. So it's like the medicine must go in the body and move that thing that is disturbing the pig.

I1: Ok great. If your vet comes to give a medicine, will they say?

P1: They will tell you.

I1: What do they say?

P1: If the disease is not much strong they will tell you. If the disease is a bit strong they tell you it can take a month. Or they can tell you it is just a flu. You see there were this flu of the pigs, so if there is a flu, don't sell the pig.

I1: Great so this is the time, this withdrawal, meat 28 days

P1: That's almost a month.

I1: Yeah, it's a long time right? That's the time from giving the medicine that the pig shouldn't go to slaughter. Did you know that some were 28 days?

P1: Yeah i was told. Because the person that comes to inject them, tells me how the pig should go. You see this it stays. This is a lot of days. 28 days. But you see, in this it is just some few days. And he is telling you. Sometimes when we use these things, we don't put the medicine in our head. You see these names are a bit hard. So if he comes and tells you it is this medicine and injects and go, so you

don't put the medicine in your head. These are a lot of names. So my aim is to come and see if the pig is doing well i can call him. But if i see some changes, i call him. So he tells me, this should go two weeks. This, it must stay here one month. So that if he goes and someone comes to buy the meat I tell them no. Just wait for the medicine for the pig to go.

I1: Do you think that sometimes someone would have to sell the pig within the month?

P1: It is advisable. So even if it for me i will go to the butchery for meat. I can't give. If they sell me the meat that is not good, even me it will affect me. So they might come and buy my pig, the same people i go and buy the same meat, you see it affected me. So i prefer to wait until the pig is well. Because of you, because of me because of the other person.

I1: Because you care.

P1: I don't look at the coin. I look at the health.

I1: Ok because we are worried if you really need to sell your pig, you really need that money on that day, people would sell the pig for slaughter within this time. Do you think that would happen?

P1: It all depends. You have chickens, you have the sheep. So you see you can't sell because you have a certain problem and you have another option. You can sell a pig, you can sell a hen, or have rentals. You see? You don't put all your problems in one pig. You can sell a pig and then damage a lot of people. So you must weigh the lives of people and your problem. So you have rentals, you have pigs, you have hens, you have goats.

I1: So if that happened to you, you would use another option.

P1: Yeah i can't sell a pig because it has a disease because of my problem. Because i can sell it and then later i hear some several people are in hospital. All because of my problem. So in this life of kenya, you must be open minded. So if i put a pig i must have a hen or i must have some rentals or a sheep.

I1: Right and by having those things that means you have choices, that when something goes wrong and you have to give a medicine it is ok.

P1: If, fortunately, the pig is not sick, the hen is not sick, the sheep is not sick, you see life goes on. So you see if someone comes and she wants a sheep you give them, he wants a pig you tell him or her it is some few months or you can take it. So you negotiate with him or her and the pig goes.

I1: Thank you so much. How have you found the study?

P1: Yeah it has been ok because i have learnt more about pigs.

I1: Have you? What have you learnt?

P1: I have learnt you should give them pigs more, you should get on the pigs. The safety of the pigs. The pigs should be kept clean.

I1: You already know all that. You know how to keep pigs, you are fantastic.

P1: I am just doing what you can do best.

I1: Did you like writing was that ok?

P1: Yeah me i love writing. It shall be helpful because i have added some more knowledge in the pig farming industry. Yeah so that the pigs may grow healthy and so that people may eat good meat.

Because some people don't know if the pig is sick and have a major problem in the homestead they should sell it. You see some things you come in a situation whereby you are forced to do it. You don't have any other option. You don't have rentals, you don't have any other thing. And you have a situation so you sell the pig, you see? And it is not your fault. Even god can see, it is the situation that you are in. But you see, you must be able to follow yourself. You see if you have another resources, you can be able to put, you will say, i won't sell this one because it is sick. But i will do 1, 2, 3.

I1: And not everyone has pigs, chickens, sheep right?

P1: People are different in the backgrounds. Some people have only one pig. And this pig it is all she or he has. So he must put the money of the food, the money of the medicine, the money of the gum boots you see? So if that thing comes of the pig is sick, he or she has no other option. Just sell it. But even God will see, this person has not harmed people lightly. It is the situation they have got.

I1: And that is what i am finding, is that people know that they shouldn't give a medicine and then slaughter, but sometimes you have no options.

P1: No options, at all.

### **Focus group discussion animal health assistants**

I1: Well it sounds like i have got the perfect group of people together for this focus group. So, my first question to you, is along the lines of what you have just mentioned actually. So i would like us to establish before we start properly where pig farmers send pigs to. So in this circle I want us to put the pig farmers that send pigs to [LIA]. And here i want us to put the pig farmers that send pigs to [large integrated processor]. And in the middle I want us to put the pig farmers that send pigs to both [LIA] and [large integrated processor]. Has anyone got any thoughts to put into each group.

P1: Come again

I1: Yes, have you seen this kind of diagram before? These circles? Is that a bit confusing?

P2: It's ok. We understand.

P3: The diagram is ok. Now we want to know the details of what you are expecting from this and that.

I1: So here, I would like the farmers that send their pigs to [LIA]. So is that big farmers, is that small famers. Who would send their pigs to [LIA]? And over here I would like the farmers that would send their pigs to [large integrated processor].

P5: Ok. From my experience, most of the farmers who send their pigs to [LIA], are the small scale farmers.

P2: Affirming

P5: Small scale farmers and those that sell to the [large integrated processor] are the large scale farmers.

I1: Does anyone have any other thoughts?

P2: Yes. The small scale farmers, the level of management, that is inferior. Their level of pig management is low compared to those for [large integrated processor].

I1: Any other thoughts?

P2: Also housing, that is the structure. Housing is low. Almost everything is lower standard. Compared to the large one.

I1: Does anyone send their pigs to both [LIA] and [large integrated processor]?

P2: Some may take to [LIA] because of price. If [large integrated processor] are paying lower. Some may take a few pigs to [LIA], or even [large integrated processor] may talk of oversupply.

I1: Ah

P3: There is another issue of pricing. So when the pig is of high kgs. They tend to buy at a cheaper price when you go to [large integrated processor], as compared to [LIA]. So i think some farmers even prefer [LIA] because of that issue. Now there is an issue of overfrauding market in [large integrated processor]. So if they are not given order at [large integrated processor], so the pigs are going to consume more, they are going to add weight. And when they take their price is low. So some prefer to go to [LIA].

I1: So [large integrated processor] are full basically.

P3: Yeah

P1: I also think that the small scale farmers opt to take their pigs to [LIA] maybe due to emergencies. Maybe someone needs school fees, someone needs the rent. So they opt for the accessible market.

P4: In[LIA], because I have been there like, that is where I usually like, mostly, i usually see like, it's like disposing, like, in [large integrated processor] they don't buy non castrated boars. In [LIA] they

P5: They buy.

I1: Yes. So how do we word that. I'll just put not castrated

P2: Castrated ones <inaudible>

I1: Great, any other thoughts?

P4: Well also, in [LIA], there is no like certain regulations like in [large integrated processor].

P5: They are not complicated.

P4: Even you can take a four month old piglet and slaughter it. Rather than in [large integrated processor] they have a certain like er, what do you call it, like sub regulations. Like you cannot take a, yes you can take, but they will buy it at the lower price

P5: At a lower price.

I1: Ok. So actually there are lots of reasons why people would want to go to [LIA] over [large integrated processor]?

P5: Yes

I1: Or lots of cases where a farmer might want to go to [LIA] over [large integrated processor]. Are there reasons why a farmer wants to go to [large integrated processor] over [LIA]?

P2: And also in [large integrated processor], i have been there for my practices. I have inspected in [large integrated processor].

I1: Oh have you.

P2: Tendency of a pig to be totally condemned

I1: Say that again sorry

P2: That is the tendency, of a pig to be totally condemned because of infections. Which can not be say of, public health importance, compared to [LIA], is very high. So, in [large integrated processor], once you take pigs which have been <inaudible> management, and also concerning let's say drugs and whatever, because I serve in the field, I do segregate pigs. Yeah if you are taking your pigs to slaughter we cannot vaccinate them if they are within a period of 27 days. Yeah because in [large integrated processor] if you had injected a pig with a certain drug, it will be noted. The inspection there is very high standard. And it will totally be condemned. And the owner will be surcharged. But in other local slaughterhouses here, it can pass. So the standard there is very high.

I1: OK so if you vaccinated a pig for foot and mouth and wanted to send it to [LIA]

P2: No, no I don't tell them to send to [LIA], practically it should not go to slaughter at all at all. That is all the animals. Because once vaccinated, the vaccine will interfere so much with meat textures, taste, self storage. It will be, it can, we call it what, it can rot. So that meat is not good. But for all animals, not only pigs. So as here i do vaccination <inaudible> I have to advise the farmers.

I1: so because of the stricter regulations a farmer might want to send pigs to [LIA] rather than [large integrated processor]. Ok so we have talked a bit about why a farmer might want to go to [LIA] and not [large integrated processor]. So we have said small scale are here, sending to [LIA]. Large scale are here sending to [large integrated processor]. Who is here? So who sends to both?

P4: Both

P2: Both

P4: Both i can say, both, for the case of a boar. If you want to dispose of your boar. Ah no, sorry sorry sorry. Both... er.... will you repeat the question.

I1: So you were just saying that if you have a boar it has to go here right.

P4: Yeah

I1: So who sends pigs to both [LIA] and [large integrated processor]?

P5: I think i can answer that.

I1: Ok

P5: Yeah i have seen farmers like the way our brother was saying sometimes the [large integrated processor] come to your farm. They take your pigs and sometimes like now you see the pigs are very expensive. They will tell you feed these pigs for another one month or two months. So in that case, and maybe you don't have the funds to buy the feeds. And you say in your mind you wanted to sell to [large integrated processor], but now they have come and they have complicated things. Then you decide to sell to [LIA] because those ones are not restricted, They don't have many restrictions. Like the [large integrated processor], so it happens.

I1: OK. So even a large scale farmer will sometimes sell to [LIA]?

P5: Yeah

I1: So actually in here is large scale? Right? And medium?

P3: There is another case of, when you come to both, you find that at [large integrated processor] they are given an order of small quantity. And maybe, for example a farmer wanted to sell like 40. And now he is given 10. That can be a choice of going to [LIA]. I have encountered one farmer who has done that. And still, what do you mean by small scale farmers.

I1: You tell me

P3: Because, what is the limit of... to call that farmer a small scale. What is the limit of the pigs. Or the large scale. Because, when you say to small scale. [LIA] [think she meant [large integrated processor] here] do take an order of like 5. I do give them, issue them the movement permit, and also i also pay a visit for an inspection, a pig inspection. So you find that a farmer is given an order of 5 pigs. Can you classify that farmer to be a large scale or a small scale?

P1: I think it is a small scale

P5: I think it is a small scale.

P3: Yes and it can also apply there for [large integrated processor].

I1: So both are small scale.

P4: The lowest i have encountered is one taking three to [large integrated processor]. Three pigs

I1: Still to [large integrated processor],

P3: So therefore [large integrated processor] should also write small-scale. Both large and small scale.

I1: And large scale here too?

P2: Not really.

I1: Not really.

P4: Though it can apply also

P2: It can be medium, but not large

[Others affirming]

P4: Because in [LIA], in a day they can slaughter almost 300 pigs. So

P3: Medium

P5: Medium

I1: Ok, so, thank you for that. That sets our standard for the rest of this discussion because i am mostly concerned about this [draw circle around [LIA] circle]. So our discussion today is mostly going to be around the pigs that go to [LIA]. So we have kind of established i think, correct me if i am wrong. That small scale farmers will generally sell to [LIA]. They might sometimes sell to [large integrated processor]. That medium scale farmers might sometimes sell to [large integrated processor] and sometimes sell to [LIA]. But large scale farmers will generally sell to [large integrated processor]. So we are really concerned today about small and medium sized farmers?

P5: Mm

P4: And another issue, me I am a small-scale farmer. I've not yet reached large, to take your, what i have learnt to take your pigs to [large integrated processor], you gotta have some money.

I1: Money ok

P4: Cause to make your pigs reach six almost seven month, you gotta have money. So like for me a small scale when i see my pig ranging around 50 to 60. I opt for [LIA] cause i need money.

P3: Yes that was also a point i wanted to raise. When you come to those farmers who sell in [LIA], financial, what should i call it, instability.

P2: Status

P3: Status. Now, when you come to [large integrated processor], they are very highly keen on management. You have hear dakteri has said they usually come for a farm visit to view the pigs before they give an order. So if that farmer is not capable of managing those pigs, feeding them well. The farmer will end up losing the market there. So i think financially you will come to that issue of [LIA].

I1: Great, thank you so much. I feel so much clearer. So now that we have set the scene that we are talking about the farmers who sell to [LIA], i want us to move on to thinking about how do those farmers use you. So why, does a small or medium sized pig farmer come to you for advice. What are they looking for?

P1: Ok i think about feeding programme. Because a farmer might think that, a sow he has some piglets, and she gets some information maybe from another farmer, that she should feed with maybe growers, or pig starters, or sow and weaners. So they look for that advice. Feeding programme. And also the vaccination programme.

I1: What kind of vaccination programme do you advise farmers use?

P1: Ok actually, the injection, the iron injection. Which is done on the third day, and the 21st day. For the piglets.

I1: So that's part of your vaccination programme is the iron?

P1: It's not a vaccination. This is a protection from, ok it's a kind of immunity. Maybe dakteri can correct me on that.

P2: Routine

P3: Routine management

P1: Yeah routine management.

I1: That's a great phrase. So advice on routine management.

P1: Sure.

I1: Fantastic. Anyone else?

P3: Some farmers do enquire about feeding. Oh you have written the feeding. Ok, it's because i found a case, a very weird case of malnourished pig.

I1: Right

P3: So that's why i have talk about feeding. Now, pre and post parturition, right. They do enquire that.

I1: Ok so it's specific to the life stage. They want advice on feeding.

P4: Yeah

I1: And how do you feel giving that advice? This nutritional advice. How confident do you feel to give nutritional advice at the moment?

P3: How confident.

P4: Before i forget, can i add the advice.

I1: Please do

P4: Farmers need advice on the best breeds

P2: Yeah also breeds, I wanted to say that

P5: Yeah breeds. And housing

P2: And how to upgrade their pigs.

I1: And housing. So pig upgrades, I like that phrase. Fantastic. Anything else?

P2: Also, market. About pigs. Pig market

I1: About selling pigs.

P2: Yeah market

I1: So what kind of things about marketting pigs do they want to know?

P2: They would want to know, between [large integrated processor], [LIA]. Per kg, how they are paying

I1: Ok, so where, when.

P2: And also for weaners, so say a farmer may want to sell weaners. So he will

P3: Pricing

P2: So he will request information from you, the prevailing prices.

I1: Ah so you know in your area how much weaner pigs are going for. Ah ok. Interesting. I had no idea you did so much,

P4: Other farmers may want the advice on the best, er what do you call it? Maybe they want you to deworm their pigs.

I1: Deworm

P2: That is routine management.

P4: For routine management

I1: So deworming.

P2: Teeth clipping

I1: Teeth clipping.

And do you do that for them or do they do that for themselves?

P2: I think most of the farmers do teeth clipping. Because <inaudible> they do. I do on a farm where i am a kind of consultant. The owner has appointed me as a consultant.

I1: Ok so you will teach them how to do it?

P2: Yeh, yeh, yeh. Because that it a personal, a farmer can manage, on good training.

I1: And these two, so do you do these? The dewormers and the iron or do they do those themselves?

P2: I do deworming, injectable deworming.

I1: Ok.

P2: But for the young pigs, that is for those who are suckling. Normally it is prudent to advise the farmer to start deworming say after two months or so. With a drug the piperazine. That one which we give through the water.

I1: Yes i have seen that one.

P2: And you tell the farmer how to do it.

I1: And the farmers inject themselves with the dewormers and the iron normally or do you do that?

P3: Yeah we do them. We do inject. But oral, they do administer themselves. We just advise them on how to do it. When it comes to teeth clipping, in a while yeah. The higher percentage we do it as vets. But of course you cannot lack a certain percentage that they do for themself.

I1: Ok. And you E?

P1: Ok, in my area, I have noticed some farmers. I think maybe it's due to the financial constraints. They sometimes buy the iron themselves and then just, they do the injection themself. Even the teeth clipping. But maybe in a small percentage, those maybe who have not known, who are fearing to do the injection. So you do for them.

P2: So for castration, and management. Castration.

P5: I was saying it depends on the farmers. There are those farmers with experience. Those ones, they do, mostly we do the iron, but they do the teeth clipping. And then after that we do the castration, but when it comes to deworming, the one my sister L has said, most of them give the oral then we vaccinate the ivermectin, the injections. So it depends with the experience the farmer has.

I1: Show of hands then, who, for their area. Farmers that mostly castrate themselves? Or do you guys castrate? Hands up for mostly para-vets and vets castrating? No

P2: Repeat

P3: Castration. Are we the one who do the castration or it's the farmers?

P2: It's both.

I1: Both

P5: Yeah yeah. Some are very experienced. They do it.

I1: Ok. Great.

P2: You see they are not very experienced. Because castration procedure is surgery. Hygiene and sanitation is so essential.

P5: You are right

P2: And you find the personnel doing that, that's a quack. You should talk of farmer is not fully aware of environmental hygiene. You see, any surgery should be done by a qualified personnel. Surgery, castration is surgery.

P3: By the way there is one farm I wanted us to visit, but the owner just told me, 'we don't want any advice. ourself we do it. When you come to treatment, we do treat. When it come to everything, we do everything.' That's what the farmer told me.

I1: So they didn't want people coming on who might

P3: They didn't want us to attend to give them any advice. They know everything.

I1: Ok

P3: They what they said. That they know everything. So they do treatment, they do diagnosis, they do treatment, they do everything.

P2: But that is a few number. That is a few number of farmers.

P3: That is what i wanted to say, there is a certain percentage of farmer who do everything for themselves. And then this issue of technology. People are being enlightened. You go to online, just see how a procedure is being done. And you know there is those farmers who pretend to know everything. And they <inaudible>

I1: Is that similar to what you have all experienced?

P5: Yeah they are doing that

P1: Similar for me

I1: And would you say that is the minority? Would you say that's a small number of farmers or do you think that is most of the farmrs?

P1: It's a small

P5: Small

P4: That would be 35%

I1: 35% very exact. Any advances on 35% does anyone disagree with 35%

P1: Around 20. I think it's around 20.

I1: I like this. This is gonna come in useful later. Have you guys read this and do you know exactly what i am gonna ask. So you mentioned treatment there, is there anything you think we are missing from this?

P3: When you come to vaccination programme, I thought we should say disease control.

I1: Disease control. As a separate one or in the same?

P3: No we do away with vaccination because, is there any vaccine for nini, pigs except for FMD?

P2: There is FMD

P3: I don't think there is another one

P2: I don't think there is a

P3: We haven't produced another one

P2: No no there is just FMD

P3: There is just FMD

I1: OK, does anyone else sell pig vaccines or is aware of any pig vaccines other than FMD?

No. So if i just put FMD vaccination programme is that better?

P1: Yes that's better

P3: Yes. And disease control.

I1: With this or separate

P3: Separate so we can say about disinfection,

P4: Foot bath

P3: About fencing maybe to keep away maybe

P4: Biosecurity.

I1: Biosecurity. Anything else?

P3: Cleaning of trucks and what.

I1: Anything, ok perfect. Anything else under disease control?

P2: When we talk of disease control we have covered management, housing, yeah we have most of the information there concerning disease control. It can also cover by advise of farmers should be ready to accept the latest technology advice.

I1: Ok so technological advice. Ok. So what about sick pigs?

P2: Sick pigs. It's so far initial disease control because there is separation,

P3: There is isolation

I1: Should sick pigs go on or is that me misinterpreting your job?

P3: Sorry?

I1: How often do farmers call you for advice about sick pigs.

P3: You do a follow-up, maybe for, it depends. On the disease. So we just do a follow up for three days.

I1: So you go to see a sick pig and then you follow up three days after. OK, what were you about to say A?

P2: Sometimes it is not the farmer calling us specifically for sickness. But when you go to the farm to do other duties, you inspect the whole farm. Even poultry if they are there.

I1: Yeah

P2: You identify a problem that's there. And thereby advise the farmer on what to do.

I1: Right so, how often do farmers call you about a sick pig that they have? Compared to all this stuff that we have talked about, how often are you there for sick pigs or just your routine stuff.

P1: Ok i think that the farmers, they are worried about sick pigs. So maybe about the feeding, about the housing, maybe a farmer can visit you maybe in your agrovet or maybe in your office to look for that advice. Maybe if she needs you or he needs you to come to the... to go to her home. Maybe to give the guidance. Er you can go to that farm. But for the disease control, the treatment, it is an urgent thing. So it is often.

I1: It is often. That you will go to a farm to diagnose a sick pig or to treat a sick pig?

P1: Both.

I1: Great. That's great. When you are, so we had sick pig here right. When you are on a farm, or you are talking to a farmer, maybe in your agrovet, about treating a sick pig, what kind of things will you talk about? So what topics will come up?

P5: I think what comes up when you see the pig, you will diagnose the disease. Maybe it is diarrhoea. So from the diagnosis now you will be able to advise the farmer on the cost of the disease. It is because of poor management, you will advise the farmers. You become like a teacher now you advise the farmer everything. Then show them what they are supposed to do. Then you treat the animal. And after treating the animal, then you do the follow ups. And then once in a while, when you come to the farm, is the farmer still following what you told them?

I1: And that's similar to what L was saying.

P2: Quite often i take a case history.

I1: Great

P2: First i take a case history.

I1: So that's kind of here right

P2: For a pig with diarrhoea, you want to have a good case history.

I1: Anyone else have any good topics? G we are talking about what topics come up when you are treating a sick pig. So what things will you talk to an owner about if you are treating a pig.

P4: Have you said about feeding.

I1: Yes we have. Ok so that could be a cause maybe.

P4: Also, I can chip in like, breeding, you know breeding kamma (if), if you interbreed a mother and a breeding also it can affect how the pigs will like, immunity wise. It's another thing you serve a, you know how the things could work.

I1: No that's perfect, I understand. Ok, so let's say we are giving a medicine. What do you want to talk to the farmer about when you are giving out medicines or when you are treating pigs?

P3: What we do, I think they have said about how you handle the report a case of a sick pig. But when you come to treatment, you are the one who knows what you are treating. So you treat and give advice.

I1: Ok

P3: You treat and you give advice

I1: So what will that advice be?

P3: It depends with the case. So if it's about a, if the causative agent is housing, you address it. If it is feeding, you address it. So you give advice according to the cause.

I1: Ok and then let's say you've given advice on the cause but right now you know that you need to give a medicine to get over the current issue. when you are giving out a medicine in the agroveter, do you have to tell the farmer stuff, or can you just give the medicine and they go?

P1: Some of the farmers will involve you. Maybe in a discussion. So what happened, why is the pig diarrhoeing. Can you be.... you give the farmer maybe disectorprim. That's sulphur. So you will try to explain on the level of the farmer, how she or he can understand that the sulphur will help to reduce maybe the diarrhoea, will stop the diarrhoea. And maybe you need some other, maybe like vitamins which will boost the feeding, immunity or appetite. Yeah the feeding appetite. So that maybe when the two combine the pig can recover quickly. Such advice. Because someone will involve you with questions. Why is my pig not breast-feeding? What is wrong? Why is my pig not feeding? Then you will give the advice. You are feeding from poor feed, or you are using some leftovers. Which are causing maybe a fructosis. You give some kind of advice. As you dictate them also to the medication. That is my view.

I1: Ok so they want to know, it sounds like you are saying they want to know how the medicine will work.

P1: Some of them they will want to know.

I1: What else do you want to tell them about the medicine? Is there anything else you want to inform them about the medicine?

P5: Yeah. When you give medicine, firstly we tell them about the withdrawal period.

I1: Ah ok

P5: If it is pig the meat. If it is cows the milk. But here now it is the meat.

I1: Great ok. We are gonna talk more about those in a little bit. Anything else you tell them about the medicine when you are handing them it or when you are injecting their pig?

P5: Sometimes like my sister has said, like in case of diarrhoea. Sometimes you carry like kaolin, you leave it with the farmer, then when you leave it with the farmer, like for the farmer to give like for the next two days. Obviously you have to write, and show them the dosage. Or explain to them about the dosage.

I1: Ok.

P3: So some breeds, some medication, some what, some antibiotics do react with certain breeds. So you do advise a farmer, in case he notice something, to call you urgently.

I1: Oh ok so call if problems

P3: Yeah

I1: Brilliant. Anything else? How often, when you are giving a medicine, so when you are injecting a pig with a medicine for example, or when you are giving a medicine out at an agroveter, how often do you talk about withdrawal periods?

P5: Most of the drugs are written withdrawal period. So, what i have realised nowadays, most of the farmers are even asking.

I1: Ah so they will ask you?

P5: Yeah they are asking. Er, should i sell the pig after a month or when. So they usually ask. They ask and we advise them.

I1: Ok, is that similar to other people's experiences or different?

P5: Especially the agrovets, the farmers ask when they are buying them.

I1: Ok, is that what you find E?

P1: Yeah it is the same case.

I1: Ok cool. Fantastic. Well that hopefully leads us along then. You have mentioned a couple of drugs already. So what i want you to do is write down for me on your sticky notes, so you have all got a pen and some sticky notes, i want you to write down as many examples of medicines that you can think of and then i want you to come up and put them into what you think is the right category. Does that sound ok? And i can sit and not talk for a moment.

P3: So we use the trade name or the active ingredient?

I1: Whatever is good for you. Yeah

P1: One drug per page

I1: Yes

P1: Ok

I1: Yes and then put it in the right

P3: So the trade name. For example

P5: I think the active ingredient would be better for her

I1: Whichever you know. Trade name is fine, active ingredient is fine. And then pop it where you think it goes. Is it a dewormer, is it an antibiotic, is it something totally different.

I2: Do you have pens?

I1: Yep they have got pens. So yes, one medicine per sticky note. Or if you know lots of antibiotics or lots of boosters you can put them on the same one. But so that you can put them in the right category you can put one drug per sheet.

And when you are ready, come and stick your sticky notes onto the flip chart

P3: So we are writing all of this?

I1: As many as you can think of.

P3: Oh my

I1: Wow you guys know a lot. I should have put a timer on you. I think that will do. Let's stop there. R are you ok to go first? Come and put your medicines into the right category. L do you want to come up next?

P3: Ok.

I1: Brilliant. And when you come up if you have any comments, do tell the group.

P3: So i wrote on the wrong side. Let me go and... have the next person.

I1: That's ok! E

A how about you?

I1: And G are you ready?

Hehehe i like that. Pig magic booster. Tell me about the pig magic booster.

Perfect. Is that its name? That can't be its name.

P3: Yeah

I1: Is it? Called pig magic booster? I love that

P3: Yes.

I1: Cool so, how small to medium sized pig farmers use dewormers?

P5: We advise them to deworm every month.

I1: Every month ok. As adults? Everything?

P5: No. Like when it comes to ivermectins. That one, personally i do it after 3 months.

I1: After 3 months

P5: But they are usually deworming with piperazine or the ascarid, it is monthly.

I1: It's monthly. So ivermectin you do at three months old, and then do you do again?

P5: You do it after 3 months.

I1: Every three months. And if they are sending to slaughter at 7 months?

P5: You do it at two months, then you do it again after 3 months. That will be at 5 months.

I1: Ok and why did you just say that, why did you bring it forward when i said if you are gonna slaughter at 7 months?

P5: Because after 5 months, there are two months before they sell. So the drug will have disappeared from the body.

I1: Amazing, that's really interesting. Any other thoughts how farmers use dewormers or how we use dewormers in pigs. Was that pretty comprehensive? Cool. Boosters, how do people use boosters?

P1: Maybe like the one that you are happy about, the pig magic booster,

I1: Yeah

P1: Most farmers they prefer using that with the feeds. Because like the pig magic booster you mix with the feeds. Which has a very good result and especially with the weight gain. So and the vitamins also they prefer doing like every month.

I1: Ok

P1: And especially there are some vitamins like the ones i have written there like the B12, so there are different levels. So there are those that are, i don't know how i can explain it. Maybe L can help. Right now

P5: The multivitamins

P1: Yeah the multivitamins that boost the growth. The growth of the pigs.

P3: And also they build the immunity.

I1: Brilliant. How do pig farmers use antibiotics? Go on L you have a go.

P3: Ok they administer, or we do, when it is necessary. When they are sick. Or, yeah yeah

I1: Or?

P3: No, no, no, no

I1: Ok, anyone else? [Pause] So just when they are sick?

P5: Yeah. Except now there are those farmers that buy the drugs for themselves. Such farmers now

P1: They can just decide that they will be doing like the oxytetracycline every month. Even without the disease

P5: Because they are boosted by the drugs. <inaudible>

I1: Very common?

P5: Hm?

I1: Would many do that?

P5: No. Just a few

P1: Not many

P2: No i should say, drug abuse in pigs is very low.

I1: Very low,

P2: Compared say to poultry.

I1: Really?

P2: Yeah it is very, very low. Antibiotic abuse in pigs. It is very low.

I1: Why is that?

P2: Ah you see pigs don't succumb to diseases so easily if they are under good management and feeding and also pig farmers they are not so much aware of very many drugs.

I1: Oh

P2: You see?

I1: Yeah

P2: Let's talk for my place. You see if i visit the farmers, sometimes you will question them about drug usage. And also i can remember we are involved in researches. Normally you find farmers don't use antibiotic by themselves so much in pigs. You see and when there is severe disease, talk of african swine fever. You see the farmer is so much worried that would immediately contact the vet. He will not have given any drug.

I1: Is that the same as what you have all experienced? Yes, no? Has anyone experienced different to that?

P2: You see in [place] you have a lot of pigs. You should talk more about pigs. Hm?

P3: You know you must hold your horses.

I1: Go on R did you have something to say?

P5: I think i can agree with him. Yeah because not many farmers, ok with the deworming they do for themselves. But when they are sick, most of the time they call a vet.

P1: True

P3: Yes

I1: Did you all agree when A said pig farmers are not as aware of antibiotics? Or have you found different experiences?

P1: I guess it is compared to maybe like the poultry farmers. Because the poultry farmers they are so much aware of so many antibiotics on the market. Unlike for the pig farmers.

I1: Why?

P2: Why you ask? You find in poultry, they succumb to various diseases. Newcastle, typhoid, for pox, so the farmer has a lot of problem in poultry.

I1: OK

P2: The farmer is not aware in poultry of routine vaccination of those diseases. So at one time, they will succumb. The farmer will rush to agrovet. And he will buy medicines from agrovet.

I1: Yep

P2: They may or may not work. And then he will go to another agrovet. And the farmer is keeping the labels of drugs. So, and with time, since they also communicate with other farmers, will be aware of very many drugs.

P3: Yeah and the other thing, is compared to that poultry farming. Poultry farming you just give them medicine like this [signalling to table and drawing a box with her hands]. But when you come to pigs,

when they call you for treatment, you don't give them like this. You just diagnose, go back to your bag and do what you are doing and then you inject. So what they notice is a certain antibiotic which is a very unique. That one they will not en... when they go to agroveter they say 'that one that looked like milk'.

P5: The penstrep

P3: You will know automatically that's a

P5: Penstrep

P3: Penicillin

P5: Mmm

I1: Can i just check that i understand what you are saying. So because in pigs you are normally injecting rather than giving a sachet, the farmer is less likely to see what drug you use?

P3: Mhm

P5: Yeah

I1: Ok

P2: And also in pigs there is a large problem. Handling pigs is not easy

I1: What is not easy?

P5: Handling

I1: Yes I agree

P3: Yes I wanted to say that.

P2: To restrain a pig, it is not easy. Actually a <inaudible> an adult pig, if they really want to attend to it, it is when the pig is seriously sick, such that it is not active

I1: So that they don't need to restrain. That is amazingly helpful thank you. I think i have all that i need for this one. So let's move on.

I would like you to tell me any laws that you can think of around how medicines are used in pigs.

Can you think of any laws that apply to how we use medicines in pigs?

Don't worry if you can't. But i will give you a moment,

P2: If i may ask, when you mention laws, are you talking of laws are from legislature, not regulations, laws.

I1: So regulation from legislation rather than say [large integrated processor] regulation. Are you think of a specific example?

P2: Regulations, let's say if we talk of regulations, I had mentioned about withdrawal period. Once you use a drug, there is that withdrawal prior to taking to slaughterhouse.

I1: Ok and is that a law?

P2: That's a regulation. Not a law.

I1: What's the difference between a regulation and a law?

P2: A regulation may come from pharmaceutical company but a law is an act in parliament.

I1: Ok so withdrawal periods are not in law?

P3: They are not in law

I1: They are not in law but they are in regulation. Am i interpreting you correctly?

P5: Yeah.

I1: So tell me about then the regulation around withdrawal periods. What does it say?

P4: Can i? What do you call it?

I1: Go back?

P4: Can we say, there is a law that you cannot overdose.

I1: Ah

P2: Everytime you see that indicated,

P3: It's a regulation

P2: On dosage and wait. Isn't it. That's a regulation and you have to follow.

P5: Yeah

I1: So is that another regulation and not a law or is that a law?

P5: Law

P1: A regulation

I1: A regulation

P5: It's a regulation

P4: Though it can follow

I1: So it's dosage information

P2: When you talk of a law, in Kenya say, the only personnel allowed to handle medicine, that is in pig, cattle, what, must be registered with the Kenyan Veterinary Board. And that alone,

I1: So a law is that anyone who handles any medication, is registered by KVB,

P4: However once you graduate, and you are not registered by Kenya Veterinary Board, you are not allowed to handle medicines

I1: So does that mean, so we have been talking quite a lot about farmers giving their own medicines. Does that mean that that's illegal.

P4: Very much

P2: It is criminal and illegal.

P5: mmm

[Laughter]

P4: Illegal

I1: Does that include powders or is that just injections?

P5: Injections

P2: Antibiotics

P3: Antibiotics. It's still oral.

I1: Antibiotics or any medicine?

P3: Antibiotic is a medicine

P2: Antibiotic or hormones. Antibiotics and hormones.

I1: Right, any others.

P2: Also vaccines are in that category.

P5: And also selling them

I1: Selling, what's the law around selling?

P5: The person who is

P2: Authorised

I1: Ok so who is authorised?

P3: The one who is registered

I1: So you have to be registered with the KVB to sell medicines.

P2: And inspected also

P3: What about displaying the antibiotics? They was that issue of displaying the antibiotic in the agrovets.

P5: The injectables, they have to be locked.

P3: Antibiotics any.

P2: Those are just procedures. It is not a law. They are procedures. Stipulated on storage of the drugs.

P3: It just came the other day. That is issue was maybe two years ago or three years. You didn't have that same?

P2: What i know, ever since i was employed, when the government was, the onous was on drugs. How they are being told to store drugs. And that's how we used to store drugs.

P3: Under lock and key.

P2: It is not something new

P1: And the oral ones

P3: The oral?

P1: Like the antibiotics maybe for the poultry.

P3: Did you have that scenario?

P1: You are not supposed to display it or it's supposed to be under key and lock.

P3: Ok normally the injectables were to be under key and lock. But that, there was, i don't know if it was passed or not. Let us leave it like that

P2: What you are saying is a procedure. You see with vaccines, the regulation stipulates, if you are keeping vaccines, yes you are connected to electricity, but you must have a backup.

P5: Yeah it is true

P2: You must. With a generator. And if you have ever visited [place] they have backups.

I1: Do most agrovets have a generator?

P4: For most cases they do

P3: Yeah they have

P4: They have installed solar panels.

I1: Oh clever. Oh that's fantastic. So that you could store vaccines?

P4: Yeah

P2: And what I can say about vaccines from agrovets, I have come across farmers who have administered, say Newcastle in water. And within a month or so, the bird succumbs to the disease. On enquiry, you find the procedure, how long has this farmer been in poultry farm business, and I learn the farmer is quite competent. So actually i suspected the vaccine efficacy was compromised, and this is because of lack of backup. So as for me and vaccines, a serious farmer, i cannot go to agrovet outlets privates for vaccines. Whenever I source, i will make sure there are backups. There are backups. Sustainable backups.

P5: Nowadays the KVB are recommending that we have backups, like in our case we have a generator and we have the solar. Because when they come to inspect they also inspect on that. They check on it.

I1: Well now I want us to focus on these [withdrawal periods] a little bit more.

So if together you were gonna come to a definition, so together i would like us, if we were explaining to a small or medium scale pig farmer what a withdrawal period is, what would we say? How would you explain what a withdrawal period is? Let's say this person has come to you and they have got a couple of pigs brand new, and they have never done any farming before. How would you explain to them what a withdrawal period is?

P3: Just use simple words

I1: What words would you use?

P3: This is the time limit when the drugs are still working in the body. The drug residues are still working in the body. Yeah, simple

I1: Ok so L said the time limit where the drugs are still working in the body. Any thoughts on that? Do we agree? Do we disagree?

P2: We agree on that

P5: We agree

I1: Ok, shall we settle on that as our definition then?

P2: That farmers definition

P3: I have just used

I1: For farmers. Yes that's what i want

P2: You should assess the farmers' background knowledge in extension and what she has said is the most convenient method to explain to farmers. Because <inaudible>

I1: Perfect, then let's go with that. Now i want on your sticky note, I want you to all write the proportion of veterinary paraprofessional who could explain what a withdrawal period is. So don't show eachother. On your stick note i want you to write a percentage if you can, are we all happy with percentages?

I2: Or out of 10?

I1: Or out of 10. Of what proportion of veterinary para-professional could explain what a withdrawal period is.

I2: Like one out of three? You mean that way? Proportion?

I1: Yeah

P1: I've not gotten

P2: So you want a percentage

I1: So, what proportion, so maybe 6 out of 10, 3 out of 10, half, most, not many, some of veterinary para professionals would be able to explain to a farmer what a withdrawal period is.

P2: So out of ten.....

I1: Are we all ready? Should i collect them all up? So E you have gone 5/10. Why have you gone 5/10? Oh we have a snap. 7/10. G 7/10. 9/10.

So who is the lowest. R and E you are the lowest at 5/10. Why do you think 5/10?

P1: I think, maybe along my years of working like a vet. Maybe i have been into several agrovets, maybe employed. So you learn that maybe your coworkers or maybe your partner is not that concerned about explaining to the farmers about the withdrawal period. So getting to my experience, that is why i have written 5/10.

I1: Brilliant. And is it that they wouldn't know how to explain or that they are not very concerned to explain?

P1: It is maybe some occassions, it is due to maybe that person being so busy. With several customers. Maybe you have like 3 customers waiting to be attended to, so you have like a dewormer. Like the piperazine. And you are supposed to explain to the farmer how you are going to dissolve this

with the water. And you are supposed to explain to the customer the same about the withdrawal period. But you see maybe if the person who is attending to the customer assumes. So this is for maybe example, maybe R is my customer. And she has 5 pigs. So i am selling to her piperazine or ascarex. So assuming it is piperazine. I say to her 100g of piperazine. This is enough for 5 pigs, dissolve in 20 litres. Yeah it is good. So that i can attend to the next customer. Others, it is just assuming. Just assuming.

I1: Ok i understand, is that what other people have experienced?

P5: I can agree with her. I have worked with a vet for some time and they are usually very busy. Most of the time they delegate the work to you, the animal health assistant. You do most of the work because they are very busy and they are not that careful. They are not that careful with the way they handle the farmers. So you see most of the time it is you, the animal health assistant, who is coming into contact with the farmer. So that's why i <inaudible>. They don't have that close contact with the farmer like us.

I1: Ok. Any thoughts on that? Ok, i have another one for you. Again, out of 10, what proportion of small to medium sized pig farmers are aware of withdrawal periods? So what proportion of small to medium sized pig farmers know what a withdrawal period is?

Cool.

Ok, E you have gone the lowest again at 3/10. Everyone has either gone 6 or 7 out of ten. Who would like to expand on their answer?

G do you have any thoughts?

P2: It should be the opposite. So proportion of small to medium. That is the small farmers <inaudible> the medium.

I1: Sorry?

P2: The question is, small farmers who service the medium. The medium farmers are much aware than the small. So it should be inverse.

I1: Ok so if you were just talking about small farmers, what would your number be?

P2: It will be 4

I1: Ok. That would be 4. And what about medium?

P4: Awareness of medium. Put at six. [But his previous was 7 so it sounds like he hasn't understood what a proportion is]

I1: Ok, any other thoughts?

P1: I would also change about the medium farmers. But the small farmers

I1: Small you think 3 but the medium?

P1: Would be 5

I1: Ok. Why do you think medium have better awareness?

P2: They consult paravets more often than small and medium. And their education background is in most cases higher than the small.

I1: Ok, cool. My last one. How often do small to medium sized pig farmers observe withdrawal periods when they give a medicine. And you can give a different number for small and a different number for medium if you want.

So how often do they follow the withdrawal period.

Ready? Great.

6/10 ok and small 3/10.

Thank you.

So you guys are saying that only 3 times out of 10 or only 6 times out of ten, when a farmer gives a medicine, will they not send the pig to slaughter within the withdrawal period? Yeah?

P3: I don't, I am

I1: Are you saying that for small sized pig farmers, when they give a medicine, only 3 times out of ten do they wait the withdrawal period to send the animal to slaughter.

P1: yeah

P3: Yeah to my concern, small scale farmers, some do home slaughter. So at that time, some of them, let me say they are ignorant to observe the withdrawal period. But when you come to medium, some of them, most, the higher percentage, they will take to slaughter. Well there is a certain percentage they will slaughter at home. So that's why i will say that percentage.

I1: Ok. Any other thoughts? So that means that, let's talk about antibiotics because it is easier, that means that when a farmer gives a medicine, 7 times out of 10, they send the animal to slaughter before the end of that withdrawal period. Yeah? Am i understanding you right?

P3: Before the end of the withdrawal period?

I1: Yeah

P3: Ah no many. I don't think they do that. Because at slaughter they will observe. So those that don't observe, ok they do, I don't know how to put it. They do but there is a certain percentage that you know, when they know it's a, it doesn't have more of the supervision.

I1: Ok so let's say a farmer has given ten drugs in the last month, you guys are saying that seven out of those 10, or for some four out of those times they have slaughtered within the withdrawal period.

P1: I think for my case with the 3%. 3 out of 10. Assumingly a farmer gives the dewormers, and she or he is supposed to observe the withdrawal period, in case, maybe there is a market available between that time, assumingly he or she dewormed that pig yesterday. Someone pops in and she wants to buy the pigs for slaughter. She won't remember about the deworming. That's what i... i think it is understandable. Am i right?

P5: Yeah you are very right.

P1: They won't remember

P3: Or in the case of an urgency of money.

P1: She won't remember there was a deworming yesterday.

I1: That leads us perfectly onto reasons for not observing. So not remembering

P1: Ignorance!!

P4: Ignorance

P2: Ignorance from the buyer, the trader, and the farmer. Both of them.

I1: Ok. Any other reasons?

P3: Or in case there is a financial need that has arise them. Just sell it. Just sell what you have.

I1: Any others?

P1: Lack of information.

I1: To the farmer?

P1: Yeah.

I1: By who?

P1: By the vets or the asistance.

P2: The agrovet

P1: You find like some farmers, maybe ok let me say i get out of the topic a little bit. About the poultry. You are informing a farmer that you are supposed to deworm. And she is like, do the poultry have worms?

P5: Yeah they ask that a lot.

P1: So i guess they don't know that maybe that it is necessary to deworm the pigs and also to withdraw. So i think it is also lack of information to the farmers.

I1: Ok. Any others?

P2: You will find, if the pig, is sent in a withdrawal period, it is taken to local slaughterhouses, [LIA]. It is really hard for it to be condemned. So the farmer will realise, I sold my pig after a drug administration within say two weeks or so. Or one week, and they also <inaudible> so why not repeat. (01:33:00)

P4: So say for example, my pig. Because pigs are not sometimes wise, it happens to like break the leg. I would opt to just slaughter, without observing the withdrawal period because you know when it stays there it will not, maybe to lose the weight, maybe it is not eating. Or in the case it gets blind, you just sell it.

I1: Ok so salvage is what you are explaining? Or injury?

P4: Yeah injury

I1: And you were saying A, lack of regulation?

P2: When you talk of what i said, the regulations are not stict in the local. Or maybe they don't have equipments to go about the problem.

P4: Can i add an example. So maybe for example in the case that you are treating a cow, you know cows sometimes they rarely like recover. They don't, maybe you treat it, there are no chances of recovering. You just take it to the slaughter.

P3: Ignorance of a vet or of a farmer.

P4: No there it is about life or death. Because in death it has, you have lost it. So you say let me say, to hell. Let me just sell it to the abattoir serving the..

P2: You sell it to the public or, where do you want to sell?

P4: The slaughter

P2: Slaughter a dead animal?

I1: No you are saying before it is dead right?

P4: Yeah the farmer opts to like

P2: To?

P4: Sell it

P2: To who?

P4: You know....

P3: That comes in with ignorance. Now the farmer doesn't want to lose. Maybe he or she decided to slaughter for... i think that's what nani is saying. Which is, it is not allowed but

P1: It's what happens

P3: Some farmers they find themselves doing that

P5: They do, i have seen even when there is an outbreak of foot and mouth. They dispose the pig, they sell them because they don't want the disease to come. Come and infect your pigs. Because you know when it comes they will all die. So instead of waiting for the disease you just send them.

P3: So they go ahead and send them.

P5: Yeah because if you don't sell and the disease comes

I1: And the chances are that they might have had a wormer in the last

P5: Even it happens to poultry when there is an outbreak of Newcastle they sell their chicken.

P3: They sell them. Before the disease coming.

P5: Yeah

I1: Does anyone have anything more?

P3: Yes i wanted to add according to the season. We are heading to christmas. So they take advantage of a ready market.

I1: Because they will get more money if they sell right now?

P3: Yes and people are going to

P5: To feast

I1: Yes we are. Ok then, any others? Cool. So my last thing to you, what i would like you to leave me with. What are your recommendations for the future. So we have, i think had a lovely discussion, thank you. How do we move on from here? So if you were president tomorrow E. What would you do, what would you change? Or what could you do at your level to improve the situation in the future? So we have talked about the role of vets and paravets, we have talked about how small and medium sized pig farmers used medicines, and we have talked about whether or not they observe withdrawal periods. So especially with those points, but any points, how would you recommend we improve in the future?

P1: If i become the president, I would start with the vets and the para vets. To have regular trainings, of which we have. We do have the trainings. And try to let them understand the importance of communication to the farmers. And i would also organise some trainings for the farmers to let them know. Have the information about how they should look for the right information. You know some farmers they get misleading information from their partners or from other farmers. Which is very misleading. So, i think with that i could inform the farmers where they should channel their progress and where they should get the right information.

I1: And would that be information on medicines, withdrawal periods or would that be on anything?

P1: Even the management.

I1: Anything

P1: Yes

I1: On information management right? That they have a lot of information coming in and how do they decide what is good what is bad.

P1: Sure. And i would, i remember when we were training, like myself when i was training, and when we were getting attached to our seniors. So that time we used to have extension workers. They used to go to farms to even the small-scale farmers. And it is free. They are in the government. They give the right information. They even deworm. They give that information about the withdrawal periods. And i think it was working well. Although nowadays. I don't know dakteri can tell us about that. But i don't think the extension workers do go to the farm visits. Which was a good idea.

I1: Any other thoughts? Who wants to be president next?

P2: I will. With farmers who have not got a nutrition background, i normally advise them, in their homes you find they have wifis. And android television. To be googling on issues concerning their pigs. There was one farmer who had reported to me, who sent me a photo of his pigs. I suspected african swine fever. And even i could not visit that homested. Due to biosecurity. I advised her to google on african swine fever and biosecurity. So i am entertaining for all farmers who have gadgets to be going on google.

I1: Fantastic. Cool. Any other thoughts? Any other recommendations? G do you want to be president?

P4: I would love to be

I1: What would you do?

P4: First and foremost I would like streamline the agriculture docket from the top to bottom. That such, what do you call them, they come up with the, farmers would be helped so such things should not arise.

I1: Ok so the whole agricultural process, you want to streamline.

P4: Yeah

I1: Anyone else. L you looked like you had something on the tip of your tongue.

P3: Yes. On top of that, what G has said. In role of vets and paravets. I want to introduce KVB in there. When you come to the agrovets, there are many quacks who are operating there. If that person is not knowledgeable, doesn't know anything to do with withdrawal period, how will that farmer, the person who is selling to, will know. So we eradicate quacks with the help of KVB. The other thing is on google. When you come to human medicine, not everything that is put on google. But when you come to veterinary, many things are being exposed there. So we control what to put on google and what not to.

I1: Ok, so you are saying that google can be a useful tool but also could be dangerous if the wrong stuff is on there

P3: Yes

I1: Any others? R do you want to be president next?

P5: I think the farmers should be enlightened. These farmers trainings, and you see it's like, i am not saying the government hasn't been trying. It has been trying especially with the KVB. But there is a lot that farmers are not aware. And i think also, i can say poverty is also contributing to it. Because most of the farmers keep the pigs as their source of income. Most of the farmers who are doing pig farming are not employed. That is their only source of income. So if the government can empower the farmers it can help.

I1: OK, great. Does anyone have anything to add to our discussion? Is anyone thinking of any of these issues differently after having our discussion? No. Cool. Well thank you so much. If no one has anything to add

P2: May i talk of laboratories. Because most farmers don't use laboratory facilities. They are very important. Yeah.

I1: To make them better? What would you like to do?

P2: You say, in the cause of treatment, sometimes you may recommend samples to be taken to a laboratory. So the issue with taking samples to laboratory. It is not taken seriously by paravets and indeed the farmers. Yeah everything.

P5: It is true

P1: Very true

P2: So in future i would like where one is treating <inaudible> and the response is not coming, should think of taking specimens to laboratory in [place]. Not only in pigs, all the animals.

P4: To sum this up. I guess the whole agriculture docket needs to be, it needs to be refurbished. It needs to be cleaned. Because it is, from the word go, this is very, what do you say complicated.

P2: Talking more beaurocracy

P4: Because you lack, there is not enough staff like, extension officers. The government need to have extension officers so that they will go to the field and enlighten the farmers. Maybe in what you were saying on the use of medicines, proper use. Vaccines for. There is no like communication between the government and the farmers on the ground. So

P2: When you talk of government, in veterinary, clinical practices is privitised. That is a private entity. Actually today in veterinary government office, it is an issue of policy making and <inaudible> and co-works - vaccination and meat inspection. When you talk of extension, the private personnels is well armed with extension knowledge and should do it at a fee. But in government what we do, if there is an issue we want to get extra farmers, and that might be a big issue. The farmers must be in a gathering, a big group, not individual. Yeah, government staff will not do extension work on basis of individual. <Inaudible> So you see, that is the operation nowadays of the government. So you see private practitioners have a very big role in veterinary animal health and production.

P3: Yeah that's why we are saying doc, that big role left to private, they cannot be able to perform it efficiency. We still need collaboration and joining hands with the government. The earlier we had staffs from the government. Yes as a government you cannot go to individual, because you cannot finish. Even a day you cannot visit more than 20. You go to groups. Now if the government can employ more staffs, the work will be easy. Because farmers will be more knowledgeable. Even what is going on around the pig farming. Even when the private are attending to those farmers, the work would be easy. Because what you will say, they already know. You are just topping up. Or you are just clearing something they didn't understand well. So that's what i think we were saying that, the whole, you have called it agricultural what?

I1: Docket

P3: Docket

P2: I agree with you on issues of staff.

P3: yes

P2: And authorities. If you can visit the agricultural livestock budget, from a national survey. It is so small. The budget is so small. If you go to county governments. I don't think we have any budget of value for agriculture. yeah it has been neglected. That is why you are coming in. At government level our veterinary services are not well pronounced. You see. Compared to health. We have employed a number of <inaudible> 20, 30. I should say in veterinary, if you ever be employed. Either, there is a <inaudible> where there is income. Or there is a shortage in slaughterhouses. So you get employed and you are reserved for training and you are reserved to do meat hygiene. There then you will be posted to slaughterhouses, not to the farmers.

P3: That's what they are doing now.

I1: Ok.

P2: <Inaudible>

P3: That is the real situation kwa ground

P2: And that is what we are suffering. There are policies but i don't think they are well funded. We haven't got good policies.

I1: Ok.

P2: I don't think they are valid.

I1: Well thank you so much for all of your thoughts.

### **Focus group discussion vets**

I1: That is now recording. Would you charge more than an AHA? You don't have to answer

P1: Definitely yes. We do.

I1: Do you know how much more?

P2: It will depend with the case you are dealing with

I1: Ok so maybe all the farmer would notice was that you are hopefully more knowledgeable and maybe charge more money? How would the farmer know whether you are a vet or a paravet or would they just not?

P3: Now, in some places they know the vets are registered. So they may ask for a card, a KVB card. To identify yourself. I would say most of them don't know. Probably they would look at the quality of the work. How you handle yourself, and they may say that you are a qualified person in your service, or you are a quack. Depending on how you act. So there are different perspectives for the farmer. There is also the issue of, there are some farmers who want very cheap service. They may not get from a surgeon, they may not get from an animal health. But they will get it from a quack.

I1: A would they know that this person isn't qualified, that the person is a quack?

P3: With time they get to know of it because of, you know most of these private vets, myself i am employed by the county government as a supervisor. But those private vets, and the government vets in my sub-county. Even us probably sometimes we are not able to know exactly who is who. Because you know those people graduate every year. But mostly i find like the private practitioners are usually, farmers usually know them by referrals. You did a very good work, and the farmer was very happy with your work. So they will always say, just call so and so. He does good work. So eventually if you are a quack, even if the government has been a bit slow or our regulatory body has been a bit slow in regulation, farmers will eventually eliminate you and that way i think we haven't been properly regulating the quacks versus the trained. But eventually the farmers kick you out because you can't survive without being caught.

I1: So it almost self-regulates. That's cool

P1: Yeah that's true. I am speaking specifically for my sub-county. For the vet surgeons, we are few. Especially those in the private practice. So literally, one we know each other. So even the farmers know. We are not many. So they already know.

I1: Yes and you all know each other so they would say 'oh i had this person out' and you would say 'they are not the real deal'. And so what is the ratio, so one private vet to how many animal health assistants?

P2: It is impossible to know that.

P3: Let me talk for my subcounty. We have, it is, we have livestock, in terms of cattle farming and pigs. We have a very big population, actually the cattle is <inaudible>. So we have a lot of private

vets. And private practitioners may be vet surgeons or para-vets and you can't know who is who. You only see motorbike passing. You only know them by the measure of

P2: The measure of the bag

P3: So i have not been able to supervise them. And also the KVB has not completely helped us to see how we can supervise them. But i always hope because, there is a way we are regulated by the KVB must be maintained in the veterinary register. So, even if we may not be up to date knowing who they are, eventually, one way or the other, KVB will catch up with you or the farmer. So we cannot be able to, like now in my place, we are like three vet doctors against over 100 professionals practicing.

P4: So as my colleague says, for the numbers, maybe big. Let's say I have been to [place] here. I have been a lecturer here for the last about, 15 years. And we graduate about 100 per year. We have a sister college in another county. Domba graduates about almost 150 to 180. Per year. We have \_\_\_\_\_. \_\_\_\_\_ was small and it was graduating about 80. So that makes about 350 almost. Per year. All these people, they come from all over Kenya. But you will find that some places in Kenya, we don't have much practice. So you will find half of this will congregate to Kiambu. And the neighbouring problem, \_\_\_\_\_ there are few. But half of these are in [place] area.

So you find that, I am in .....

P4: I am in [place]. And before i moved to the <inaudible>, i used to be the [identifiable]. Before the county. And I would say i was only, we were only two vets. Against over that time, I used to come up to [places] one division. And you will find, what the quacks do, or, those who don't want to go through regulations. They move from the area with the vet and go to the next place. So they used to, i used to have all of them in [place]. Because i am [place], the office is in [place]. So you will find everywhere there is a vet, you may find they move out to the other areas where the vet, the surgeon cannot get there or where the regulations are not very tight. Because regulations for KVB are normally tight in the big towns. So the numbers they vary every year and they go by the work in the area. So when there is such way, you find now there is so much of the malpractices, there is another complication among them. They may not compete with the vet surgeon, but they will compete among themselves. So the more competition there is, the cheaper their charges and the worst their service.

P3: That is what is happening.

I1: Of course and then it pushes your prices down.

P3: That's a very true point because that is what has happened. In \_\_\_\_\_, i have always known some, there is like some practices which are like standard, that if you remove an afterbirth, this is how much you charge. I found in \_\_\_\_\_ there was far much lesser than what you guys have. Because now if you don't do with the money the, now the farmer dictates the price.

I1: Because they say oh i can get this cheaper

P2: For some common services.

P3: But now they are now, at least it is a proper balance. You find a vet has a word. But now when we are so many in one place, the farmer now becomes the boss.

P2: Especially when the farmers want cheap services.

I1: Yeah, what are you supposed to do.

I think let's start. Nick what I am gonna do, I am gonna give you these consent forms. Because this is recording, they can't come into this room until they have signed this. So if you wouldn't mind getting them to sign it outside. Thank you so much. Is everyone ok if we start? Because I know you are very busy people and I don't want to keep you for too long.

Thank you so much for joining us today, for what I know now will be a really useful discussion for me and hopefully enjoyable for you.

[Explanation of ground rules]

Let's start by introducing ourselves, so if we go round the room and briefly introduce ourselves.  
[Identifiable]

P3: [Identifiable]

P1: [Identifiable]

P5: [Identifiable]

I1: Oh congratulations.

I1: And proportion of your work that is with pigs?

P5: Yeah

P4: [Identifiable]

I1: Very good, good to hear that.

P2: [Identifiable]

P6: Morning, good morning to you. All of you. I have to first apologise for being late.

I1: Not at all, you are not late.

P6: [Identifiable].

I1: It's such a pleasure to have you all here. By total accident, i will admit, i have collated such an amazing variation of experiences and that is exactly what we want for everyone to bring their own expertise and their own stance and their own opinion. I said at the start, there is no right or wrong through this. I just want to hear your experiences and your opinions. Is it ok if we start?

A quick question here to make sure that we are all on page, for the rest of the focus group. To make sure that we are all talking about the same group. So first of all i want to get from you, which farmers sell to which abattoir. So we have our two most important abattoirs i feel in this area. [LIA] and [large integrated processor]. So i'd like to know which farmers sell to [LIA], which farmers sell to [large integrated processor], and which sell to a mixture of the two.

P4: You want to know why they do [LIA]. In [LIA], why they take them there. One, they don't have a number or a contract with [large integrated processor]. You need a contract. Two, the type of pigs you are rearing. Are they the quality that [large integrated processor] need or not? They will not take everything. They have their standards. From 56 kilos 25. That's the best price. Below that is less. Below 56 kilos is less. After. Past 85 is also a lower price. So if you have such kind of, even if you have a contact, you have such which don't get the standard there, you will not take them there. You will take them to [LIA].

Three. We have some types like the mothers, the sows. Which are, now we cannot, they are not useful to you. You'd rather take them to [LIA] rather than [large integrated processor]. Because they are overweight. They are not fetch any money at [large integrated processor]. But that is the

I1: That is the why

P3: There is still another explanation, sometimes we find like [large integrated processor] is congested and your pigs are ready. You are doing your calculation and you cannot keep them for another extra day and the delivery for [large integrated processor] is far. So there are farmers who opt to source for other market. Because of the extra costs.

P2: And also, can i add something? [large integrated processor], they have contract with their farmers so they provide the feeds and some other, they do regular check ups. But farmers mostly from [LIA], they have opted for some other means of feeding. They feed different things.

I1: Ah like what we were talking about with supplementation. Right.

P2: Then the numbers also. The numbers they keep.

I1: Ok so, I'm really happy with the why then. So who sells where? Were you just about to tell me that different, people with different sized farms sell to different places?

P2: Yeah

I1: Ok so who sells to [LIA], who sells to [large integrated processor]?

P5: Mostly the small-scale maybe 5 pigs and below to [LIA]. Then the ones with large numbers, they tend to go to [large integrated processor] because they have a contract.

P3: There is still another pig market called [other LIA]

I1: Yes which is fairly new right?

P3: mm

I1: Which is similar to [LIA]?

P6: Yes similar to [LIA].

I1: Cool ok well let's shove those together. Brilliant.

P1: So in this case [large integrated processor] we talk of mid to large scale. So not necessarily large scale.

P6: Yes mid to large scale.

I1: Great. When we are talking large scale, how many pigs?

P3: I'd say 5, because I have seen farmers taking 5 pigs upward, because in \_\_\_ we have farmers who take 8, 10 in one batch. So we can't really have a definite, but they range from maybe 5 to say 100.

P6: Even more

I1: Is that per batch? Or is that on the farm?

P1: Per batch

I1: So how many pigs would that be on the farm? Would you call large scale?

P4: I know of farmers with as many as 1000 pigs.

I1: Ok, so what is the minimum number of pigs on the farm that you would call a large scale pig farm?

P1: Let's talk of 200

P6: 200 yeah

I1: 200 ok. And what about medium scale?

P3: 200 downwards to maybe 50.

I1: Great, I like that. So small-scale goes to [LIA]. Large and medium scale go to [large integrated processor]. Does anyone go to both?

P3: Yeah

P1: The sows and the boars.

I1: From both of these? From large and medium?

P6: Yes

P3: From both sides you can take sows, you can take boars. There is something else we have not added here. Disease condition. Disease condition. You will not take anything limping to [large integrated processor].

P6: [large integrated processor] yeah

P1: So basically [large integrated processor], they set their standards and they stick by them because they are a very professional body. So the idea, they ensure that everything is done as per the programme. Yeah.

I1: Yeah

P3: It's something I find now. Our farmers are also getting tricky on marketing. It's like one farmer get the order from [large integrated processor]. And then he collects two pigs from this person, another two pigs from this person, so if like he has an order of twenty, only 8 are his. So what they go do, because they are friends. They visit and pick two from one farmer, another two from.... so it's a very dynamic mode of marketing.

P1: I think i have witnessed that and it is basically a market availability strategy. If you have been a medium scale pig farmer, you had maybe 50 or so pigs, but you release most of your pigs to the market, specifically [large integrated processor], so when they make an order for the next and don't have the numbers, maybe they want 20 pigs. You just reach out to the small scale, they bring all the pigs to your farm. So when the [large integrated processor] guys come you are like 'here are the pigs'.

I1: Here are the pigs

P1: Yeah you pick the pigs and you slaughter the others.

I1: That's incredibly interesting and we will pick up on that later. Ok. That's brilliant. So from what you are saying then, some small-scale farmers also sell to both.

P2: Yeah but indirect

P6: Indirectly.

I1: Mainly indirectly rather than directly?

P1: Mm

I1: So then, talking about that group that sell to [LIA], what i want to talk about next is why that group come to you for advice. So when they either ask you to come to their farm or just talk about advice, or even from your experience when the farm calls you in and says 'we need some help'. Why are they doing that, why do they need you?

P1: Maybe as starting, you go for the housing first. How are they going to house their animals. The next thing, when they are established, they look for a vet to be at least, they will be looking at the conditions on the farm. Not necessarily sick animals but <inaudible> but to have a chat with him on the farm, give her advice on problems, how they are managing the feeding, all those things on the farm. How to avoid, at least to control the diseases. How to control.

I1: Ok so if i say routine disease control? What i should have said at the start actually, i want these flipcharts to encompass our discussion. So if i start to write anything and you think i have misinterpreted you, then please say because i want all our thoughts to be on here. So routine disease management, would that be appropriate or something else?

P3: Disease control

I1: Were you about to say something?

P2: Yeah i wanted to say about they ask for advice for the prices. The market is.

P6: The feeding

I1: Oh price for feeding?

P2: No price for pork.

P6: Price of the end product

I1: So what price they should be selling at?

P1: Routine husbandry practices.

I1: Ok. Like

P1: Here we are talking about things to do with

P2: Control of parasites

P1: Yeah parasite control. Deworming

P3: Castrations

P1: Yeah

P3: Tooth clipping

P6: Tooth clipping for the piglets

P5: Production

P3: Breeding

I1: In terms of production, what do you mean?

P6: In term of breeding

I1: Cool. Anything else?

P3: Biosecurity issues.

I1: Have we got it? What about actually sick pigs?

Many: Treatment

I1: Treatment ok. So, taking these, which is the most common? To get a call or to be asked to give advice on. Which do are you asked to give advice on most often?

Many: Routine management

P2: And treatment

P6: And treatment

I1: About the same in terms of frequency?

P2: Routine is more.

P1: Routine is more because treatment is on needs be basis.

P6: On needs be basis

I1: And when you are talking to pig farmers about this, so about this treatment, what are you talking to them about? If you are instigating a treatment, if you are saying they need to do a certain treatment, or you are doing it yourself, what topics will you cover in that conversation.

P2: Well mostly they tell you what they are seeing. They call you, they tell you my pig is not feeding or is behaving like this. So now you have to go there and do some observations and come up with the conclusion of our ideas. Then to tell him or her, I am treating this disease because of this and this and this. So you are the one treating it, not advising him on how to treat it.

I1: Ok and when you either hand out a medicine or inject with a medicine, what kind of topics do you want to cover then?

P1: As a senior vet, whenever i sit down with a pig farmer to advise, i mostly advise on a preventative approach. Because I always tell them the more i pay you on your farm, the most losses you will make. Cause i am a professional and i charge properly. So i always advise them to, so basically the idea is to advise them about the preventative approach to the various common pig diseases. Such as swine dysentery. Basically the hygiene related diseases. We are talking about dysentery, diarrhoea, the skin conditions. The pneumonia.

P2: Coccidiosis.

P1: Coccidiosis. You know those preventable conditions. You tell them if you do this you gonna end up with this. If you feed swill and the swill is spoiled or is stale, you gonna end up with food poisoning and this kind of situation. So the idea we always advise them to maximise on the preventative approach so as to avoid those diseases.

I1: Ok that's amazing. That's so great to hear. And when that preventative approach goes wrong, it is too late for preventative, you have to give a medicine. What do you talk about?

P2: I am not getting you. You are talking about the conversation we have with farmers?

I1: Yeah so you say, so i've just injected your pig with penstrep. Are there any things that you really want to cover in that conversation?

P3: The treatment depends on the condition that is seen on the farm. So is it advice or do you choose a different dawas, or drugs.

P4: Do you ever tell them about, it's very funny because now me i am listening to like the pig farmer. Do you ever tell them about the withdrawal period, like if you are treating growers or finishers and they are going to the market. Do you advise them ever, even though we treat, let's say they have pneumonia so tylosin, do you ever tell them, they can't go to the market or...

P1: Yeah we do.

P2: When you are injecting you are advising him or her about the withdrawals or maybe the condition. Maybe you separate the sick ones from the healthy ones. Basically advising on the questions that will pop up from the farmer.

I1: Ok.

P1: Yeah and i think that's where the farmers get to know the difference between the professional vet surgeon and the others.

P6: And the quacks.

P1: Because for us, especially one who has been in the field for long like me. In addition to the injection, i will be able to give strict advice, both verbal and in written, cause for me after every treatment i give a written document of the treatment. Look, there are too many flies in this pig farm. Please do this. You do this and that. And you do them in written form. So the farmer is able. So, for those that follow that advice, they see a difference. If i tell them isolate this pig and this one here. If i tell them next time, ensure tooth clipping so that you avoid this biting. And all that. Cause those ear abscesses that are common in pigs. Before you know it you are handling a lot of haematomas in a farm. So, in addition to treatment we also ensure that, give advice. And for me i do verbal and written. And ensure that indeed they follow up that.

P3: Maybe i just add a, what you have seen because i almost wanted to say something similar. In the breakdown of the drugs you have used, for me as a vet i have never seen the necessary, that idea of sharing what antibiotic to the farmer. Because in the first instance she doesn't, or he doesn't know those antibiotics. So in terms of medications, that one i don't share with the farmer, i have given this drug or the other or whatever. But what i do, as per the case, and per the need and per what has caused it, I will do an elaborate explanation, of what i have seen, the vital parameters i have found, and what has led me to use this medications. But i don't bother to give the names or the brand names.

P3: So that one is like my own, but if she has a record, i do write in the book. Because you find like in some farms there are books where you write the treatment you have done. I always write even the drug i have used, the dosages i have used. If there are withdrawals, i tell them and i record also in that book. The other thing i wanted to say is, farmers are also very tricky. You start telling them the brand names of those drugs, and then the next time the buy it.

P6: They get it and they treat for themselves.

P3: And you know it could a different condition. He goes or she goes to buy the same. So when he has messed is when he is calling you and the farmer is telling you, i have used this drug and it is not working. Then you remind him this is not the condition like it was the previous one. So that's why i have found me sharing drug names and all that. It's no no.

I1: And that's because farmers can go to an agrovet and buy what they want to buy

MP2: Yeah they do, they buy over the counter.

P3: That is very true. What she is saying. Because once you start giving the names of the drugs, they go for it themselves. And they start treatment. Sometimes it is not even them who are going to treat. I have a case where i had a controversy with the farmer because i refuse to give the drugs, the name of the drugs that i have been using, that i have used on some piglets which were dying. And there was another batch now of piglets, which she needed to treat. And i told them, if you don't want to use me, you can use another vet. I am not giving you the names of the drugs. And that was something very bad to her. But you know the problem is, she will go to the next agrovet. She will not buy from mine. She will go to the next one and she will be given anything. And because i knew, she was not the one, she was not going to use the vet. So was using the farm hand.

P3: That's what they do

P3: Which was an illiterate man

P6: [Chuckling]

P3: So the other thing is the price, the cost. They think that they are going to use a vet, they are going to incur the charges for the vet. They want to avoid that. The other thing is about now, like in my place we have, what do you call them. Social media farmers. The internet farmers.

I1: I like that phrase.

P3: The google thing.

P2: They have a condition and then Dr Google gives everything to them.

P3: And they want to use what is there on the internet. They even want to buy and call you

P2: To inject

P3: But i will refuse to do that. I cannot do that. If you are going to google and buy the drugs you are not going to use my service. So i am very strict in my practice. And they know it.

I1: That's fascinating.

P3: That's why they go know to the quacks.

P4: And there are many quacks in the groups that I am in for pig farmers. Wooo. The advice they give. We try to tell them, get a professional vet. Eh the quack is there. Nobody can treat. I can't treat.

P3: There is also an issue, though i feel there is an issue of the regulatory body. There are so many graduates. Ok because they come for internship and you find they are... But there are those other courses that are giving advice on animal health. And when those people graduate, instead of focusing on their major

P6: They are using that small knowledge that they have got on animal health.

P3: I think it is the level of unemployment in this country so you know you also don't know how to

P4: But they charge so less. And the advice they give

P3: Have you seen that issue? Because there are so many other colleges that have a very small topic on animal health

P3: These are normally agricultural colleges. Where the main thing is about agriculture. Crops. But they have some topics about.

P1: Just a unit

P3: When they come out, there is nothing to do with crops. They go for animals. So those make the bulk of the quacks. The other bulk of the quackers is the workers who work in your farm and my farm. When they get out from your farm, because they have been handling the pigs, they also become professional vets to treat piglets. I know, i am also a pig farmer. And i know how they behave. Like the one we had a controversy with the farmer is a worker who has been treating animals, even other people's animals. The good thing is that they don't treat the big ones. Most of the big pigs do not get sick easily. They are hardy. They normally had the piglets. So that is the issue of quacks. We have a big, big chunk of them. And they have outnumbered vets and the farmers want to use them because they are cheap.

I1: Can i just ask for a show of hands. If a farmer had a medicine record on farm, so they had some kind of sheet of paper that had the medicines that they use on farm. If you were treating pigs on that farm, would you write what you had treated with in that medicine record given the conversation we have just had. For yes can you put your hand up. So that was one hand for my dictaphone. And for no. Did you understand me?

P2: I wanted to say that i usually write receipts and that has the medication that i use.

I1: Ok so the medication will be on the receipts.

P2: Yes

P1: Also, now that i am only one let me just clarify why i would write. I think, i just want to add another voice on what my colleagues have just mentioned. The issue of when you mention the trade name, the farmers pick up and they misuse later on. Over the years of practice and since i have found a way around that problem. What i write on my case number sheet is the active ingredient. For example the common drug pen-strep. That is the name, you go to an agroveter you mention it. Everybody knows. But what i write on the sheet is dihydrostreptomycin plus penicillin G.

I1: Clever

P1: He will not get that. So if i use noroclav i will write the amoxicillin clavulonate. So he will not get a thing

P3: That one is very technical

I1: That is very clever

P1: The advantage of that, when i have done the treatment and perhaps the pig hasn't recovered and the farmer calls back another round. He will call my friend who is a doctor like, can you come. This pig had gotten treatment and he will give the record. But my colleague knows that i had, this is a

long name but it is simplified it to penstrep. So the advantage of that is that my friend will not use penstrep. He is not, if it has not responded to penstrep, i definitely need to move to another, stronger antibiotic. Yeah but the farmer won't know what dihydrostreptomycin plus penicillin is. It has worked by the way.

I1: Well on that note, hold that thought because i want next to know the types of medicines that you use on these farms so these small and medium sized pig farms. On your sticky notes, in private, I would like you to each write the top three drugs that you use for each category. So on one sticky note the top three dewormers that you use, and you can number them 1, 2 and 3.

P1: Trade name or active ingredient?

I1: Up to you. On another sticky note the top three boosters, on another sticky note the top three antibiotics and on another sticky note the top three others. If you only have one or two that you use, don't feel like you have to have to write all three. And if you could write in your coloured pen that would be brilliant. Thank you. So while everyone is finishing, how do small to medium sized farmers use dewormers? How do they use dewormers?

P2: Who the farmers or us?

I1: On those farms, how are dewormers used? So either by you or by the farmers. So at which points will they deworm, which pigs will they deworm, how will they do it.

P3: Can you repeat the question i have not gotten it

I1: What i want to know is how small to medium sized pig farmers use each of these categories. For example for dewormers, when would they use them, would be it just after when there is a clinical problem or would it be routine. Which pigs would receive, how do they use.

P3: Ok usually what happens there is the deworming programme. Farmers deworm pigs is it every three months. Or there are others who will do after a month. Especially when they have reached the age of almost maturity.

I1: Ok

P3: But that will depend on a farmer, from one farm to another and also depending on what you are feeding.

P1: Yeah basically it depends on the level of seriousness of the farmer. Of course in certain circumstances you can just be called for tooth clipping and as a vet. You look at the piglet and are like no, these piglets have so much diarrhoea you need to do something. They need some dewormer. So that's when they think of when to deworm them. Or maybe you ask 'when did you last deworm this' he's like 'oh i can't recall maybe it's due you need to do it'.

I1: Ok and did everyone agree with that? Yeah. Cool. Ok then how do they use boosters?

P2: Most of the time they go hand in hand with the deworming.

I1: Ok so when they are deworming they will also use a booster.

P1: Yes yes yes yes

I1: Ok, antibiotics?

P2: When there is an issue

P1: On a needs be basis

I1: Just when there is an issue. What were you about to say Dr Sam?

P5: It depends on the condition of the pig. In cases of sickness, it's antibiotics.

I1: So only in case of sickness. To prevent sickness?

Many: No

P4: To treat

I1: Just to treat

Many: Mmm

I1: To improve growth?

P4: No, never

P1: Actually. There is yeah, we use tylosin

P4: To do what?

P1: To improve growth in pigs

P4: That is to treat

P6: Even in the farm animal feeds, that do put in the antibiotics

P1: Tylosin is a <inaudible> growth boosting in pigs

I1: In some feeds? Which feeds?

P4: Which ones?

P6: Well you wouldn't know but they do. Because you know antibiotics will enhance the growth of the pigs

P4: That's true.

P6: And will help convert the feeding to weight mass. And you are looking for weight. So most of the animal feeds they won't tell you, but they do put antibiotics.

P3: Feed nini, feed companies.

P6: Yeah they do

P2: Maybe most of the antibiotic of <inaudible> that we use, most of them which are sick, to prevent coccidia.

P1: Coccidia. So basically it is a coccidiostat.

P4: Eh coccidiostats

P1: For the pig growers.

P4: No the weaners.

P1: The weaners mash. Cause you know immediately after weaning their immunity is a bit down. So they need that coccidiostat. So that is the most common in terms of antibiotic it's the coccidiostat.

I1: Ok and that would be, how would that be given?

P1: Just mixed in the feed. So they consume it

I1: So bought from the agrovet in a powder?

P4: Yeah

P1: No it's already mixed

P4: In pigs?

P2: It is already mixed in the feed so it is in powder form

P1: Yes even for poultry feeds you see the labelled very well with coccidiostats.

P4: With pig feeds they have coccidio?

P1: Yes

P4: Which ones?

P2: Some companies

P4: Which companies? I want to know. I have never heard.

I1: Ok. But in your experience it would be labelled.

P1: Yeah it would be labelled

I1: In your experience it might not be

P6: It might not be.

P4: And then you mix for the farmer you tell the farmer what you need.

P6: There are times that you give a certain feed to the pigs yeah. And then you change. And then you see a relative big change after you change the feeds eh. You say food from a certain company, the pigs are growing very fast. You should find out why. Yeah they do.

P3: But from me now from my other understanding. It could be the feed that the pigs are growing fast has higher level of protein and all that.

P4: True and energy.

P3: Rather than the antibiotic.

P6: It could be

P4: Most of the time it is energy

P2: Well formulated.

P6: It could be well formulated and they could have, you know they put it at a very minimal percentage that you won't know but it does. They do. But you won't know.

P4: Which company? I have never heard

P3: It is something to find out.

I1: I think we can agree to disagree in terms of experiences but that you that's amazing. Yeah because i haven't seen food labelled on farm as having antibiotic in, but yeah. Ok fantastic, that is so helpful. Next, I would like... If you, following on from our conversation a little bit earlier. If you had to explain to a small or medium sized pig farmer what a withdrawal period is, what would you say? How would you explain it to them?

P3: Basically the withdrawal period is the time given erm, for example if i give pigs, the product is pork. So the withdrawal period is that time, you cannot sell the pigs because already the antibiotic is still there. You have to wait for that given number of days written by the manufacturer of that medicine, er for example, i give an example with ivermectin. They will say withdrawal period is 28 days. So it will be injected today, you must count 28 days before you sell the pigs. That is how me i understand it. Maybe somebody else may have another understanding.

P5: That's nice.

P2: So I tell the farmer you are not supposed to use any product of this animal for this period of time.

I1: And what period of time, so do you give a period of time for all products?

P2: No, no. For antibiotics I give 7 days.

I1: 7 days. ok

P2: For the ivermec, 28 days.

I1: Ok, so for any antibiotic you would say 7 days.

P2: No, ok for the ones that i use mostly it is 7 days.

P3: Usually every bottle of an antiboitic depending on what classifications, there is a small leaflet that shows you the withdrawal period. So actually even when you get the leaflet, you can show the farmer. If it is like mastitis, let me give you examples with a cow now instead of a pig. You have like mastitis and the cow has gotten well but the milk is still very clear, but it has antibiotic. So from that leaflet you can know, even if the milk is white. How long can you take for that milk to be consumed? So there is usually a leaflet on every drug on the withdrawal period. So it's not even, my suggestion is what the manufacturer has come up with after their research. And basically those are ethics we are taught at university. They will never leave without, we follow them very strictly.

I1: Ok, so using that explanation. What proportion, so let's say how many out of 10, of veterinary para-professionals could explain what you have just explained, so could explain what a withdrawal period is. I'd like you to again, use your coloured pen. Write on your sticky note, don't show the others. Out of 10, how many veterinary para-professionals, so animal health assistants, would be able to explain what you have just explained to us.

P4: The numbers, out of ten?

I1: Yes so if you had ten veterinary para-professionals in front of you and you went down the line, and you said you, explain to me what a withdrawal period is, you, explain to me what a withdrawal period is.

We have got.....

None.

We have got everything from none, who is my none? Who is my green. To the highest being 7. So let's go from the lowest to the highest. Tell us, tell us more about your answer.

P5: According to my own experience, I have never heard any para-vet explain to the farmers what is withdrawal period. They just treat and go.

P1: I think he is very honest. Especially for pigs.

I1: Why especially for pigs?

P1: Erm cause most of the time we treat young piglets. And it would in fact take more than a month in the farmer sells the pigs. So logically even if you don't explain, he is not gonna sell that piglet in the next one month. It is like a sure bet, he is not gonna sell that. But still it is important to do, but they don't.

I1: Ok so it's that, so it's maybe not that they don't, would veterinary para-professionals know what a withdrawal period is?

P3: Yes.

P4: I am thinking they know

P3: They start at the colleges

P1: Definitely they know.

P3: Because when you tackle the unit on medicine, you have to be taught dosages, dose rate, dose of administration. Withdrawal periods. I don't see where a course on medicine can be taught and you leave out... so the information i know that they know. But probably application is what is not there. I think you taught. I think with medicine you must be told all that.

P3: I have taught pharmacology and it is all there. Withdrawal, dosages, when and where. All these are there.

I1: So they know, but in your experience, they don't often explain to the farmer.

P4: Because, there is a because that he gave. Because most of the time you are treating piglets. As he has said, the growers. They don't get sick so you rarely treat them. So you are treating piglets, you know they won't go to the market after one month. So what are you telling the farmer to withdraw from? To withdraw from eating the piglets which they are not going to slaughter it? So they just leave it.

P1: The issue of withdrawal comes more in dairy farming because milk is consumed. But for pig farming, the

P3: And also the eggs, you know also you have farmers, layers, with farmers. And you find you tell a farmer to withdraw 1000 eggs in a day. And then they follow?

P6: In most cases they don't. Even for the dairy. If there is a cow which is producing 25 litres. And you are telling this farmer not to sell that milk. Like most of them don't follow.

P2: Actually what they does, those for dairy, those for the commercial layers. They select those ones which have been treated and maybe the cow which has medication. They sell it commercially. Then for the family consumption, for the immediate ones, they tell...

P1: Anyway as an experienced vet, what i usually do, erm, i use the specific antibiotic which has got zero withdrawal.

I1: Oh ok

P1: Yeah there is only one in the market.

I1: Which is it

P1: Ceftionel. Ceftionel is the brand name.

I1: Which must be a third generation cephalosporin right?

P1: Yes, yes yes yes.

I1: Which then comes with... we shouldn't really be using because of antibiotic resistance issues.

P1: Yeah sure sure. So very rare occasions that is very rare.

I1: But if you are forced to do that because of a lack of observation of withdrawal periods then that's very ethically challenging.

P1: Yeah it is very challenging by the way.

P3: Is it all over?

P1: No no. Not it's not. Because even the drug itself is not common.

I1: Yeah i didn't find it

P3: You will not find it in the agrovets.

P1: No it is there, it is there. It is very much there.

P3: Some

P1: It is there but not common on agrovets. But i know it

P3: Where do you buy it?

P4: Tell us, please.

P1: It is an interchemi product. I think cepros has it.

P3: You say which one?

P1: Ceftionel

P4: Can you spell?

I1: Do you want me to write it on here [joking]? How do i spell? While you are googling i will show you your next question that i want you to again write in your coloured pen on your sticky notes. Out of ten, so you have ten small to medium sized pig farmers in front of you, how many of them would be aware of withdrawal periods?

No i didn't find that one. Ceftionel wow.

P1: It's a third generation cephalosporin from holland.

I1: So the number of small to medium sized pig farmers who would know what a withdrawal period is.

P2: Very simple

I1: Thank you, thank you, thank you. Oh ok. Zero. Really? Let me pick who said none. G you've said none. Why none?

P4: Um. They won't understand also. Aware of withdrawal periods in pig farming. As he has said you don't explain to farmers about the withdrawal period because the pigs are not going to the market any time soon so farmers are rarely aware of withdrawal periods. I have never had, in the groups i have seen, there is nobody who talks about withdrawal periods. Nobody asks which kind of pigs are you treating. I have never heard someone talk about withdrawal periods.

P3: The requirement is there, especially if you are dealing with farmers, [large integrated processor]. But as she says, it is rare because unless you are handling a disease condition like foot and mouth, which might affect the farm. And it is affecting really the big ones [pigs]. Or any other outbreak, otherwise, it's very, we deal with the small ones.

P4: The piglets

I1: What about wormers then so you have told me that farmers will routinely worm maybe once a month. If they have given an ivermectin. If you are on a farm and you are treating, if vets, including veterinary para-professionals are treating big pigs with ivermectin say, will they talk about withdrawals?

P3: Ok what i find, we do ivermectin at the early stage of life. Four months, thereabouts. But when they are approaching to be baconers, we give oral dewormers. And they have also a very short withdrawal period. So not unless, maybe now those quacks who go and use an ivermectin on pigs that are almost ready for marketing. The ones who are ok, they know where to apply this dewormer. When. And the withdrawal period would be able to be maintained.

P3: There are those special cases where you may use ivermectin in the big animals. In an outbreak of mange. Then it is rare unless it is a farm where the housing is not very adequate. There is a lot of, there are too many of them in one place. But they are rare cases. But in that case, if it is a professional doing that job, because the mange is too much, they have to use it, then you advise on the withdrawal. You have to advise on the time before you take them to slaughter. But it is rare. Those are farms where we would say they are not housed properly and the conditions is bad for them.

I1: OK. Thank you. I am gonna make you write for the last time. Finally then. Out of ten, for the last time. How often do small to medium sized pig farmers observe withdrawal periods when they give a medicine. By they i mean when a medicine is given on their holding. So by that I am asking, ten medicines have been used on ten small and medium sized pig farms. How many times out of that ten will the withdrawal period be observed. Meaning, the pig hasn't been sent to slaughter within that withdrawal period.

Do you understand what i am asking

P1: I understand but

P3: It depends on the size of the herd, the age of the herd

I1: Ok so just an out of 10 as best you can. When medicines are given, on small and medium sized pig farms, is the withdrawal period observed.

P3: You see, when you are dealing with a young lot of pigs. The withdrawal is observed by

P2: By default

P3: By the fact the farmer may not have the knowledge, but because of the time of the pig, the time the pigs will take, we may have done the withdrawal the right way. Not because the farmer had a choice. But because of the left of time. So that is why the question is a bit confusing. Because, by default, the farmer may maintain the rules of withdrawal. Not because he has the knowledge, but because of time. Then we have those other farmers where big animals, or rather animals reaching maturity are treated. I don't know how i find that question. Could we divide it into two, small pigs and large pigs. Because when we answer it that way i just don't find you get the right answer

P3: There are two answers there. There are two answers there. The small ones and the big ones.

P2: The ones which are ready to be taken to market.

P3: And also when they are big, it depends on the dawas you are using. I said about mange. If you think that the medicine is going to take too long and these animals are about to go, then you can use an alternative dip which should take a few days for the withdrawal period.

I1: So, yes you can split it but then i want the number together after. So split it for yourselves first. But then i want you to tell me how much of the time antibiotics are used on the small pigs versus the big pigs, how much medicine sorry are used on the small pigs versus the big pigs. So feel free to split it and we will put it together, together.

P1: My feeling is the correct answer would be a speculation. The reason being i go to a farm, make a treatment, i tell the farmer to observe this withdrawal period, then i go away. I won't be there to see. Because most of the medicine, particularly for meat, which is the case in pigs, most of the antibiotics have a 28 day withdrawal period. So i go to a farm, treat a pig, tell the farmer to observe a 28 day withdrawal period. A week later he sells i won't be around to know.

I1: No, I'm asking you to speculate.

P1: Yeah sure, sure

I1: I appreciate that

P1: So in this case you want our answer to be something like less often or 10% of the time.

I1: Anything. You might prefer this question. Which will be badly worded because i am wording it on the spot. Out of the pigs that arrive [LIA] on any one day, out of ten, which would have medicinal residues? Is that a nicer question?

P1: Mm that's a good question

I1: Ok we can do that one instead if we don't like the other one

P3: We do that one instead of the first one?

I1: Let's do it. If the first one isn't making sense, let's do this one.

P3: That is ok now.

I1: Ok let's do it. So you have got 10 pigs at [LIA] this morning. How many of those pigs do you expect have been sent within the withdrawal period of a medicine.

P4: I don't understand why, because i know most farmers still sell to [LIA] and they are large scale and they still sell at [large integrated processor]. Medium, people even with two sows, you still sell at [large integrated processor]. You mix with others, you sell. Large scale, medium. That is from a farmer who is taking pigs to [large integrated processor].

P3: I get her question very well. Because with [large integrated processor], you know they do not take pigs of a certain age and weight. So we only have baconers which fit in their classifications. The rest, like boars, mothers, which need to be culled, they are the ones that are taken to [LIA]. So for me now the question is a bit clearer than the first one.

P4: Makes sense.

P2: Maybe i can help her. Before you came, we had discussion the slaughterhouse and we had narrowed it down that we go to [LIA].

P6: They are talking of the ones that have been marketed at [LIA].

P4: And which ones did you say that get to [LIA]? The boars and the mothers which are culled.

P3: Do you need the first answer?

P4: And what else is taken to [LIA] according to you?

P6: They also do the baconers which don't meet the threshold for [large integrated processor].

P4: Like home much weight

P2: Maybe they are lame.

P6: Or they have disabilities.

P4: Did you even consider that in [large integrated processor], you have to book a date. Because right now they have booked until april. So right now i get baconers and i am a good farmer, i have to wait until april. And that is so long. So i can sell still my very very very good pigs, baconers, to [LIA].

P3: We still said that those markets they are dynamic, there is interaction.

P4: And you will also go to [large integrated processor] and find there are sows being sold there. And boars. Yeah we do, we take.

P3: Ah no no no. I am the one who is

P6: But the pricing

P4: Yeah the pricing is very low.

P2: But it is better to take them to [LIA]

P4: Definitely

P2: So that's what we were saying

P3: They pick sows?

P4: Even if they are

P6: But the pricing will be down

P3: In the letter of no objection it is written that they don't take uncastrated pigs.

P4: And when they pick they will charge you for it. There is an amount of money they charge you for taking uncastrated pigs.

I1: Ok. So we have established

P4: Oh the markets are inter, oh now I see

I1: Yeah so there are reasons why some pigs have to go to [LIA] or why some pigs are more likely to go to [LIA] rather than [large integrated processor], but actually it can go everywhere. We are focusing on [LIA], but i appreciate that it is not as clear cut as actually some of the previous publications have said that small go to [LIA], large go to [large integrated processor]. That's not what happens right?

So specifically talking of [LIA], if you had to put a number out of ten. How many pigs go within the withdrawal period for a medicine?

Five out ten. So we have got anything from five out of ten. Now if i just said antibiotic, how much would that figure go down?

P4: Antibiotics

P2: which antibiotic would be found?

I1: Any. Any residue above the legal limit.

P3: Why we are saying the residues are low, are because you are dealing with the big animals. Because there is very little treatment to those animals.

I1: Ok, let's move on. Why would a farmer not observe a withdrawal period?

P3: Lack of information on the same.

I1: So they are not aware. Yep.

P3: Economics

AIP3: Economics.

P3: Explain

P3: Because if they are ready for the market and you cannot keep them one more day, then they take it. To avoid the losses in feeding.

I1: Any others?

P1: Individual farmer attitude

P3: Ignorance

P6: Ignorance

P1: Because the farmer simply says to himself or herself that, after all, the pork won't end up on his plate.

I1: Similar to what you were saying earlier that they sell it commercially rather than eat it themselves.

P6: And ignorance too

I1: Ignorance from lack of awareness?

P6: Mm. There is ignorance and lack of awareness. The farmer could be knowing about the withdrawal period but just ignore.

I1: Ok so by ignorance you mean that they have chosen to ignore.

P6: Yes they do.

P1: Another reason may be the vet did not explain.

P3: We have farmers who treat for themselves. So the vet sometimes is not even appeared. But that self treatment, they will not read the label.

I1: So then that goes along with awareness and then potentially ignorance

P1: Some know that there is need for withdrawal period but they don't care

P6: Chose to ignore yeah

P1: Especially know that they are the ones who treated and they think that nobody knows. So

P6: Even at that point of self treatment they don't have the data, the dates when the antibiotics were taken.

I1: SO they wouldn't record

P1: No they don't

P6: They don't have records

I1: And actually, you don't really know

P3: What about the issue where they go for small doses from the quacks. <Inaudible>

P1: I think it still falls under self treatment maybe.

I1: Ok. I am wondering also, which i would love to run past you. Off license use? So if they are using a really wrong dose, the withdrawal period could be totally wrong. Is that possible?

AIP3: Mmm

P4: It's true

I1: Any one reasons you can think of? Either to not observe a withdrawal period or for there to be drug residues in the meat

P3: I think i have not understood your last statement.

I1: Reasons for a farmer not to either observe a withdrawal period, or for a pig to get to [LIA] and there are residues in that meat. Any reasons you can speculate which we might not have talked about. No. Nick did you have something to add?

I2: No i was wondering, in case it's not the farmer who is taking the pig directly, what about in the interface of the trader. Would the farmers still reveal that information. Just to prepare thoughts on that.

P4: The broker

I2: Yeah

P4: The broker don't ask

I2: They won't ask

P3: I am thinking, if you are struggling on the trader, it's the [LIA] now market. yeah? For them they just want the animal, they don't record, they don't ask you how you have been treating. They just, when you take a mature pig, the only language now is the cost. Not how the animal has been sick previously. You get? So it may even have been sick and there is some time of withdrawals, but as long as it is healthy on arrival, i don't think they ever think of trying to see, maybe at a government slaughter points. You find we have a meat inspector who can probably see if the animal was

P2: Injected

P3: Injection sites

P3: Otherwise the trader just wants to trade not know if the animal was sick or not.

I1: Fine, ok. Thank you. Finally then, i want to hear your recommendations for the future. So i have given you some possible ideas based around what we have talked about today. But actually it could be anything to do this pig farms, if you could change things, what would they be or what would you recommend people focus on to improve any of the issues that you have raised in the last hour or so.

P2: Number one recommendation is for if we can weed out the self medication.

I1: Weed out self medication

P2: And the quacks

P4: Restrict medications that are over the counter

P6: Over the counter yeah. Policies should be there for over the counter and lack of prescriptions.

I1: Ok. Anything else?

P1: Under role of vets and paravets, maybe the vets and paravets to work on their individual ethics and work on their professional standards. Because these things are basically individual. Not everybody will have the courtesy to remind the farmer look, this drug i am using here requires this withdrawal period. So, some will care, some will not. So it depends on the individual integrity of the vet or the para-vet. So i think that would be a great deal. Cause the market is wide, situation is dynamic. So it all depends on the integrity of the individual practitioner to stick to those professional standards as they were taught in school.

P3: I think also although i know there is an awareness campaign on antimicrobial resistance, erm, the awareness campaign should be made accessible to farmers so that that ignorance is reduced.

P3: Weed out quacks by enhancing the KVB regulations.

P6: There should be wider policies about the government, about the sale of antibiotics. And then the farmers should be trained, there should be done sensitisation about the antimicrobial resistance because the farmers know nothing about antimicrobial resistance. So once they are using the antibiotics carelessly in their farms, they don't know the end results of those antibiotics.

I1: Ok. If we said right, we are gonna teach everyone who sells medicines to farmers, all about antibiotic resistance, do you think it would make a difference.

P1: It would make a difference. But again, it depends on the integrity. Because some people know what they are doing. It's not like they don't know. They just have less integrity.

I1: So when someone comes into an agrovets, the person selling the drugs has a business to run right? So how does that affect their practices? How does that affect whether or not they are likely to give out an antibiotic that they know they probably shouldn't? Do you think it does?

P1: It doesn't because i think for the vets who own agrovets, their focus is more on getting the product out of the shelves. Making profit. So it is we private vets who suffer when there is antimicrobial resistance and all that. Especially we private vets who don't own agrovets. For the few who have, i know of a few who can never sell medicine to farmers.

I1: Why?

P1: They have very strict ethics.

I1: Ok and they still manage to make money?

P1: Yes they do. Yeah very much so.

I1: Ok

P1: But some don't. Because a farmer will put up to you, even if you refuse to sell me this i will go to [name of Agrovets] and they will sell to me. And you know the owner and you can do nothing about it. Because it is his business, what will he do.

The other recommendation, maybe the government vets can tell us, is on, the same point she had mentioned. This capacity building that should be done through extension services. I don't know whether that happens or not. Because the focus has been more on other livestock farming practices. Extension is more in dairy. So i don't know how deep or how frequent they do extension. Maybe you can call pig farmers for a meeting. Maybe you know yourselves.

P3: You see now the biggest problem my friends with farmers, is that one thing now there is this dr google. The internet. Farmers now are even some steps ahead because you know they want to try new things. They want, I find, because like use when we call them for trainings, there is a level i cannot go at. Start telling them how to use antibiotic. To me that is the level of a trained person. But now those are the things they are searching on the internet. How do you use this drug or the other, so that they escape the level of asking for a vet. So as much as we talk of awareness, i don't know how we can train them because farmers have become very tricky these day because of the information that is all over in the internet. Sometimes even they call you and they tell you about an antibiotic and you are wondering how does she know this.

P6: The farmers are so much enlightened by google, but google is not about everything. You go to train farmers and they know much more than you do. That is their perception. The farmer's perception is that i know. What are you telling me, i can always google.

P4: Another recommendation i am trying to give them nowadays is to employ the paravet or a vet in their farm. Instead of keeping on calling me, every minute. What do i do with this

P3: That's a good idea

I1: But that would only be accessible to the big farms right?

P1: That's right. It won't be practical for those small scale farmers

P4: Anybody with more than 30 sows, they need a paravet.

P3: Yeah because of management practices.

P4: And to reduce on losses. We are still aware of offering employment to these quacks. Now they won't be quacks. Now they would be employed. They will learn now.

P3: Actually they even consult the vet. If they are employed and they have a difficulty on the farm

P1: They are more likely to consult.

P4: And they will read also, they will read books and understand everything about piggery.

P3: The issue of that internet farmers is quite a big issue in Kiambu. In other parts, they don't google. But in [place]. I have a farmer, she calls me and tells me, you come and see this animal. It doesn't have mastitis, it does not have this year, it does not have pneumonia. Then i wonder, what am i going to do. Yes go there to find the herd has all mastitis. But they cannot see it

P4: But they do first of all, these groups they post what they think might pig has this. The symptoms. And now, all the other farmers advise their, so they already have, it is not this, so people give examples. My pig has.... and it was this. My pig also was doing.... So the farmer has the diseases.

P3: She is doing differential diagnosis.

P4: Already.

P3: In fact i have seen, many farmers, i don't know why. They even want to compare notes of a vet with another vet.

So the farmer tells a vet how the animal is like, she takes notes on that level. Then she calls a different vet and tells the same story. So at the end of the day the farmer has like 3 different notes from three different... but you see, explanation is not the same as taking vital parameters so that you come up with a proper diagnosis. So maybe we will still try to see how we can train the farmers, those who have become a difficult nut. But at the end of the day there will be a solution.

I1: Are withdrawal periods in law or not? Is it in legislation that farmers must follow the withdrawal period?

P2: It is

P1: It is there in writing

P6: It is there in writing and in most cases on those antibiotics

P4: Is it enforced?

P6: There is a <inaudible> there, telling the vet on the withdrawal period, which is supposed to be communicated to the farmer.

I1: So it is written on the bottle, but is it written in legislation?

P1: No no no

P3: No it is not

P3: I don't think i have come across that. I have come across these acts ummmmm animal welfare act, I have no come about withdrawals.

P1: It is not there.

I1: So my understanding is in the meat control act is that it is in law for export, for pigs, but not for small scale. Is that similar to what you have experienced?

P4: For export there is

I1: But not for small scale?

P4: No

I1: Should it be?

P1: It should be in the meat control act. Yes

I1: Ok.

P1: Maybe not directly mentioned but at least aluded to in one of the clauses.

I1: Ok

After dictaphone off- enforcement is the problem as there is no enforcement at the abattoir as the meat inspectors are only worried about gross changes.

### **Key informant interview 1**

I1: It would be great to hear about the pig farms in your sub county, the types of pig farms that you have here and how you divide them.

P1: So here we mostly deal with small scale to medium scale farmers. And you will find there are those with ranging from 1 to 150. So the ones who are dealing with, we regard them between 1 and 70 who are a small scale. But there are those between 70 and 150, those one we regard as a medium scale.

So most of the farmers they are doing it as a business venture. So they keep their pigs with an intention of selling them. And mostly they sell their pigs to the local slaughterhouses. But there are those who also sell their pigs to one of the slaughterhouses which is an export slaughterhouse facility. So they target mostly the local slaughterhouses and also the export slaughterhouses.

I1: Great and so when we are talking local we are mainly talking [LIA].

P1: Mostly [LIA]

I1: And when we are talking export

P1: We are talking about [large integrated processor].

I1: Great and do you find that, so you said small-scale farmers are 1-70 pigs. That definition i think suits my

P1: For me between 1 and 50. Between 50 to 150, those are the ones we regard as medium.

I1: And do you find that small-scale are more likely to send to [LIA] or [large integrated processor]. Which abattoir is a farmer likely to use based on their size?

P1: Most of the farmers they prefer taking their pigs to [large integrated processor].

I1: Including small-scale?

P1: Including small-scale. Yeah

I1: And why is that?

P1: I think it is because of the way they do their remuneration. The payment system for them there is also the check of system. So you find they have provided some essential services prior to their payment so when it comes to the end of the month or a certain period is when they deduct from the money that they have gained, whenever they sell their pigs. So they have, even training, they also organise training for the farmers. Capacity building on how to take care of their pigs. So i think the farmers there they get knowledge on how to take care of their pigs. As a pose to the local slaughterhouses where they do not have any services for the farmers and especially when it comes to educating them, they rarely do that. So they don't have extension workers that they send to the field. So [large integrated processor] have those extension. I mean they have extension officers who train the farmers. On how to take care of their pigs. So i think they prefer now taking their pigs to the place where they also get some support.

I1: And is it, so are smallscale farmers more likely to send to [LIA] than medium scale farmers or just depend?

P1: I think it also depends with the individuals. Because you may find the ones who sell to [LIA], they use middle men. You find most of them they don't necessarily take their pigs directly to the slaughterhouse. But they can use middlemen in between who, on their behalf, will be able to sell for them pigs. Although there are those who directly sell to [LIA]. But in most cases you may find there are middle men who are involved in the process. But for [large integrated processor] you are given an order. You are given, what is it called, i am forgetting the name. Is it an LPO, prior to them now taking their pigs there. So regardless of their number, so long as the pigs are in good condition, even if there are two. They are able to buy for you your pigs.

I1: Ok so it isn't that small-scale goes to [LIA] and medium scale goes to [large integrated processor]. There is a mix of either coming in to [LIA].

P1: But you find most likely the medium scale will definitely go to [large integrated processor]. The small scale they have an option of either going to [LIA] or to [large integrated processor].

I1: And a [large integrated processor] farmer, would they always sell to [large integrated processor], or sometimes would they need to sell to [LIA]?

P1: Not always, sometimes they sell to [LIA].

I1: Why would they need to sell to [LIA] sometimes?

P1: That one I may not have a clear answer to that. But i think depending on the quality of their pigs as well. There is a certain grade of which is required. Certain standards that pigs need to attain before you take them to [large integrated processor]. But for [LIA], regardless of the quality. I mean they don't classify their pigs. They receive their pigs regardless of how they are.

I1: SO if a pig isn't the required quality for [large integrated processor], it would go to [LIA] on any size farm.

P1: Yeah so long as they are healthy, and then there is also the aspect of, it's a concept that was there but now they are more keen on that, the pigs that go to [large integrated processor] they also first of all have to be inspected by a vet, an animal health officer. So you find the farmers coming to our office requesting if you can check on the animals. So we have, first of all, we have to go and examine the health of the animal, the health status, if they are in good condition, if they are healthy. Then they come now we write for them the necessary documentation that is needed to transport pigs from their farms to [large integrated processor]. And in addition to that, you'll find that the ones going to [large integrated processor], they will have to pay revenue to the government. Because they have to come for a movement permit. And that movement permit you can only be given if you pay a certain, there is a certain revenue that is generated when we issue you with a movement permit. So you will also find the ones who take to [LIA] they, in most cases, maybe because it's within the same ward, they are not required to use any movement documents. So they directly take their pigs to [LIA].

I1: And is that legal that they are not using a movement license?

P: If it is within the same ward, it's not a requirement. So it's not illegal in any way

I1: Specifically at small-scale farmers then, how do they use vets and how does this compare then to the medium scale farmers? Do they use them in the same way or are there differences?

P: From the information that I have got from the farmers, whether small scale or large scale they would still have to consult an animal health officer.

I1: And what kind of stuff would they consult for? Why would they seek a vet?

P: I think i would just say probably, I mean in many cases they have, you may find there are those who try to manage the cases and they see that it is not viable is when they can resort to a vet. But also maybe from past experiences. You find maybe they tried treating the animals for themselves and it was not successful and they don't want to risk. Because the amount of investment that they have put in those pigs is way higher than, you know, resorting to themselves treating the pigs. They would rather get a vet who would be able to identify what the cause is. And manage the case as it should be. As a pose to treating it themselves and you know their animals may succumb to the disease. So they prefer, for me I think also the fear of, if we do it ourselves, we may do it the wrong way.

I1: Ok, and, is it legal for a small-scale farmer to, for any farmer to treat themselves?

P1: It's not legal. It is not legal. But i will put a disclaimer. That it is not legal, but again there are no penalties if they do it for themselves.

I1: Ok and they are able to buy drugs from agrovets

P1: Yes, they are able to access. That is one, i think that is what is pushing that idea of them doing it for themselves. Is because there is, in Kenya there is, over the counter purchase of drugs it's openly done in our country.

I1: So in your experience farmers will try to treat themselves and vets are kind of a second line, that hasn't worked so now i need some help?

P1: It's not really like applicable in all cases. I think i would say in some specific cases, and not just only pigs. Even for other species of livestock.

I1: And so some would call a vet straight away?

P1: There are those that will call a vet straight away but there are those who will want to do it on their own. Especially if they maybe see that it is not a major issue. Sometimes what they do, you may find a farmer going to the agrovet, explain the clinical symptoms that the animal is showing, and then now the owner of the agrovet or whoever is dispensing drugs can give recommendation on which drug to use. Based on the history that has been shown by the farmer.

I1: Ok and is the agrovet, an animal health assistant?

P1: Luckily in our country it is a requirement, if the vet is not there, because the vet is the one who is allowed to open an agrovet, but the employees are supposed to have either a diploma or a certificate in animal health. So at least they have the basic knowledge when it comes to health. Animal health issues. That is a requirement by the kenya veterinary board. And so they comply to that regulation.

I1: Ok so they should have some training.

P1: Yes they have trained in animal health. Either at diploma level or certificate level.

I1: So how does, so I've come across quite a few farmers saying, yes we call the vet. But actually quite a lot of the time the vet ends up being an animal health assistant or a vet. How does that work? Do farmers know the difference?

P1: Between a vet and an animal health assistant?

I1: Yeah

P1: The issue with our country is availability of vets. They are not very mobile or maybe they have employed these animal health officers within their premises. So when he comes now to managing cases, you find the animal health assistants are the ones who are available. They use motorbikes. Yes

I1: Ok so it is very necessary that the animal health assistants can go and prescribe medicines, because of the lack of vets.

P1: Yeah. In most cases, because what i have realised, unless it is a big farm, big farms are the ones who have employed vets, because they are able to pay the vets. Medium scale and small scale farmers mostly they rely on the availability of the animal health assistants. Although in some scenarios, like here i know, i think around, there are some vets who go to the field but they are not as many as the animal health assistants. So it is not exclusively the animal health assistants who go to the field. There are vets also. But they are not in number, there are very few.

I1: But actually the animal health officers are very necessary

P1: Yes and they are the majority.

I1: Ok i understand. Then moving onto why a small-scale farmer would use an antibiotic. Is it your opinion and your experience that small-scale pig farmers are using antibiotics to treat disease, to improve growth? What reasons do you find they are using antibiotics?

P1: In most cases it is mostly for treatment. Not for prevention. Especially in pigs and large scale animals. You will find in pigs and in large scale animals like cattle, it is mostly for treatment.

I1: Why is that, given the amazing access that farmers can have just by going into an agroveter and buying an antibiotic. Why aren't more using antibiotics to prevent

P1: I think also, you remember when we went to the field, the reported number of disease cases are very few. They are limited. I think you may find even a farmer the only thing they do is deworm, but other than that they don't get sick. So they don't see the need. I think the prevalence of pig diseases is still low. According to the opinion I have got when I visit farms. Rarely do they get sick. And also for the issues of public health diseases like foot and mouth disease. Diseases that are of an economic importance, you find the farmers also when they are vaccinating their large animals they are also vaccinating their pigs. But again even if they get the disease they just choose, they manage the cases and the animal survives. Rarely would you find that they succumb to such diseases. So I don't know whether it is about the number of diseases that affect farms are few, I cannot tell.

I1: Do you think pig farmers use antibiotics to promote growth.

P1: No. According to me no. Yeah.

I1: Why?

P1: As growth promoters. I haven't seen any from my point of view.

I1: Brilliant. So there is a bit of an idea in Europe I think, because antibiotics are illegal to be used as growth promoters in Europe, therefore the rest of the world are all using antibiotics as growth promoters. So it is very interesting to hear that even that where you are allowed to, people don't.

P1: Yeah. People don't. I think it is just out of, they don't see the need for that. They don't see the need when they need to use antibiotics, because if the animals are sick I think for us, maybe the idea is you can only use antibiotics when the animals are sick.

I1: When people are discussing with pig farmers the use of medicines, for example when animal health officers or vets go onto the farm and treat a pig, what will they discuss about that treatment, will they give any recommendations?

P1: That differs with individual vet officers or animal health officers. Personally when I go to a farm I basically look at the biosecurity measures, because for me there is an understanding that if you take care of the hygiene you minimise the spread of diseases. So basic biosecurity measures are key. As a pose to now giving medicines to protect the animals from getting sick. So it differs with individuals. And I think one I will speak for myself. For me I tell that that animals are safe, or you take care of your biosecurity measures then you minimise the spread of diseases. So you wouldn't need to treat an animal if you look at the basic control measures that will even prevent those diseases from reaching to your farm.

I1: And once you have given a medicine, you have decided that a medicine is required, are withdrawal periods something that you talk about with farmers?

P1: Yes we do tell them about the withdrawal periods. But now how are they implemented? So there are farmers who, as well understands that and they will take precautionary measures to ensure that they observe the withdrawal periods. But I can assure you that not all the farmers do that. And I wouldn't say the percentage, but I have heard of such scenarios where they don't

I1: Can you give me some examples particularly within pigs, as to why someone wouldn't follow a withdrawal time?

P1: Although now, let me just give a pointer here. Especially when it comes to pig farmers, they know that, especially for the ones that take their pigs to [large integrated processor], that if you give antibiotics or you give dewormers, they do it like a month or two before they take their pigs to slaughter. I think also because of the trainings that they get, because they fear of residues in pig meat. So they are careful, because every time now, for the times that i have gone to the field to do inspection, to issue animal health certificates. I ask them when was the last time you gave antibiotics? When was the last time you dewormed. They tell me, we do it like a month, especially for dewormers because that one they can sign, they do it a month or two before the pigs are ready for market. Again, if they are sick, which rarely do you get to hear farmers telling you their pigs were sick, they don't come two weeks prior to, if it's down to it they will wait for at least two weeks before they come to our office.

I1: Ok and that is for [large integrated processor], do you think that is likely to be different for [LIA]?

P1: For [LIA], i would say it could be the same thing. It could be the same thing, although in our scenario I also have an experience when it comes to bovine species. Those ones, the ones that they sometimes bring to the slaughterhouse. The ones that have been treated, managed and they have not responded to medication, so to salvage their animals they bring them to the slaughterhouse. And they don't observe the withdrawal periods because they are fearing, the longer they stay with the animal, then they might end up dying. But now the ones for [LIA], I would still think that, because pig diseases they are not, it is not a major issue in our case, they should be able to observe those withdrawal periods. I think also there is, when you talk to farmers they also know the effects of using antibiotics in their animals and taking them immediately to slaughter.

I1: Is it the law to follow withdrawal periods?

P1: There are so many trainings and I would say, are they trainings? When they do, you find the government stuff. Like for us they are trained on usage of antibiotics, the reason that we need to avoid using antibiotics. So we share the same information with farmers.

I1: Ok so what I'm finding interesting is that in the meat control act, i can't find that it is the law for pigs. I can find that it is for chickens, but not for pigs. So i find it really interesting that, if it is not the law, that people would still do it. So i wonder, why do they do it?

Why would they follow a withdrawal period if it isn't the law?

P1: It's not in the law, but i think also the rate at which people use antibiotics in pigs, maybe for the other wards, but for [place] even when we went to see the pig farmers, rarely do they use those antibiotics. But again it's because when you find out, some of the pig farmers, they also have other species of livestock within their farms. And of course you tell them, don't sell your milk immediately that you treat an animal. So they probably apply the knowledge that they have in that area, to even when it comes now to the issue of pigs so probably that could be the reason, they apply the knowledge they have gained, not just in cattle, but also in pigs. My thinking

I1: That makes perfect sense. Is there any enforcement, does anyone check antibiotic residues in any kenyan abattoirs?

P1: No. Not in the local slaughterhouses. I am not sure about export slaughterhouses. But i am not aware of any. Unless you request, again the cost of doing that is quite high.

I1: So you would think that every animal health service professional would know what a withdrawal period is?

P1: Yes

I1: And actually you think that most farmers would know what a withdrawal period is?

P1: My thinking, that yeah.

I1: Great. That's also what i am finding.

P1: I don't know what my other colleagues would say the same but that is my thinking. Because in many cases you will find the farmer is aware. Even those who probably will go against that regulation. They are aware. Deep down, within their hearts they know. There are withdrawal periods to observe.

I1: And those that know that withdrawal periods exist, but then do not follow them

P1: Even i believe so, because now when it comes to poultry, it could be another story.

I1: Really? Where it is the law in poultry. How interesting.

P1: Yes

I1: Why a different story in poultry?

P1: It could be a different story because I think poultry diseases are more rampant.

I1: Ok so they are more likely to have to break them.

P1: Yes

I1: Ok. So, if i told you then. So I2's masters research was actually getting samples from [LIA] and part of it was tesing them for antibiotic residues. His testing found that a third of the samples were positive form antibiotic residues. How do you feel about that figure.

P1: So let's do the maths. So let's say there are 30 pigs and a third of them are.... That's quite a high number. That's a high number.

I1: Yeah. Higher than you would imagine?

P1: Yeah.

I1: And not really what our conversation would reflect right?

P1: Yeah i would find it is high. Not reflecting the knowledge that I know and the practices amongst the farmers.

I1: Doesn't reflect your experiences?

P1: For me it would be higher than what i would expect. I would say we are not 100%. But i would find 10 to be higher. Let's say a population of 30 and in every 30 we get 10, that would be high for me.

I1: Can you think of reasons that a farmer sending to [LIA] would not follow the withdrawal period?

P1: Yes. I would first of all maybe out of ignorance, not knowing, not having the knowledge as to why they need to observe the withdrawal periods. Secondly i would say it is a way of maybe of salvaging the pigs because they don't want to go at a loss, because probably maybe the animals have been treated. And they are fearing maybe they will not survive so as a way of salvaging they may decide to do that.

The third would be also, the most you stay with pigs the more you have to dig into your pockets to buy more feeds for them. So as a way of cutting on cost. They would do that.

I1: So I'm also not finding the one third figure to be very reflected in the farmers that I speak to. One theory that I have is that potentially that farms who are selling to [large integrated processor], selling to [large integrated processor] most of the time, if they have a pig that isn't improving after medicine, that they then take to [LIA] to salvage. Does that see something that you think might be plausible or have you got any ways that you can think of to explain why that figure is so high.

P1: There is also, let me also introduce another angle which may not really look like it is happening but I know it is happening, they also have some home slaughters. Instead of taking to [LIA] or [large integrated processor], some resort to doing home slaughter. So I wouldn't say salvaging is the priority reason as to why they take their pigs to [LIA]. Because you may find those ones doing

I1: Home slaughter

P1: Yes. But that is just out of my wild imagination. It wouldn't be the main reason as to why farmers should take their animals, as a priority reason to salvage in a slaughterhouse.

I1: So if it was sick on farm and they didn't want to lose the pig, they would home slaughter

P1: Eh probably they would, although we discourage it as much as we can in case we hear of such, we take the necessary actions. I being the veterinary officer have done a lot of sensitisation amongst the farmers through the chiefs. Where we share information because information gets to this office. We get to hear, oh, they have found a place where they have been doing slaughter of pigs so we immediately take the necessary action. I also have a support from one of my staff who is involved in, he is based in this office but he goes around the whole of [place]. For what? Just to check what is happening outside. So when we get such information we involve the police.

I1: Is home slaughter illegal?

P1: It is illegal. For pigs it is illegal.

I1: Because it needs to be on a proper slaughter slab?

P1: Because it has to be every meat, especially if it is meant for public use, consumption, according to meat control act it has to be inspected by a qualified inspecting officer. So for home slaughter you will find that it is not inspected. I'd rather we, we tell them, we'd rather, even if the animal is sick, you'd rather get the necessary documentation, of which again they also don't want to risk, they don't want to risk bringing sick animals to the slaughterhouse because they know they will be condemned by the inspecting officer. But per chance they do it without their knowledge that you know, this animal could be suffering from something. We tell them, when you take your animal to the slaughterhouse we have trained inspecting officers who will be able to judge and know whether that carcass or the meat from that animal is fit for human consumption.

I1: So because you really don't want them to slaughter at home, actually it is better to send a sick animal to slaughter than it is to home slaughter, because then it will be inspected. Which adds a very difficult angle to then be able to do anything right? Because if we say we are gonna get tighter on antibiotic residues, you could just push them further towards home slaughter again.

P1: Exactly. So it is a very difficult balance. That is what we experience. Not just in pigs but also in cattle. It's a delicate balance because on one hand we want to discourage them from bringing to the slaughterhouse animal that are on treatment. But on the other hand, if they do home slaughter they

will not be able to judge, pass a proper judgement and say, these animal is fit or not fit for human consumption. So sometimes we are in that

I1: And even if you got more strict in enforcing antibiotic residues at the abattoir, again that would push

P1: Exactly so it is a very

I1: just for my awareness. So at home if we home slaughter you are allowed to eat it yourself, but you are not allowed to sell. But that's not even legal here right?

P1: Yeah but you see, because they have neighbours and they call, oh my neighbour come and i give you a piece. Maybe at a smaller fee or for free. But in case the animal was sick, the neighbourhood would equally be affected by the disease.

I1: So a few have told me that if they have a sick pig they will slaughter and they will get a vet out to come and inspect it.

P1: At home?

I1: Yes

P1: Rarely does that happen. Rarely does that happen. The only scenarios where we are called or where they call my office to request for an inspecting officer is when you go to institutions like, we have institutions around and they do not want to transport their pigs to the slaughterhouse. So they request us. We visit them for an inspection, i send an inspecting officer. To go and examine the animal before slaughter or even during and after. Which makes sense.

I1: And that would be legal?

P1: That one, that would be legal because these are the same inspecting officers. Although we try to discourage but we say it's better than the pigs not being inspected. For example now, we are closing the year. I am sure they will start calling me because they, when the candidates who are doing exams, when they finish exams the school will hold a party for them. And because they have pigs in their school, in their institutions, they will call us and say oh come and inspect for us before they, yeah.

I1: Ok and when you are in that kind of situation, or when you are checking pigs for [large integrated processor], and you say when was the last medicine. Because there are no medicine, I am right in thinking that you don't have to record medicine use,

P1: No we just indicate like for, I wish we had a copy, my colleague has just gone to

I1: Oh to do one. This is the certificate that you

P1: Yeah to go and examine the pigs before filling the health certificate. So we do that regularly, all this, all these are for [large integrated processor]. And it is a requirement. You see on a daily basis we get several of them.

I1: And on there you have to write about medicines?

P1: In case they have used any medication we indicate. But from my experience that i have for the period that i have gone to the field, because we ask in the last 2 months have you used any antibiotics. In most scenarios it is no.

And i would say that would be equally applicable to the pigs that are taken to [LIA].

I1: And you would believe that to be true?

P1: Yeah now we base that on er, it's a matter of trust. Because there is nothing more we can do. It is just a matter of trust. You saw that when we went to the field. I don't know if there is any who, er indicated that we have treated our pigs in the last two weeks. Was there any? I don't think so.

I1: So i have had quite interesting results. From, do you remember we left them with the bucket. And the clipboard. Some have put stuff in the bucket, some have put stuff in the clipboard. Not many, very few actually. But on my final visit, which i have done some last week and i have some more this week, so yours I haven't done yet. I take along a big bag of empty drug packets. So sachets and empty bottles. And they sort through and they sort into the ones they have used this month and the ones they have not used this month. Despite saying to me, no we have not treated the pigs in the last month, nothing on the clip board, nothing in the bucket. Some then sort lots of drugs into, we have used this month.

P1: For large scale or the small scale?

I1: My biggest farm is 80 pigs. I find that quite interesting. And i'd love to hear your thoughts as to why you think that might happen.

P1: I think also they are maybe not open with information.

I1: But then i find it funny that with all the drugs packaging they are open with the information.

P1: Now maybe when it comes to us, because of the fear that we will indicate in the health certificate.

I1: So if you indicated, would they be able to send the pigs.

P1: Now i don't know whether they have any, there is any impact on that. That one I am not sure. The only issue that we have gotten is when they find the pigs sick. If they are sick, they totally condemn. We had a scenario where they found around 20 pigs. Although not from this area, but from a neighbouring sub county. What happened is the officer, instead of going to the field he just filled. Instead of going to examine the pigs, he decided to just fill the animal health certificate without first examining the animals. So when the animals got to the farm they realised they were sick. And once they are there they cannot be taken to the farm so they were destroyed.

I1: What a waste.

P1: So maybe there is a fear. Because they know we are government officers, maybe the fear of us getting to know what is the actual activity that they carry out in their farms. My thinking.

I1: But actually it is interesting that, so when you fill out the certificate that goes back to [large integrated processor], and then [large integrated processor] say yes send the pigs or no don't send the pigs? Or what happens?

P1: In case they find that they have antibiotics?

I1: Yeah

P1: I don't think they are turning them, unless they are sick.

I1: They wouldn't turn them back unless they are sick.

P1: No, unless they are sick. I have not heard of a scenario where they are turning.... I am also not sure whether they carry out residue testing. It's not very common in our country.

I1: I'm not sure if it required for export

P4: No I don't think it is a requirement. Because i also operate in a local slaughterhouse and we do quite a number. But we don't have a lab where we can test for residues. We don't have a lab.

I1: And does that figure, the one third figure, make you think about

P1: Yeah that is what i am saying, for me it is just out of talking to farmers to know what their practices are, when they are on the farm. That is why i am telling you for poultry, it is because they also open up and they say we use these antibiotics. I have visited several poultry farmers and pig farmers. Poultry farmers tell you openly that they use antibiotics even without over the counter drugs.

I1: So actually, if poultry farmers are honest with you, why wouldn't pig farmers be honest with you?

P1: That is what I am wondering. Based on the information that you just shared.

I1: So the data isn't published. So it is just data from a project. It might not be right, I don't know. It is very much an unpublished number that I am here to investigate.

P1: So from what you got is it from their own purchase of over the counter drugs or they were given, they got the medication from a veterinary or animal health assistant?

I1: From my discussion with farmers? Mainly through vets. Yeah. Mainly vets coming to farm. I have found one case where i think the withdrawal period has not been followed and that was...

P1: They were taking it to [large integrated processor] or [LIA]?

I1: [LIA].

P1: Oh [LIA] sorry, I forgot that you were focussing on [LIA].

I1: So yes the vet came to the farm, he gave lots of antibiotics, this is from the farmer, he gave lots of antibiotics to make them grow better for their last few weeks

P1: Really? As growth promoters or as treatment?

I1: Growth promoters it sounds like. But that's the only case that I have found. And then there was a water shortage so they had to send the pigs to slaughter. So it was within, they normally wait three weeks and this was two weeks. And that is the only case that I think the withdrawal period has been broken that I have found.

P1: So was it, they sold because there was no water.

I1: Yeah

P1: So in a way they are also trying to save on cost.

I1: Exactly. So yeah, fitted into your examples of where are farmer might need to break

P1: Because i know, especially for the better part of this year, because i think now, when you can it was like my third visit, to the farms. And the cost of feeds have skyrocketed. Within a short period, the cost went like this. And from my discussion with the farmers, they were eluding to the fact that

most of them are quitting pig farming. They eluded that to high cost of production. Especially because of feeds.

I1: And do you think that that high cost of production could make a farmer more likely to need to send pigs to the abattoir during a withdrawal period?

P1: Yeah. Most likely. Most likely. Yeah.

## **Key informant interview 2**

I1: Um, so could you tell me about the types of pig farms that are in your, in the subcounties that you oversee, um, and, uh, the size of them, which abattoirs they serve? Um, that, on that kind of topic?

P ([00:00:50](#)):

Now, we have quite a number of, uh, farming systems. And, uh, they're those superior farmers. They're those farmers at the ground who were keeping pigs for the sake. So those ones, uh, that are superior. They keep semipermanent and permanent and closed piggeries. There are those now near towns who, rear pigs. And in the morning they let them off, they scavenge, then they come back in the evening. Those are the extreme farmers we have.

I1[00:01:33](#)):

Yes. Okay. So right from, um, scavenging systems to, to big established farms. Um, so then looking at, um, the abattoirs that they serve, which, um, size pig farms or which pig farms serve, which abattoirs and how does that all work?

P ([00:01:55](#)):

These established piggeries. Mostly they take to [large integrated processor]. And [large integrated processor] is an exporting farm. And they are very strict. With the, with the type of pigs they buy for slaughter. Um, now this is between me and you, but you record it

I1[00:02:21](#)):

It's all anonymous so

P ([00:02:22](#)):

Sometimes, there are those lowly farmers.

I1[00:02:26](#)):

Yes.

P ([00:02:26](#)):

Oh the middle ones. Let me talk about the middle ones who cannot have 20 pigs. There's not economical to take one pig to [large integrated processor]. So they'll take to [LIA].

I1[00:02:37](#)):

Yes.

P (00:02:37):

Yes. And it's either they take themselves. Or there are those butcher men. Who will go to the field and buy from the farmer. Sell me this pig. And then the farmer will maybe, uh, the butcher will buy one from here, one from there, one from another place. And then take the three to [LIA]. The other one, is very dangerous. Yeah. Those pigs that scavenge around. You'll find they may slaughter them at nights.

I100:03:16):

Okay.

P (00:03:18):

Right. And then the, the following day. They don't display the, the pork for, uh, selling. What they do, they inform the community. Around and they tell the community, come, we have this. But you'll buy at this price. So it's a lot like a makeshift hotel, a makeshift hotel. So you come, you eat, another time you are not in that hotel, you're that somewhere else. So that they are the three types of slaughter.

I100:03:52):

And where do the ones that slaughter the scavenging pigs. Where do they slaughter

P (00:04:00):

At home

I100:04:01):

Just anywhere.

P (00:04:02):

Anywhere. At home. And it's very difficult to get them. Very, very difficult to get them.

I100:04:08):

And you are trying to get them. You

P (00:04:10):

We tried. We couldn't trace them. Rumour has it it is somewhere here, but you get there, the gate is closed, there's nobody, there is only a dog. Yeah. And then when you move away,

I100:04:27):

How interesting. Okay. Okay. So, and I guess if you turned up and they were selling the pork, you, you can't say you slaughtered this at home. You didn't, because you don't know. Right.

P (00:04:39):

That is immediate arrest,

I100:04:42):

Is it?

P (00:04:44):

Yes. Immediate arrest. Yes. Because that is home slaughter. And then you offer the products for sale. Without being inspected. So what are you expecting? Trichinella, you expect tape worms. You expect everything now to be spreading within the community. And you see these scavenging pigs. People may say they don't have a management system for them. So they don't walk the home, these pigs, you understand?

I100:05:15):

Yes. Yeah. Okay. Okay. And who owns the scavenging pigs? Are they owned by someone

P (00:05:23):

Yes they are owned because by the end of the day it goes to to a homestead. They know.

I100:05:29):

They know where to go back to.

P (00:05:31):

They know their place. So they'll look for food and then the evening

I100:05:36):

They go

P (00:05:37):

Back home.

I100:05:39):

How interesting. Okay. Fantastic. So, um, is a, uh, so let's look at the, um, the farms that sell to either [large integrated processor] or [LIA]. Um, is there a size, you said the big farms will primarily go to [large integrated processor]. Do they ever have to sell to [LIA] or is it only to [large integrated processor]?

P (00:06:05):

If, if, because [large integrated processor] may not, uh, swallow every other thing that is produced. So there are times that, uh, a producer finds that his or her pigs are ready for marketing. But they cannot be absorbed by [large integrated processor]. Okay. So, and then he doesn't want, he or she doesn't want to continue feeding there the pigs. So [LIA]

I100:06:36):

And, and the small and medium farms. Where do they sell to

P ([00:06:41](#)):

The small and medium farms? They sell to [LIA]. But let me put this way, they don't sell those small things. They don't small, there is a size. They, they sell.

I1[00:06:58](#)):

To

P ([00:06:59](#)):

To, to for slaughter. If you like. Then these ones like, like, uh, let's say I'm producing. And somebody somewhere, anywhere you think here is interested in the breed that I have. That person can come from even a hundred kilometers away. Come and purchase to go now and start his piggery.

I1[00:07:25](#)):

Yes. Yes. Okay. Okay. Okay. And when you say, um, small and medium sizes, what number of pigs are you talking

P ([00:07:34](#)):

If I talk of, the maximum, the average maximum, you know, then let me use the word average maximum should be about 20, 20, 20 to 30.

I1[00:07:48](#)):

Very small.

P ([00:07:49](#)):

Yeah. Then down here. Okay. You may find that they are souls who produce maybe, although these days they don't, they're not. In fact, we have very few farmers with more than 40 pigs. Very, very few. Because I think production cost is a bit too high. So the others are 10, 15. Like that. Yes. Because even when you look at my movement permit, because we have to check them. Before they go to [large integrated processor]. You'll find the highest somebody that will take 10 pigs. It's maybe once in a month

I1[00:08:30](#)):

Who will take 10 pigs in one go to slaughter.

P ([00:08:32](#)):

Yes.

I1[00:08:32](#)):

Right. So it's normally very

P ([00:08:34](#)):

Few. 8, six 10 maximum.

I1(00:08:38):

Okay. So, um, for reasons that we will discuss later, um, as you know, I'm mainly interested in the picks that go to [LIA]. But what I now understand is that it isn't just the small people who sent to [LIA]. It's

P (00:08:57):

Every

I1(00:08:57):

A little bit of a mix

P (00:08:58):

Because, because if the best market down here is not working. Then you go for the next alternative.

I1(00:09:04):

Okay. So we're, so over the next few questions, we are mainly talking about small and medium, but also bit of everything, if you get what I mean. So, um, how do these smaller pig farms use vets. Um, and how does that differ, for example, from a big pig farm,

P (00:09:28):

How do they use

I1(00:09:30):

Vets, so, so doctors and animal health assistance.

P (00:09:34):

Oh, vets.

I1(00:09:35):

Yes.

P (00:09:37):

Now this is where a jungle comes in.

I1(00:09:42):

A jungle. Yeah. Okay. Tell me,

P (00:09:45):

Because what we are talking about here, there were times when this system was under the national government. And now we have a different type of government. There is a devolved. They brought all these services from the national government to the county government.

I100:10:11):

Okay. Understood.

P (00:10:12):

Like you have [place] as the county. You have [place] as a county, now they have their own policies. And they have not developed policies that are different from what there was before.

I100:10:28):

Okay. Okay.

P (00:10:31):

But during the national government things were very organized. Yeah. I've worked in the two systems.

I100:10:39):

Have you?

P (00:10:40):

Yeah. During the national government, things were just straight. From the top to the bottom. Yeah. There were staff, there was extension. There was a facilitation. There was all these don't quote me,

[REDACTED]

I100:12:14):

And what about it isn't working? Can you give me some examples of what doesn't work?

P (00:12:20):

Well, disease control.

I100:12:23):

Yeah.

P (00:12:25):

Without the government's officers, there is no effective disease control that can take place anywhere. Anywhere.

I100:12:35):

And you're talking notifiable diseases,

P ([00:12:37](#)):

Notifiable diseases. That is why you'll find we have what we call African swine fever. Uh, don't quote me, [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

I ([00:13:53](#)):

Yeah.

P ([00:13:56](#)):

Although they have learned in the animal health institute. They don't go into details the way we went into details. Right. So they don't know how to use these drugs. It's like, have you ever heard something we call diagnosis by treatment?

I ([00:14:13](#)):

I haven't heard that exact phrase, but I like it.

P ([00:14:16](#)):

You treat, if it doesn't get well, you change the drug and you treat until it gets well, if it doesn't die in the process. Right. So if it gets well, you know, <inaudible> supposed to. Yeah. So that is the issue. Then, uh, you know, reporting is another problem. You see those officers, the one officer I have here, has to give a report every week. Every week. So before things escalate, you'll have known what is going on. Going on. Now that you don't have enough government officers, what happens? Yeah. The reporting and he or she has been overwhelmed by this sea of private vets. So they don't want to report. So those are the three major challenges I find in present day. Running of the services.

I ([00:15:29](#)):

And so I'd like to go into more detail of the medicines one then, if that's okay. Um, do you find that pig small to medium sized farmers do use vets to give medicines? Or do you find they do it themselves?

P ([00:15:50](#)):

May I put it easily? Now. In the present situation, the economy is not very good. And, uh, raising these animals is becoming a bit costly. So you'll find the profits are being eaten into by production costs. What do you find? A farmer is very keen. A farmer is, and this is not the area where you tell the farmer hold the pig I inject. So the farmer is looking at you, looking at the symptoms. Uh, if it is behaving like this, this fellow has used this. Yeah. So next time it even behaves that way. And this farmer noticed that you had a bottle of, uh, penicillin. He will go to work, to an Agroveter. And by the

penni[cillin] it injects and the animal gets well. Uh, my friend. That is the head of the vet, consultation with a vet and this type of condition. So they have done even castration of their piglet. You know, hold for me, uh, you are castrating the way you are doing it. Uh, tomorrow you will castrate one, if it survives, he will go for the others. So that is ahead of the farmer and the vet. You're getting me?

I100:17:37):

Yes.

P (00:17:38):

Okay.

I100:17:38):

Is it legal for a farmer to go and buy medicines from the agrovets and give them

P (00:17:43):

It is not,

I100:17:45):

Not legal.

P (00:17:46):

Actually it is totally illegal. Yeah. But as I told you the systems are not working. Like now me, I'm not even supposed to be here. If I had transport, I'd be going round. Yeah. Maybe this week is inspectorate. Uh, I go for inspection in those outlets.

I100:18:09):

Agrovets? Ah, yes. Tell me what do you find?

P (00:18:14):

Yeah. I'm supposed to do that. I'm now crowded like this. Where do you go?

I100:18:20):

You don't have transport?

P (00:18:21):

No.

I100:18:22):

Why don't you have transport?

P (00:18:25):

How, how do, I cannot use my personal vehicle to do government job,

I100:18:28):

Right.

P (00:18:29):

Yes. So if I have to be able to move from point A to point B to put control measures, I have to have transport. If I don't have staff, do you, do you want to tell me that I will have transport? I don't.

I100:18:47):

Okay. Okay. No I understand that. Um, and when you, uh, do you, do you prescribe medicines yourself on farm or do you learn about other people prescribing?

P (00:19:04):

Okay. There is prescribing. And the problem with prescribing is one. If it is one pig where, where it becomes a bit difficult. Let's say there is a, there, the, the medicine that you can subscribe. Uh, there are others you can't. Because let's say it is one, one pig that is sick.

I100:19:31):

Yeah.

P (00:19:32):

Erysipelosis. So all what you need is maybe 20 mls of penicillin what you see. But there is no package of 20 ml. So you are telling this farmer to go and buy a whole bottle of penicillin. Yeah. Come use 20 ml and throw the rest of away. So the farm is easier if you come with your penicillin and you charge that farmer. Okay?

I100:19:57):

Okay. So for sick pigs, actually it might be cheaper for the farmer to get the vet out and give just 20 ml and visit rather than go to Agroveter and buy the whole bottle.

P (00:20:16):

Yes. Because that would be wasted to the farmer.

I100:20:19):

Yes. Okay. That, that makes perfect sense. And they, and because my reaction, I thought you were going to say they would go and buy the whole bottle and just use the rest without supervision. But actually that doesn't happen.

P (00:20:35):

Okay, fine. Okay. Let me go back a step. Rarely do they, Rarely do we subscribe. Yeah. Rarely do we prescribe a drug. A drug. Because to them this is a waste of time. Because you go to the farm.

I100:20:52):

Yeah. You may as well give it.

P (00:20:53):

You diagnose this is the problem. You prescribe a drug, you won't stand there, you move on. Then the farmer goes for the drug from the agrovets. Come back to the farm. Looks for you again to come and administer the drug. So they find it better if you come do it and go. Yes. Unless they are okay like drugs, like, uh, even ivermectin. Those ones they'll buy. You'll buy. Because they know you'll have to come and give, give a whole lot of those pigs. But now if it is one pig, they won't.

I100:21:35):

Okay. Okay. And for what reasons does a small to medium sized pig farmer use antibiotics?

P (00:21:51):

Repeat yourself.

I100:21:53):

Um, why does a small or medium sized pig farmer use antibiotics? Or why are antibiotics used on a small or medium sized pig farm? Is it to treat disease? Is it to prevent disease? Is it to make them grow better?

P (00:22:09):

Mm-hmm. <affirmative>,

I100:22:10):

What do you think?

P (00:22:11):

Mostly?

I100:22:12):

Yeah.

P (00:22:12):

From my experience, is for treatment.

I100:22:16):

Okay.

P (00:22:17):

For treatment.

I100:22:18):

Yeah.

P (00:22:19):

They don't, I don't think there are farmers using those boosts under, uh,

I100:22:24):

Growth promoters. Which really interests me because a farmer could just go to an agroveter and buy the drug. Right? So why don't they use them for growth promoting?

P (00:22:40):

For growth promotion,

I100:22:42):

For making them bigger, grow better when they have such easy access. Why wouldn't they?

P (00:22:49):

They would, they would. But from my experience, they don't.

I100:22:55):

Why?

P (00:22:55):

I don't know.

I100:22:56):

No, I don't.

P (00:22:57):

Or, or, or or they don't know.

I100:22:58):

Right. Yes. Maybe they don't know.

P (00:23:00):

Maybe they don't know. And the vets don't know. So they have not exposed the farmers to these growth boosters.

I100:23:08):

Okay. That's, yeah. Fantastic. Um, and when you are, um, giving a pig a medicine on a, on a pig farm, what do you talk to the farmer about? Do you give them any warnings? Um, about that medicine?

P ([00:23:27](#)):

No. Let me go back to where we came from.

I1[00:23:31](#)):

Yeah.

P ([00:23:33](#)):

Mm. Your question if I got it, you got it right? You asking, if you go to the farm level? And you administer a drug. Maybe for treatments or it is sick. Do you talk to the farmer about the dangers, et cetera, et cetera of the drug?

I1[00:23:54](#)):

Yeah.

P ([00:23:55](#)):

Rarely.

I1[00:23:56](#)):

Rarely, rarely. What about withdrawal periods?

P ([00:24:02](#)):

Withdrawal periods. It is same. I don't think anybody talks about that.

I1[00:24:09](#)):

You don't?

P ([00:24:10](#)):

Yeah. Anybody does. We don't talk about that. Although me I don't go to the field. Me, I simply don't go to the field.

I1[00:24:19](#)):

But, but from your experience of dealing with animal health officers, who would be going to the field

P ([00:24:25](#)):

Yeah. They don't,

I1[00:24:27](#)):

You don't think they talk about withdrawals?

P ([00:24:28](#)):

Not even thinking. I know they don't.

I100:24:31):

Tell me more. Why?

P (00:24:34):

Now?

I100:24:34):

Why do you think that?

P (00:24:35):

What did I tell you? I I say it from the beginning.

I100:24:39):

Yeah.

P (00:24:42):

Maybe the only person who, who understands these things very well.

I100:24:47):

Yeah.

P (00:24:48):

In a full vet. Okay. So there is somebody who has learned about these drugs. That this drug treats this. And this drug can treat this. Through field experience. Kidogo kidogo, small, small. So even the efficacy, the, all those dynamics of a drug, are not up here [in your head]. Right. So what do you expect out of that person to tell a farmer? It's like now telling a baby. To teach another baby how to grow.

I100:25:26):

<laugh>. Yeah. Yeah. That's, I like that. Okay. Do you, do you think that the animal health officers know what withdrawal periods are?

P (00:25:35):

They do. Because all drugs have labels. And they clearly tell you. Withdrawal period seven. Milk, meat, eggs.

I100:25:44):

Yes. <affirmative>. But you don't think they would consistently mention to the farmer

P (00:25:51):

Not even thinking. I know they don't. Okay. So that way I can swear. That they don't.

I100:25:57):

Okay. Okay. Do um, do you think that the farmers know what withdrawal period is?

P (00:26:07):

They do mostly. They do. You know, all these farmers are not down there.

I100:26:18):

Yeah,

P (00:26:19):

Yeah. Some of them are bankers. Yeah. Others. Okay farming is a side hustle to them. So they have their main job. These are not fools. Yeah. So when you do things, even if you don't leave the, the container or the bottle of the drug at the farm level. This person, you will go and Google. Yes. What was the color of the drug? Whiteish. Whiteish is amoxicillin, penicillin, like that. Right. These person will know.

I100:27:02):

Cool.

P (00:27:03):

They know. They know. Even sometimes you'll find a farmer asking you, after how long should I slaughter this animal? So you'll find somebody who is not very keen removing that bottle and reading so that he, he or she can inform the farmer. Do, do you see the where I'm coming from? Where I'm coming from?

I100:27:28):

Yeah. Yeah, no, I get that. So, um, in your experience, farmers know what a withdrawal period is. Do you think they observe them?

P (00:27:39):

For themselves it's like, let me, let me come out clear here.

I100:27:45):

Yeah.

P (00:27:47):

And I may not talk, talk about the, the pork specifically.

I100:27:51):

Okay.

P (00:27:52):

Let me talk about a dairy animal.

I100:27:55):

Yeah.

P (00:27:55):

You see these dairy animal is producing milk. And this farmers is depending, oh this milk for financial gains. Right. Yeah. So you go tell him because I've given tylosin, you go for 14 days without taking, selling that milk.

I100:28:11):

Yeah.

P (00:28:13):

Yeah. So what they will do at their farm level. They won't drink that milk from that cow. Okay. They'll sell that one.

I100:28:27):

<laugh>.

P (00:28:28):

You get me? Yeah. They will sell that one. But now feed on, uh, from the cows that were not treated even during deworming, these farmers are not daft. Right. Yeah. They will deworm and then leave one

I100:28:47):

For themselves.

P (00:28:47):

For themselves. So after these drug withdrawal period, whatever you're calling er withdrawal period. They'll start now taking from the <inaudible>, and that is when they will deworm the reserved animal. So even if, even for pigs. Right. Uh, an animal is sick and you know it will recover within three days. The withdrawal period of the drug used is 10 days. Yeah. You get a market. Yeah. At [LIA]. Where they are not very strict. They don't even test for, uh, drug residues. So still the farmer will just sell that animal. It is good.

I100:29:34):

Okay.

P (00:29:34):

So that is the issue here.

I100:29:36):

Um, why does that happen then? So why, why is that farmer not observing the withdrawal period?

P ([00:29:52](#)):

There's a lot of ethics.

I1[00:29:52](#)):

Ethics. Okay.

P ([00:29:54](#)):

Ethics. And it has not been hammered into that farmer. The dangers he or she is causing the community at large. Because I may not take that milk. But you, my daughter will go to a neighbour who bought the milk I sold. And you take the same drug. Yeah. You get my gist. That is where, that is where now the darkness comes in. The reasoning and ethics.

I1[00:30:25](#)):

Okay. So it's very much, um, intentional. People know that it's wrong. And ethics and financial issues, meaning that they need the money for the meat?

P ([00:30:46](#)):

I think so.

I1[00:30:46](#)):

Okay. Yeah.

P ([00:30:48](#)):

I think so. Because if I had only two cows and I was selling 20 litres of milk and then one cow has been treated. And you're telling me that 10 to go down> You're telling me to stop? So I'll, I'll deal with my issue first before I think about the outcome.

I1[00:31:13](#)):

Yeah.

P ([00:31:14](#)):

But, deep down them, they know.

I1[00:31:16](#)):

Yeah. The thought of throwing away all that milk is awful. Right. Whereas a pig, I think here in many cases is different because in many cases you can just wait to send to slaughter, right? Why would someone, um, send within the withdrawal period when they could just wait another two weeks

P ([00:31:54](#)):

Let me reflect back, back a bit. Remember the feeding? So when these animals stays for an extra one week. You'll have to feed it. It it is already mature. You are gaining nothing by keeping it. But you are losing by feeding it. So that blindness now, you will leave the pig for slaughter.

I100:32:20):

So the high price of feed would affect

P (00:32:26):

Actually it is there the price of production.

I100:32:29):

Price of production.

P (00:32:29):

Yes. You want to shorten it as much as for, and you gain as much as possible. So you're telling this fellow to continue feeding a pig that is ready for slaughter and is feeding it from his pocket. And it's not gaining anything extra. That is the reason you find the put it out to.

I100:32:49):

Okay. Thank you. And what about on, uh, bigger farms? You, you mentioned that [large integrated processor]s is strict. What do they do if, um, if a, if a pig gets sick, they've treated it and they're ready to send all the, all the pigs to slaughter, but they're still within the withdrawal period.

P (00:33:13):

Depending on where you sending your pigs to. Because like, uh, you see, if you inject an animal. That drug does not disappear immediately. So it is, it may even take a week. Yeah. Before it is totally absorbed. Or the color, of the drug moves from there, the site.

I100:33:36):

Oh. I hadn't thought of that.

P (00:33:38):

So if you take such an animal to [large integrated processor], because that is where you have the market. It'll be rejected

I100:33:48):

Because they will see

P (00:33:49):

That injection site.

I100:33:52):

My goodness.

P ([00:33:54](#)):

Okay. So that one will be rejected. So this farmer, and I hope they continue that way, the few that I know. They'll maintain that pig until it is free from that drug. And then they'll sell it with that next batch. You see now the cost here is spread over many pigs. You know, the cost is spread over many pigs.

I1[00:34:20](#)):

But if they keep that pig to the next batch, it's gonna be really overweight. Right?

P ([00:34:25](#)):

It will be overweight

I1[00:34:26](#)):

And [large integrated processor] really penalize you for that.

P ([00:34:28](#)):

It'll be penalized. But on the other hand, you have an alternative to sell it to [LIA]

I1[00:34:37](#)):

Within the withdrawal period.

P ([00:34:38](#)):

Yes.

I1[00:34:40](#)):

Do you think that happens?

P ([00:34:42](#)):

I, I believe the big farms do that. They don't sell until the withdraw period is.

I1[00:34:51](#)):

Okay. So so you don't think that a big farm would have a pig within the withdrawal period and would say, we're just gonna sell that to [LIA]?

P ([00:35:02](#)):

No, no. They'll have to wait, they'll have, you see big farms or big production whatevers are not run by a person like me.

I1[00:35:11](#)):

Okay.

P ([00:35:12](#)):

Yeah. It is a person who is keeping those animals, not only, the source of income is not only those animals. Yeah. He or she has other sources of income. So he has that question. So that person is not crying out for money.

I1[00:35:48](#)):

Yeah. Okay.

P ([00:35:49](#)):

So this person can wait.

I1[00:35:51](#)):

Okay. And, and just to go back a step

P ([00:35:56](#)):

And in 10 days, if I may say. In 10 days you won't make a lot of change in a weight of a pig. There won't be a big change.

I1[00:36:05](#)):

Oh. Because actually when you say next batch, you mean in a week, couple of weeks.

P ([00:36:10](#)):

Yes you see there in one month, 15 days like that.

I1[00:36:15](#)):

Of course. Whereas a batch at home is four months. No, that makes sense. Okay. Um, and just to go back a step to the legislation around withdrawal periods. Are withdrawal periods the law to follow in pigs?

P ([00:36:36](#)):

Hm. They, they are there, if I may say so.

I1[00:36:41](#)):

Say again.

P ([00:36:43](#)):

They are, able or repeat your question

I1[00:36:46](#)):

Is it the law to follow withdrawal periods? Is it in legislation?

P ([00:36:53](#)):

It is

I100:36:55):

Because I can't find it in the Meat Control Act for pigs

P (00:36:59):

That is Meat Control Act has it. Okay. Disease Prevention Act has it.

I100:37:04):

Disease Prevention Act as well? Okay. Thank you

P (00:37:06):

Uhhuh. Disease Prevention Act.

I100:37:09):

Okay.

P (00:37:11):

It has it

I100:37:12):

Because in the Meat Control Act, I can only find it for export or for chickens. And I can't find it a pig. Okay.

P (00:37:24):

Actually that is exactly, it talks about exports. Okay. For local consumption they don't. Because of international standards. Maybe you export into a country where they have to check the drug.

I100:37:40):

Yes.

P (00:37:41):

Uh, the remnants, the residues if you like.

I100:37:44):

Yes.

P (00:37:46):

Uh, here is not, it's, it doesn't take care of that.

I100:37:51):

Yes. So, so [large integrated processor] would be covered by the Meat Control Act?

P ([00:37:57](#)):

Yes. Totally.

I1[00:37:58](#)):

And where do [large integrated processor] export to?

P ([00:38:02](#)):

I'm not sure

I1[00:38:02](#)):

I'm not sure either.

P ([00:38:03](#)):

I'm not sure.

I1[00:38:05](#)):

So, but in their, cause I've not been to their abattoir, I've been to [LIA]. But in their abattoir, would they have testing for antibiotic residues?

P ([00:38:13](#)):

No. Unless [large integrated processor]. I'm not very sure. No. But I think they have.

I1[00:38:18](#)):

You think they have? Okay.

P ([00:38:19](#)):

Yeah. Have you been there?

I1[00:38:21](#)):

No. I, I went to [LIA] yesterday.

P ([00:38:24](#)):

[LIA], they don't have. Cook your meat, destroy the drugs and eat the residue. Anyway, let's continue. Yeah. [Laughter]

I1[00:38:34](#)):

And so is there any enforcement for observing withdrawal periods in pigs?

P ([00:38:41](#)):

Now. We don't have, because the only way you can do that is when you can put measures at the slaughter points. Yeah. Where you have that facility. Just like you can find, uh, a tape worm, and you condemn that piece of liver. So you do drug analysis, spectrometer, and then, you will know the residues as they are, yeah. But now

I100:39:16):

We don't have,

P (00:39:18):

We don't have

I100:39:18):

Um, can if, if we wanted to say, okay, we want to get rid of drug residues in meat at [LIA] can you think of, um, how best we would do that

P (00:39:40):

It will take time.

I100:39:41):

Okay.

P (00:39:42):

But I have an idea.

I100:39:43):

Go on.

P (00:39:45):

It's something that disturbs me. I don't even take pork. I may not due to... I simply don't. And rarely do I take beef.

I100:39:54):

Okay. Why?

P (00:39:56):

Matunda (fruit). Yeah. Chicken. Rarely will I take. Yeah. Okay. And its because of those, those drug residues.

I100:40:06):

You worry about the drug residues

P (00:40:08):

I'm worried about those things, but there are ways now you can do it. One, is teaching these farmers. Producers. Call them. Yeah. Talk even preachers, they have to talk every other Sunday. Or Saturday. Yeah. And at the end, ask who wants to be saved. Alright, so you'll not lack one or two who will get it in his or her mind. You won't lack one or two. So this one consistently should be taught and told to the producers. Please, if you have done this, don't take it for slaughter. And then you bring a picture. You paint a very grey picture. Such that he or she understand, understands. That is one way. The other way. But here, I don't know whether it'll work. Just like a meat inspector uses those... to inspect meat. Let there also be a two stage inspection. So the only, once you inspect the carcass. For those physical things that you see, you also inspect the carcass later. Just a piece of meat with the label. This was pig number one on the line. Pig number two. Pig number three. You read them and then you put them, take them through those whatever, detectors. That that is it. So pig that passed there. If it fails this, it goes to the condemnation pit, simple, clear. Yeah. But before you do that, you have to teach the farmers. So once they know and then they defy, they will find another bottleneck where they will pass. As we have inspected. But once we have tested for the drugs, it has failed. The same with milk, the same with eggs.

I100:42:16):

Yeah. And I guess, um, having been to [LIA] yesterday, as I'm sure you know it well, the chaos. Right. Um, you couldn't, because we don't know. Okay. That's pig number one. That's pig number two. How, how would we do that?

P (00:42:37):

Uh, what we do, I I've worked in [place] slaughter houses.

I100:42:41):

Okay.

P (00:42:41):

And all what we did.

Yeah, we would put a mark. If you are the owner of a pig and you know, these, these slaughtermen, those people who take the pigs for slaughter. They have, they're consistent. It's like every other day. So you have a mark. So you bring your carcass, we put a mark that is identifiable with you. alright? Such that wherever that whatever, whatever, wherever that carcass goes, the liver, the head, the legs, if you like. They'll have your mark. So you'll have this carcass and that liver, are together. So you won't fail.

I100:43:42):

Yeah. But without, without farmer level herd mark as we have in my country, you can't do that. Right?

P (00:43:53):

You can?

I100:43:54):

You couldn't without knowing that pig has come from that farm. You can't, you can't have that system.

P (00:44:03):

No. You can have that system. You can have that system.

I1(00:44:06):

You can?

P (00:44:07):

Because don't assume that, assume all these pigs are coming from one farm.

I1(00:44:12):

Yeah.

P (00:44:13):

Because you may not know. Where they are coming from. But now, what will happen, uh, we have things we call movement permit. That we issue. Yes. We go to the farm, you make sure the pigs are not sick. They're not deformed. Then you issue a movement permit. So once that movement permit is taken to the slaughter facility. That meat inspector will retain the form. So if there is a problem It will be, these pigs were brought here from this movement permit. So where was this movement permit issued? [Place], it'll be a flow back. Taken back to that farm. Because we have a problem in this.

I1(00:45:10):

Am I right in thinking that you don't need a movement permit to move between one ward?

P (00:45:17):

No. You have to use any. Even even within. Yeah.

I1(00:45:25):

Right.

P (00:45:26):

Yes. If that, there is a producer here. And wants to move the pigs to \_\_\_ down there, two kilometers down. Movement permit and the pigs should be checked. I just send somebody go and check 'em.

I1(00:45:40):

Right? So not just [large integrated processor]. For [LIA]?

P (00:45:45):

Anywhere.

I100:45:46):

And do you think that happens?

P (00:45:47):

Yes. That is issued from here.

I100:45:50):

But do you think every pig turning up to [LIA] has a movement permit?

P (00:45:54):

No. Because some of them, let me, let me put it this way. The weakness now comes in when the meat inspector is not very keen.

I100:46:05):

Okay.

P (00:46:07):

Or when the slaughter houses slaughtering animals from five. Alright. So you'll find they have slaughtered and you are getting in there at six 30. Yeah. There are some systems and they need strengthening. They need.

I100:46:28):

Okay. And it's fascinating to um, discuss with you actually how interrelated all these issues are. That if you don't have identification at the farm level, then you can't put a testing. It's all and it all. And if you don't have movement permits, it all works together.

P (00:46:47):

It can't Yeah. If one of those chain links is off, the wheel will not turn. It will not turn.

I100:46:56):

Yeah. Thank you so much. Um, should I, should I share my, some of our findings with you?

P (00:47:05):

Yeah, please.

I100:47:06):

So, um, [I2's] project was going into [LIA] and doing lots of carcass grading, um, for lesion scoring, um, and also testing for antibiotic residues. Now this isn't published. Um, so it's very much just a, a figure that we have from the project. It hasn't been verified or anything like that. Um, his work said that 34% had antibiotic residues above legal limits. Mm-hmm. Does that figure sound high low to you, about right. Does that surprise you?

P (00:47:49):

No. I just want to be honest.

I100:47:50):

Yeah. I want you to be honest. Thank you.

P (00:47:52):

It doesn't surprise me. In fact, I thought it was 50%

I100:47:57):

<laugh>. Really? For antibiotic residues.

P (00:48:00):

For antibiotic residues.

I100:48:04):

Do you think that farmers are using that much antibiotic?

P (00:48:08):

Actually, let me put this here.

I100:48:09):

Yeah.

P (00:48:11):

You know, it is like we are transitioning

I100:48:14):

Yes.

P (00:48:14):

From vets or para vets. Yeah. Using antibiotics to farmers buying their own antibiotics. It is a chain that has broken things, because they are, there is a producer of those antibiotics. There is a distributor. A distributor will get a batch of drugs from the store to take to the field to sell to them to, to Agrovets. If you like. But along the way you find these, uh, distributor is squeezed. For sales. You get me. So they have truce with uh, field staff on Wednesday, I'll be in [place] at exactly 10. Because they know once the distributor gives the drug to the Agrovet man, the agrovet will have to put a profit for himself or herself. But this distributor will give these vets in the van. In the van are the price he or she's giving to the, you get me.

I100:49:28):

Yes.

P ([00:49:28](#)):

So what will happen? So these drugs are every everywhere. Yeah. Even if I had to control, I have to be mobile. I have to know the company selling drugs within [places]. I have to go to agrovets and call each and every company. And tell them no selling outside, agrovets. Then once that one stops, if systems work. Once that one stops. I now face the agrovets fellows. Selling to farmers directly. Unless the farmer has a prescription from a qualified vet. We agreed like that. Then the use of drugs by farmers directly will reduce. You get me

I1[00:50:20](#)):

Yes. When you say a qualified vet, do you mean including animal health assistant or would you, you like to see only vets allowed to prescribe?

P ([00:50:30](#)):

Actually it is, there is a change. There is a change of the act. So even the paravets can prescribe after their internship. So they undergo one year internship.

I1[00:50:47](#)):

Yeah.

P ([00:50:50](#)):

So I will show them how to use these drugs. Okay. We'll talk about them. So after one year the act now allows the animal health assistant to prescribe

I1[00:51:02](#)):

And is that good or bad?

P ([00:51:04](#)):

Mm. Um, 50/50.

I1[00:51:07](#)):

Ok. Could be good if they're trained well

P ([00:51:13](#)):

Yeah, it could be good. Let me give you an example. <Identifiable>

I1[00:52:19](#)):

Oh wow.

P ([00:52:20](#)):

I1[00:53:10](#)):

Okay. So, um, I have found in interviewing farmers, um, I've found the same as you that they know what a withdrawal period is. Uh, and they might not know to look on the bottle, but they have all said, we wait at least two weeks, which I think covers most things

P (00:53:32):

Yeah. Yeah. Because it's three to four days. Very rarely twenty one days.

I100:53:38):

So I also agree with you that the awareness is there. Um, I haven't found many examples of where I think a withdrawal period has been broken, but I don't know that I'm capturing every antibiotic use. So do you remember I, um, left them with a bucket, uh, to put in the empty medicines. I left them with a clipboard to write down each time they use a medicine. In the buckets I got some, some things. In the clipboard, I got some things. Then on the final visit, I take along a big bag of empty drugs and I get them to sort through and they say, yes, I have used no, I have used, um, I have not used. And in the end they come out with their pile that they've used in the last month. Now the pile that they have used in the month, in the last month for some of them is very different to what they've told me and what is on the clipboard. So I have no idea whether or not I am finding out what medicines they are using. Um, the only time that I think a withdrawal period might have been broken was in the big pile of drugs that came out at the end of them sorting through. And I said when, when were these ones used, uh, he said the vet came, um, three weeks ago to give lots of injections to make them grow better. Uh, and then they had to send them to slaughter because they had a water shortage. So yeah, that to me, you can't really avoid the water shortage. They have suddenly needed to sell their pigs. Right. And they can't afford just to throw them in the bin. Um, so then I kind of look to the vet, who I hope as an animal health assistant and not a vet, why are you giving antibiotics to make them grow better? So yeah, I would be interested to hear your, your thoughts.

P (00:55:48):

Were they using antibiotics? Because what I think, there is a vitamin B complex they use. Okay. It's not hormones. Okay. But I know they use vitamin B complex.

I100:56:07):

To make them grow. In the last few weeks before slaughter.

P (00:56:12):

That one I'm not very sure, but because they can use them at any stage. But I don't think they use growth enhancers.

I100:56:21):

Which, which has shocked me because, and I've had this a few times of

P (00:56:24):

Did you find any?

I100:56:27):

No. And so a few times when they're sorting through the bag they're saying, yes, we have used in the last month, this one's a vitamin and this one's a dewormer. I only have antibiotics in the bag. There are no dewormers and no vitamins. So are they using an antibiotic as a vitamin and a dewormer or have they just misrecognized it?

P (00:56:55):

Come again? Again? What you found? What did you find in those buckets?

I100:57:02):

Not much. Wormers. Vitamins.

P (00:57:04):

Dewormers. Vitamins. So this is the things, these are the the vitamins. And the ones that the vet tells the farmers that they growth enhancers. So one of the best is B12 complex. B12 complex. So you'll find the very serious uh, health providers, they use that B complex. Which is very good.

I100:57:31):

Does it work? Does it do anything?

P (00:57:34):

It just converts, it increases the conversion of food. Such that the gain is higher. Uh, these are the dewormers. Mostly they use ivermectin. I know it's ivermectin one percent. alright. So those are the drugs. In fact, from the beginning those are the bottles I expected you to find in those buckets. So that is it. Mostly, most of them don't know how to use antibiotics. They don't know. But a few, you know, in every community there are those who who know, because if a farmer can start castrating, his or her own piglets, that is uh, I think

I100:58:23):

So. Um, so my, I think, because every time a farmer has shown me a drug that they have used, they have said correctly what that drug is. So I'll say, oh, what is that? Oh, it's minyoo. Yes, it is a dewormer. Oh it's a vitamin. Yes, it is a vitamin. So I think that they are probably mis recognizing what the drugs that I bring along and saying this is a dewormer. We used this two weeks ago, when actually it's an antibiotic. Do you

P (00:59:00):

Think

I100:59:01):

Think I'm right?

P (00:59:03):

Yes. You could be right. These producers are not always, they're not very keen here. They are doing, give it multivitamin and deworm my animals. And then that fellow is in a vehicle going to Naroibi.

And you are telling this farmer to keep bottles. And remember when those bottles were used. This one, doesn't have that time. And that is why you'll get there and you find she or he is not very sure. Yeah. When this one was used. So in at long last, uh, by the end of the day it is you who will look like you are more confused than the farmer. And the farmer is doing it very fast. Yes. So that he can move

I100:59:55):

Onto the next thing. And actually that goes back to your point of saying these are not stupid people. They have got lots, they've got other businesses. It's not that they are recognizing because they aren't clever enough to, it's that their mind is full.

P (01:00:16):

Actually true.

I101:00:16):

That's really, really helpful. And just my last last question to you. You, that figure doesn't surprise you. From our discussion, it sounds like you don't feel that farmers use that many antibiotics.

P (01:00:37):

Now. When you talk drug residues, have you recognized which drugs are are being found in it?

I101:00:47):

No. We don't know. So that, yeah, so we've, we don't know that is across the board.

P (01:00:52):

So, this can be ivermectin.

I101:00:55):

No, so it's just antibiotic. But I don't know if it's um,

P (01:00:59):

Penicillin, doxytetracycline

I101:01:01):

Yeah, no.

P (01:01:03):

Although you don't use tetracycline in pigs, it can bite you.

I101:01:07):

<laugh>.

P (01:01:08):

<laugh>. So mostly what you find is penicillin, streptomycin.

I1(01:01:22):

Okay.

P (01:01:24):

And enrofloxacin

I1(01:01:25):

Uhhuh,

P (01:01:27):

Those are the drugs you expect to find mostly.

I1(01:01:30):

That's what I've found. Yeah.

P (01:01:33):

Those are the drugs you are mostly going to find. And if you are talking of antibiotics, so ivermectin is not in this class of view. Yes. So these are the drugs you are expecting to

I1(01:01:48):

I haven't found very high antibiotic use.

P (01:01:53):

Mm-hmm <affirmative>

I1(01:01:54):

Do you think I am not finding, do you think they are not telling me the uses? Because with the antibiotic use that I have found, that figure is very high.

P (01:02:09):

<affirmative>. Yeah. It Now you did your research in [LIA]?

I1(01:02:16):

Yeah.

P (01:02:17):

Yes. Yes it is. So I wish you could do the same in [large integrated processor].

I1(01:02:22):

I do.

P ([01:02:22](#)):

Yeah. If you could do another of this in [large integrated processor], you'll see a totally different picture. And because of the production systems. Yes.

I([01:02:36](#)):

That's very, that's a very good idea.

P ([01:02:38](#)):

This is one animal. That is scavenging outside. Somebody's offering you 12,000. You had injected it yesterday, you don't tell that person. So during the slaughter, that site of injection is removed. You're getting me.

I([01:02:57](#)):

Oh you think they were just remove

P ([01:02:58](#)):

And why? I know, why not?

I([01:03:01](#)):

Because it's not the law.

P ([01:03:03](#)):

You, you are coming at five. Slaughter is starting at five. The meat inspector, who is supposed to do ante mortem inspection has no transport.

I([01:03:15](#)):

Yeah.

P ([01:03:16](#)):

So that person will depend on matatus, is lying around. So by the time he gets to the slaughter house, what will have happened?

I([01:03:29](#)):

It's done. Yeah.

P ([01:03:32](#)):

'But doctor, I don't even know who cut this place. I don't know. Somebody has stolen a piece of meat from my pig.' Systems. The systems are not working. You expect all these journals and you write papers and papers, you write about drug residues, but you'll continue writing and your thesis and your whatever is kept somewhere.

I1(01:04:01):

This is my biggest fear.

P (01:04:03):

Yeah. You are given, awarded a master's degree, but who is taking. In fact this drug, uh, residues research started long ago. And it is at this time now I'm finding that it's like people are coming in to train people on drug resistance. So if they had been taught about drug withdrawal periods, about drug residues. Would we be talking about drug resistance. So we are very, very fast in putting out the fire. Instead of stopping the starting of the fire.

I1 (01:04:46):

Yeah. And to stop the start of the fire, what do we need to do?

I1(01:04:51):

To stop the start of the fire. What should we do?

P (01:04:54):

Start from the beginning. Where is the problem emanating from. How are we propagating the, the problem? Yeah. So if you know where the problem is starting and the way it is being propagated, then you'll have an idea where to start. And it is through information to the producers. So information to the producers. And I think here it is an uphill task, but it can be done. So even if we started in grade one or started one wherever you started and you're somewhere. So it is an uphill task.

I1(01:05:40):

Thank you so much for your time. Yeah. Do you have anything to add that you think I should?

P1:

No, you have exhausted me.

### **Key informant interview 3**

I1(00:00):

So that's now recording. So, so you know that when you get to the slaughter house, the work slows down?

P (00:07):

Yes.

I1(00:08):

Because people are are

P (00:09):

They're trying to please me. They're trying to do things right. Yeah. So they, they tend to, that is all people, including my meat inspector. He will also be more keen. Uh, the people slaughtering will be more keen on what they're doing. They'll be more clean. They'll, they'll try to please me at that time because I am there.

I100:31):

But actually that isn't time for that.

P (00:34):

Yeah. There isn't a time for that. And that is not what they normally do. So actually today, my, my, my visit today was scheduled. So, but normally I like to go unannounced. Yeah, yeah. <laugh>, if I go unannounced, I go early. Because, so that I find them doing work as they normally do.

I100:54):

As normally. And, and you notice a difference?

P (00:57):

Yes. There's a difference.

I100:59):

What do you, what um, what do you notice is the difference?

P (01:02):

Uh, until they realize I'm there. The work is very fast. There's no keenness on hygiene, on such matters. They're not very keen on what they're doing. Uh, anybody can do anything. You know, the slaughterhouse. Everybody has their role. But, uh, that time, anybody can do anything. You, you will even see the slaughter people carrying the stamp. They're not, but until they realize, okay. The meat inspector will inspect and cut the carcass and all that, but you will find them carrying the stamp. The meat marking ink. But once I'm there, they don't do that. They don't come near it. They don't touch it. [Identifiable]

I102:08):

Yeah. So, so what would be your role and how often would you go to [LIA]?

P (02:16):

Uh, I wouldn't go too often. Maybe once a month. You know, I, I would like to believe that the meat inspectors do what they're supposed to do. So, and they are in full knowledge of the meat control act. So I expect that they will do what they are expected to do, but most of the time it's not, that's not what happens. So I, I used to go say like once, once a month. Yeah. Once a month. I'll go, I'll, um, I'll see, I'll, I'll go around the slaughterhouse and see how it, how it is physically. The physical structures. If there's water. When there was covid, I went there a little bit more often. Because there were all these measures. People were supposed to be masked. There were supposed to be clean water with soap everywhere. But now that Covid has relaxed, there's no covid. People have also relaxed there.

I103:15):

Yes, yes. Definitely. And, and so there's a, there's a vet there all the time, right?

P (03:23):

Yes.

I103:24):

Ok. And then you would be above her.

P (03:27):

Yes.

I103:27):

Right.

P (03:28):

Yes. I'm the supervisor.

I103:30):

Okay. Okay. And would she or he, um, report problems to you or,

P (03:39):

Yes.

I103:39):

Okay.

P (03:40):

Yes. Yeah. Sometimes the problems are, uh, you know, these slaughter houses are privately owned. Uh, so sometimes he, he or she would report that, um, maybe he has, um, recommended something to the management. But the management is not doing it, or is a demand about doing it because it'll eat into their income. Probably the management is allowing just anybody to come. And the meat inspector is, is there refusing these people to come, because even the slaughterhouse workers are supposed to have health medication. So it's not just anybody who should come into the slaughterhouse. Sometimes the meat inspector will try to institute this, but, uh, the management, based on their interest with this person, they will allow maybe a person. So the minute I get there, you will find everybody with, without a coat, without covering their hair, without covering their, without boots. They'll run out because I've come,

I104:47):

You're supposed to have your hair covered?

P (04:51):

You're supposed to have your hair covered. You're supposed to have, if you have long beard, you're supposed to have it covered. You're supposed to have a white coat and boots and gum boots. Some people, sometimes the people, they will allow even people to come and buy. People in plain street clothes. They will come in and they want to buy a carcass and they're allowed into the slaughterhouse. Which is not right. Yeah.

I105:15):

Okay. Okay. And how so does the vet there supervise the meat inspectors? Does, is that how the hierarchy works? That it goes meat inspectors vet you?

P (05:26):

Uh, the person at the slaughterhouse is the meat inspector. We don't have a vet, like a vet.

I105:35):

You don't,

P (05:37):

We don't have a vet like me there.

I105:39):

Not a government vet, but a private vet?

P (05:42):

No, no, no. There's no private vet. There's no private vet. There's no vet, vet surgeon Per, per se. We have, um, the meat Inspector who is an animal health technician. Yeah. The meat inspector is an animal health technician. Who has gone through meat inspection training course.

I106:01):

Right

P (06:01):

Yes. So they're in charge of the slaughterhouse. In an ideal situation, we have a vet. But, uh, with the devolution and all that, we don't have enough vets employed. So the meat inspector is the overall. He's in charge of all issues at the slaughterhouse, all meat issues in hygiene.

I106:22):

Okay. Great. Okay. That's really helpful. Thank you. In the interest of you getting home before the rain, I'm gonna skip through, I'm gonna summarize what I think, and I just want you to agree or point me in a better direction. Just to quickly summarize the pig farms in the subcounty and where they supply to. So from the research, I would summarize that, um, pig farms in this area, you have small, medium, large. The very large would go to [large integrated processor]. The small to medium ideally would go to [large integrated processor], but in some cases go to [LIA]. Um, and even the Medium

farmers who go to [large integrated processor] sometimes have to go to [LIA] because of, um, supply issues and, and that kind of stuff. So it isn't that small go to [LIA] or another local independent abattoir, medium go and large go to [large integrated processor], but it's a bit more messy than that.

P (07:32):

It's true. It's true. Uh, the large ones go to [large integrated processor], the medium ones and the small ones mostly [LIA]. And we also have one across a new one there. Uh, no, the only division from this is that sometimes even the large ones, if they have a small order, say like they need to get rid of two.

I107:57):

Yes.

P (07:57):

They will not stick to [large integrated processor], probably. They want to get rid of like two or three mothers.

I108:02):

Yes. Cull sows.

P (08:04):

Yeah. Yeah. The sows. Yeah. Yeah. They'll take to Alliance Kabuku or they will take to [LIA]. Despite them being a large farm.

I108:13):

So it's not, it's not, some of the previous publications have said large go here, medium go here, small go here. Which isn't what I'm finding. I'm finding that it's all,

P (08:23):

It's all mixed up because sometimes even somebody with 10 pigs will want to sell, I have written permits for two, which are going to [large integrated processor]. Yeah, yeah. You know, 10 pigs is a small scale. And they're selling to [large integrated processor]. So It's not, uh, it's not fixed as to where they sell.

I108:44):

Brilliant. And so, as you know, I'm, um, for reasons that we'll discuss in a moment, I'm mainly interested in those farms that sell to [LIA] and local independent abattoirs.

[Paused for phonecall then forgot to restart but asked about the role of vets and she said that for disease issues]

P (09:04):

One gets sick.

I109:05):

Okay.

P (09:06):

Unless, unless a pig is sick. That is the only time a vet will go. Uh, otherwise for any, any other time, like just calling a vet for herd health and all that, it normally doesn't happen. Yeah. Okay. They'll be called when, when the animals are sick or when, uh, if, if somebody needs them vaccinated for foot and mouth.

I109:25):

Yes, of course. And, the farmers, um, will either call a vet or an animal health assistant. Do they know which they're calling? Do they have a preference?

P (09:38):

Uh, most farmers don't. So they will sometimes even call a quack. Somebody who is not trained. As long as the.... We have a problem that the veterinary practice in Kenya is not very well regulated. So anybody starting, even somebody who has just gone to college and, uh, they have learned animal production, they will parade themselves as a vet out there. And the farmers will not know, because farmers don't care to ask these things. What are your qualifications? Uh, what, what do you do? What can't you. And then also these vets, they don't want to say this, I cannot do this. They want to do everything. Yeah. So if you, if they're called for a case in pigs and they're specialized in dogs, they'll go. So sometimes they'll do a good job, sometimes they'll do a bad job, but, um, mostly they'll go when a pig is sick.

I110:35):

Yes. Okay. And when you say, um, those who are not trained who have just done it at college, they're not even animal health assistant, then they're just complete lay people, really?

P (10:45):

Mm-hmm. Yes. Or, or just, uh, we have a, we have colleges that offer AI services. So sometimes somebody will just go for AI services. And from there, they will walk around with a box of medicine and they will say that they're a vet. Or somebody, you know, somebody who has gone to college. Uh, say we have an animal health training college that produces very good, very good animal health assistants. But once you are there for a year, you are not yet qualified. But some people, once they're there for a year and they have come for attachment. They go making clients. And, uh, they start treating for them. Yeah. Even right now I'm having, I have interns who are in doing their internship and are my supervision. Those guys are not yet qualified to go treating animals on their own. They're supposed to go around with a vet. But some will tell you, ever since they started college, we've been practicing <laugh>.

I111:44):

And that's possible because they can go into an agroveter, they can buy the medicine they want to buy. And go.

P ([11:51](#)):

Yes. Agrovets. Will even sell medicine, even antibiotics to farmers.

I ([11:56](#)):

Which is illegal.

P ([11:57](#)):

It's illegal. Yeah. It's illegal. Okay. They're supposed to sell to animal health, uh, professionals. Yes. Vets and paravets.

I ([12:06](#)):

Yeah. And then on that topic of antibiotics, why, um, in in what instances does a small medium scale pig farmer use antibiotics?

P ([12:18](#)):

In what incidences

I ([12:19](#)):

Why? Yeah, why, why would a small or medium size pig farmer use an antibiotic

P ([12:25](#)):

On their own? Or,

I ([12:27](#)):

Um, either the vet either call the vet to use or them use on their own? Would it be, is it to treat disease diseases? Is it to prevent disease? Is it to improve growth?

P ([12:35](#)):

For pigs? For pigs. What I know most is, uh, to treat diseases.

I ([12:40](#)):

Yeah.

P ([12:42](#)):

I have not heard about use of antibiotics for growth in pigs. I've heard it in poultry. But I've not heard it in pigs. I have not experienced that, but I know that they're used when the pigs are sick. They have also, also, um, farmers have this notion that pigs don't get sick, so much so, yeah. They don't see the needs for antibiotics, for pigs. Sometimes even by the time they're calling you that the pig is sick, probably it's very sick. They've seen, they've, it has been sick for a couple of days before they call because they have this thing that pigs, I mean, they're dirty, so <laugh>, they don't get sick. They, they, they eat dirt and they don't fall sick. So they even, even if it, it falls sick to a, it'll fight it. They have that thing. So sometimes by the time they're calling you the disease is far much gone.

I113:36):

Yeah. So do you agree that pigs don't get sick? Or do you think it's just what farmers say?

P (13:41):

It's just what farmers say. I don't agree. I don't agree. I think they are just as vulnerable as other animals. Yeah.

I113:49):

Yeah. And the, the farmers just aren't noticing it.

P (13:52):

They don't notice it, notice it yet. Also, um, I think the fact that one sow might like, might get like 10 piglets, so the farmers don't feel too much of a loss if they lose one or two. Is not like cows. A cow will give you just one calf. So if that calf, one, one calf dies, the farmer is very upset. But for piglets, if, if the sow loses one or two and they had 12. So the farmer is like, ah, it's okay, I'll raise the 10, you know?

I114:31):

Yeah. So, so, um, they, they're probably slower to call a vet

P (14:36):

Yes. They're slower to call a vet.

I114:37):

How interesting. Um, at what life stages are antibiotics most necessary in pigs or, um, when do farmers call you most to say, say, I need a vet out for my pigs.

P (14:54):

Piglet level. Piglet. But at piglet, um, they, they say a lot that 'I think they have pneumonia. I think they, they have, they have the scours'. Uh, yeah. Mainly that it's at piglet level.

I115:10):

And how common is it to treat a pig that is very close to slaughter, do you think? With antibiotics?

P (15:18):

How common?

I115:19):

Yeah.

P (15:24):

Okay. Now, it depends. Yeah. Let me say it depends on, uh, the market that the farmer is targeting.

I115:30):

Okay.

P (15:31):

This farmer, if this is, if a farmer is targeting to sell at, uh, to [large integrated processor]. They will avoid treating when they, when the pigs are close to, to going for slaughter. First of all, they get, um, [large integrated processor] doesn't give you, doesn't give orders, uh, quick orders. Like you, you go there and you're given an order for tomorrow. They will be given an order for like a week before. So in that one week, the farmers are very careful. They don't want their pig to fall sick during that time. And, uh, they will avoid treatment. I have not had somebody who is coming to ask for treatment when the animal is, is sick. Also, if an animal falls sick just before slaughter and they're taking to [large integrated processor], they had, they had better take less animals. If they had an order of 20, they'll take 19. If one falls sick, they will isolate it. That is not the case if they're going to the other local slaughter houses. If that happens, the pig is taken for slaughter the same day, if they fall sick.

I116:41):

So instead of treating, it goes straight to slaughter,

P (16:46):

Yes. It goes straight to slaughter. Or if the pig has been treated for 1, 2, 3 days with no improvement. It goes to slaughter with all the drugs in the system.

I116:57):

Okay. And that leads me perfectly onto, uh, what I want to talk about, which is withdrawal periods. Um, when you are prescribing medicines, how common is it for, uh, an animal health professional to talk about withdrawal periods when they are prescribing, do you think?

P (17:18):

For pigs people don't of, don't, they don't talk about withdrawal periods. Probably because they don't produce milk for sale. Yeah. People talk about withdrawals when it comes to cattle. An animal health technician will just treat a pig and go, in fact, unless the farmer tells them, ah, this pig, it's intended for slaughter in the next two days, they will, the animal health technician will not offer this information voluntarily unless a farmer mentions it. Yeah. So, uh, people are keen, they're more keen on withdrawal periods for cattle, not for pigs.

I118:01):

Okay. Okay. Because of the milk aspect?

P (18:04):

Yeah, because of the milk aspect.

I118:06):

And, and why do you think, um, a technician, if they were treat, if they were treating a pig that looked quite big, it looked like it could go to slaughter at any time. Why wouldn't they mention withdrawal periods?

P (18:22):

Uh, because they want to make the money. Because if they're treating a pig that looks like it's going for slaughter any time. The, the, the, I think the ideal situation will be, you're taking it, to be asked, I think you'd ask.

I18:37):

Okay.

P (18:39):

Are you intending to take it for slaughter? If it is going for slaughter, don't treat the pigs. They don't, don't inject the pills with antibiotics, but they want to make that money before they, they go.

I18:51):

The animal health assistant.

P (18:54):

Yes.

I18:54):

And so they want to give drugs because they make money on giving drugs.

P (19:01):

They make money on giving drugs. In Kenya, we say, when you are treating animals, you treat the farmers as well. So some animal, some farmers do not believe that you have treated the animals if you don't inject. So sometimes the, the vets and the animal health technicians will do that to please the farmer so that the farmer pays.

I19:23):

Okay. That's very interesting. And do you think that happens with antibiotic? Like why wouldn't they just give an antihistamine or something?

P (19:34):

Antihistamines are really abused in this country. They are, they are really abused. Uh, any vet or any animal technician has two or three antibiotics in their, their walks, in their bag. And, uh, we have this notion that even if you do not, most of the time, we don't make the proper diagnosis. Because we just use maybe a little bit of history and the clinical science, no lab work, no blood work, no nothing. We just give an antibiotic. A broad spectrum and hope that it treats whatever that, whatever it is that is happening. So not unless it's a, it's, it's a, it's an obvious case like MMA, like mastitis, which you can see, the other issues, even pneumonia and all that. People just give antibiotics to just cover, to

cover themselves. That they treated. And hope, that's why, they use the broad spectrum so that it, whatever problem is going on with the pig just gets covered by the drug

I120:41):

Yeah. Fine. Absolutely fine. Um, what proportion of small of of small and medium scale pig farmers do you think know what a withdrawal period is?

P (20:56):

Uh, farmers know. They all know. Yeah. They know. They know. They just don't want to be keen on it.

I121:04):

Okay.

P (21:06):

They, they, they think, uh, I mean that drug will be distributed in the body, so there's no problem. <laugh>, they might not know the exact, uh, number of days. But they know there's something like withdrawal period. Yes.

I121:23):

Super. And so, um, why might, uh, why might a farmer not observe a withdrawal period then? If they know what it is? Why, what, what stops them from observing it? If they don't observe it?

P (21:42):

It's the economics. They're avoiding losses, financial losses.

I121:47):

Okay.

P (21:47):

Because, um, if, if they don't, uh, if they observe that withdrawal period, it, it means for a pig, it means either they will not sell at the point when they have gotten the market. And by the time this withdrawal period is, is ending, the pig will have eaten into their, into their finances, into their profits. So they'd rather not observe it. <laugh>. Yeah. It's basically it's because of finances.

I122:18):

Finances, which are then affected by things like the cost of feed.

P (22:23):

Cost of feed. Yeah. Especially the cost of feed. Yeah. It's, it's really high right now

I122:28):

Yeah. Okay. Um, that's incredibly, that's incredibly useful. Along the lines of, um, what you were saying earlier about a, a large pig farmer, um, they have 20 pigs going to [large integrated processor]. One gets sick. What do they do with that one that gets sick that then can't go to [large integrated processor] and they give a medicine to what happens to it?

P ([22:56](#)):

Normally they will isolate that one. They will take a less order to [large integrated processor]. Because [large integrated processor] is, uh, if they give you an order of 20, you can take 19, but you cannot take 21. They'll not take the one extra. So they will take the, a fewer to [large integrated processor]. Now, before this one recovers, they don't have another order. Before this one recovers, it'll probably go to the next order. Or they will look for a broker, somebody who can buy it and go and sell it to another slaughterhouse

I1[23:29](#)):

Okay.

P ([23:31](#)):

Or probably somebody who wants to buy and go and breed.

I1[23:35](#)):

Oh, okay. Okay. Okay. So, um, so yes, it, that pig that has been treated that got sick could end up in somewhere like [LIA].

P ([23:47](#)):

Yes.

I1[23:49](#)):

With the residue. How likely is that, do you think?

P ([23:55](#)):

It's very likely

I1[23:57](#)):

Okay. Okay.

P ([23:58](#)):

It's very likely. Yes. It's, it's very likely. And then when it gets there, if they get probably injection sites with drugs inside, probably they'll just cut, remove and throw away. And the rest of the meat goes, cause sometimes, you know, the injection, you will find that the drug was not, it, it just accumulated in one place. In that one muscle where it was injected. So they'll just cut that part and the rest of the meat goes to the butchers.

I1[24:28](#)):

Can I show you something? And can you tell me if this is what it looks like? Because I I have not, I have not seen it before.

P (24:43):

Could be, it also depends on what, what drug was injected. Yeah. It, it would look like this. It will also be darkish, like, like iron, like you know iron, the iron injection, you'll find drugs that just accumulated. Maybe they were being injected in the same point all along. Yeah. But it would look like this.

I125:26):

It could look like that. Okay.

P (25:28):

It will look like this. And then they'll just cut that part of the meat.

I125:31):

Okay. Yeah. And, um, is it, is it the law to, uh, follow withdrawal periods?

P (25:46):

I'm unsure.

I125:47):

Okay.

P (25:48):

I'm not sure if it is in the law.

I125:50):

So I ask because I just want to make sure that, um, I've read the Meat Control Act properly. I can't find it in the Meat Control Act, apart from for export or for chickens. Um, I can't find it for pigs. So I just wanted to check that you didn't say 'yes. It's definitely the law. It's in this piece of legislation.'.

P (26:08):

I'm not, I'm not sure.

I126:11):

Um, and is there, is there enforcement of, um, of, uh, adhering to withdrawal periods either at [LIA] or [large integrated processor]?

P (26:29):

Ummm. Maybe at [large integrated processor]. Which I cannot really say for sure. But [large integrated processor] are a little bit more thorough. Even in their, even in their inspection and all

that. But the enforcement in other, I, I don't think so. No, no. That's not there. Yeah. And [large integrated processor], the, they do it because of, uh, you know, they are an Export Slaughterhouse. So they do it because of their market of the market they're targeting. Yes. Yeah. So for the rest, uh, no, I don't think so.

I127:01):

Cool. Um, that was, that was my understanding as well, so that's, that's great. Um, can you, can you think of anything that might improve the situation with withdrawal periods? So, um, specifically talking about these local independent abattoirs and the pigs going into those, can you think of anything that we could do to improve, um, the observation of withdrawal periods?

P (27:40):

Maybe what, maybe some penalties. Maybe. Maybe some penalties if, if your animal is found with, uh, pockets of injection drugs and all that. Um, also we need better testing at the slaughterhouse levels. We don't have labs. We don't have, uh, we are not able to test for antimicrobials in our meat. That is the biggest problem, because the animal might have been injected very well. There are no pockets of drugs. But it still has residues, but we can't tell because we are not able to do any tests. Um, so testing of, uh, uh, meat for residues would really be helpful. If we are able to do it at the slaughterhouse levels. Yeah.

I128:33):

Do, so one thing one person has said to me is that, um, home slaughter is a problem. Um, is it a worry if we put in more enforcement at the abattoir level, that we send people to slaughter slabs and to home slaughter?

P (28:54):

Sorry.

I128:55):

If we, if we increased the, um, enforcement, if we put in penalties at the abattoir for farmers, um, taking pigs with drug residue in them, do we, would you be concerned whether that could push them further towards home slaughter? Um, than, so instead of taking that pig with, that's had a drug to the abattoir, they slaughter it at home themselves and eat it. Would that concern you?

P (29:21):

Yes, it would, it would concern me. Although it would be a concern with, for people with a fewer number of pigs, it's not common for somebody to do a home slaughter of 5, 6, 6 pigs. They'll not get any market. They'll not sell all of it. They'll be left there with their meat. Because when you're doing home slaughter, you're targeting people close to you in the neighbourhood, maybe in the, in the neighbouring butcheries, the shops. Uh, it'll be a problem for people who are slaughtering one or two. And the people who slaughter one or two, mainly, they're not, they're not traders. They're just farmers, owners, eh. And the people who sell, people who sell to the small, even to [LIA], but then mostly they're not, they're not farmers. They're traders. They're traders who will come buy a pig from this person, a pig from this person, a pig from this person. They'll go, slaughter and sell. Yeah. So pushing them to home slaughter. Yes. But not to a big extent. Yeah. It'll not be to a big extent.

They will sell to the, to the meat trader and transfer the problem to them. Now it is your problem. That, that, that pig has residues. Yeah.

I130:42):

Okay.

P (30:43):

Yeah.

I130:44):

Do you think the traders ask, does that

P (30:47):

Traders, I don't think they ask. I don't think so. <laugh> The only, actually, the only, the only reason they will ask is, uh, so that they buy it at a lower price. Yeah. They will. 'Oh, this, this sick, this pig is sick. It has been treated for three days and, and it's not getting better.' It means the trader will buy it at a lower price,

I131:12):

But sell it to [LIA] for the same price.

P (31:14):

Yes. The only reason they will ask that is because of that, not because that they're concerned about the withdrawal periods.

I131:21):

And how often would someone bring a sick pig to [LIA] or a small, or a local abattoir? It's so busy there. Right? That, that if a pig was really sick, would everyone not see and be like, what are you doing?

P (31:41):

Uh, the, the person who brought the pig and the meat inspector would know. They would know. What usually happens is that, um, uh, depending on what kind of sickness it is, if it is, uh, fracture or something. The pig would be given priority. It would be slaughtered first. It would be slaughtered immediately. But these other illnesses, they, it'll also be given priority. But that is something they will have to do under, without many people knowing. They will not want many people to know that the pig that was slaughtered was sick.

I132:26):

No. So how do you, how do you do that when it's such a busy place? How do you get a pig under the system?

P (32:33):

You know, the pigs don't come that morning. Um, if they, if they have to be slaughtered tomorrow, they probably come today. So they will be kept in those, uh, the lairrages there. And, um, the vet, in the morning, the vet will be notified that one was sick. Or whichever was sick.

I132:58):

So they can quickly get that

P (32:58):

So that they can quickly get it <laugh>. It can, it can be slaughtered as, as the first.

I133:06):

Okay.

P (33:06):

Yeah.

I133:07):

Okay. So to give you a bit of a better background of the research, um, there was some stuff that I, I didn't want to, um, affect your thoughts, before I got your thoughts, um. The project has come about because of another project which um, went into [LIA]. Uh, he, he got lots of, um, meat samples. So sampled hundreds of pigs, um, and tested them for antibiotic residues. He, now, this isn't published. The figure could be incorrect. As you know, all tests, no testing is a hundred percent. Um, but the test that he used found that 34% were positive for antibiotic residues. Does that number surprise you? Um, is that about what you would expect? How do you feel about that number?

P (34:02):

No, I'm not surprised. Actually. I would expect it to be higher <laugh>.

I134:06):

Really?

P (34:07):

Yes. I would expect it to be higher. Because we are not very vigilant on, on antibiotic residues meat. Surely we are not. So when I hear that it's 34, I'm actually sort of relieved <laugh>. Cause I would expect, I would expect it to be much higher. Honestly,

I134:31):

As an outsider looking in at the lack of regulation and lack of enforcement, I would, but then when I hear you say pigs don't get many antibiotics because farmers think that they don't get sick, does that change the way you think about that figure or

P (34:54):

Yeah, actually <laugh>, now that I think about it. Um, wow, although, you know, pigs from [LIA] come from many places, eh? They don't just come from around. They come from many places. So, um, there are places they will use. They will, I think there are places that they use, where pigs are, they're really left to rummage in, in the, in, in the fields and in dirt and all that. I think they use more antibiotics than here. Because here it's purely intensive. There are no, there are no grazing pigs out, left out there. But here, I think because of the intensive production systems, antibiotics in pigs is not very high. But now that you sample pigs from [LIA], they come from all over. If I look at the report that they give me, or the report they used to give me, they come from all over the country. They'll come from, especially if they come from Western Kenya.

I136:01):

Oh, they come from Western Kenya to [LIA]?

P (36:02):

Yeah. They come from Western Kenya and Western Kenya they, they leave them to eat in garbage. So apart from the, in, apart from the infestation with parasites, I think they also have a lot of, um, infectious conditions. And when the farmer knows they're going to sell, probably they inject antibiotics or they call a vet to give some antibiotics. But I don't know how, how, how they end up with all those antibiotics. Yet they're not used as much. Because here, especially here in [place], the, the group that receives a lot of antibiotics is piglets.

I136:41):

Piglets. Yes. Yes. Yeah. And so then to look at, so, so I'm here to investigate that number, um, and to try and figure out where it's come from, if it's correct. Um, and, and so as you know, we left the bucket on farm. We left the clipboard on farm, and I found very low antibiotic use from those things. But what was quite interesting is that for their, for their final visit, I take along, um, so I've gone around to all the agrovets and I've bought all the antibiotics that I can buy, that are used on pigs. And I take them along and the farmers sort them into, um, ones they've used, ones they've not used, used frequently. Not used frequently, used in the last month. So we end up with a pile of the antibiotics that they've used in the last month. For some of them, I've had nothing in the bucket, nothing in the clipboard. They tell me we've not had to treat with anything. And then I have quite a big pile of antibiotics.

P (37:43):

That they have used

I137:44):

In the 'used this month' <laugh>. Which, which is confusing.

P (37:51):

Yes, that means it's the vet who came and injected and left with it. But they were supposed to write on the, on the clipboard. And they did not write

I138:01):

Why might a vet not write?

P (38:06):

Probably they think, uh, the research might come back to them, or

I138:13):

Oh,

P (38:13):

It might incriminate them for something. Probably.

I138:17):

And what could it incriminate them for?

P (38:20):

For probably they think. Maybe they, they, the meat with antibiotic residues will be traced back to them or they will be asked questions, why did you use this antibiotic? Maybe. I'm just saying maybe. I think so. I think that.

I138:37):

I hadn't thought of that. I have heard some farmers tell me that the vet doesn't want the farmer to see the bottle that they're using so that they don't, then the next time the pig is sick of the same clinical signs, as you said, they don't go and then just buy the

P (38:51):

And just buy for themselves. Yeah. The vet doesn't <laugh>. So the vet wants to hide, so that the farmer does not. Yeah. Because I told you farmers can buy antibiotics over the counter. Yeah. And the agrovet people will sell because they want to make sales. Yes.

I139:09):

Do you think that could be why?

P (39:13):

Mmm Mm but at the same time they were... Yeah. Yeah. It could be by the way. It could be, it could be, it could be that they couldn't write because they did not know what it was. And most vets don't even tell farmers that, I have used this antibiotic. They don't. And I am treating this thing

I139:34):

But actually your, your theory of, um, they thought they, maybe they think it will come back onto them. The one instance, I think I've only found one instance where the withdrawal period hasn't been observed through the whole month. Um, and that instance, uh, was, the farmer sorted the drugs, nice big pile of 'have used this month'. Nothing on the clipboard, nothing in the bucket. Um, and I said, 'what did you use these for?' He said, 'the vet came three weeks ago and injected all these

things to make the pigs grow bigger'. So I guess if a vet is using antibiotics for growth, they wouldn't want to write it?

P (40:22):

They wouldn't want to write. Yes, sure. You're right.

I140:26):

That's interesting. Okay. That's possible, isn't it?

P (40:30):

It's possible. And I'm surprised <laugh>, that it's happening. <laugh>, I didn't know that they've been used for growth promotion in pigs.

I140:39):

This is just what the farmer said. So there could have been something wrong. I don't know. And the farmer has misinterpreted. And it was a farm worker who wasn't included in a lot of decisions, so it could, could not be accurate. But then they ran out of water. So they had to sell the pigs early.

P (40:59):

Uh, because um, most of the time when, when, even me, I have been approached by farmers, Hey, just come and give uh, a booster to my pigs. So that means they want a, a vitamin booster. Uh, but most, some vets, some animal health technicians, along with a booster, they'll give an antibiotic just to cover. So you don't really know what that antibiotic is being injected for. It's just so that they give more injections and get more money.

I141:36):

That's very interesting because another thing that I'm finding is that, um, in the final pile of 'have used this month', um, people will, now I've only got antibiotics in the bag, people will get one of these antibiotics and say, the vet gave this as the wormer and gave this as the vitamin. So I don't know if the vets are giving antibiotics as wormers or vitamins or if farmers are misrecognizing antibiotics as vitamins and dewormers.

P (42:14):

Yeah, it's possible. It, either, either is possible. Yeah. Either is possible. Yeah.

I142:22):

Okay. But, but in your experience, vets will sometimes, vets or paravets, will sometimes give an antibiotic as a booster.

P (42:32):

Yes. Yeah. They will give antibiotic as a booster

I142:36):

Because then they're a better vet right. Cause the pigs will grow bigger.

P ([42:40](#)):

And if, if a pig had something underlying that was not being treated, it'll get better and start eating better and, and growing big. And they'll say, it's the booster I give, but surely it's the antibiotic that treated a condition that was there. Yeah.

I1[42:57](#)):

Thank you so much. Um, I think I have everything that I need.