

## Lusaka market, April-May 2018

### Urban trader

*Trader 1 is a middle-aged man in his forties. He stepped out of the pen and went with us about ten metres away. He was wearing an expensive looking shirt and jeans, which were very clean. I got the impression that he had not been in with the animals today or if he had, he must have been wearing some kind of protective clothing.*

Trader 1 only trades sheep, no other animals, no animal products. He only goes to this market, however, if he has costumers elsewhere he will go there to and transport the animals by motorised vehicle. His first language is Tonga but he also speaks Nyanja. He is interviewed in Nyanja, he says he sometimes can't understand my English and therefore does not want to speak English with me. He lives in Lusaka and has been doing so for several years, but he is originally from Southern Province. He has been in school seven years. He is at the market five days a week and sells 1-2 sheep a day. Some other people, mainly the ones who are selling goats, pigs and chicken, go to the market every day. He tells me that he has been trading sheep since 2008.

He misunderstands my next question about origin of animals, and tells me that t he does not treat the animals with medicines. This is mainly because many of the sheep are sold to human consumption and it can be dangerous to eat meat from animals that have been treated with medicines.

He only trades animals and does not rear them himself. He is mainly buying animals from traders who brings the animals in from other parts of Zambia, but also farmers who takes the sheep in from the rural areas. Sometimes he also buys from other traders who are at the same market as him, they can look at each other's animals and ask to buy one if they like it. He then buys it from then, and then sells them at the market. The farmers/traders wait around and then get money from trader 1 after the animals have been sold. He gives the trader/farmer some and keeps some for himself.

Most of the animals are from Southern Province & Mumbwa (which is a town in the central province). He also gets sheep from Monze, Kalomo and Mazabuka.

I then ask him about whether he knows the exact origin of every sheep, he says he does. This is because the farmer has to get clearance from the authorities to sell animals. Trader 1 has to make sure that the person that he buys animals from has been to visit the authorities before trader 1 sells the animals. When I ask him to specify authorities he says it means the village headman, the police council and the vet, more specifically the DVO. Trader 1 has to inspect these documents, otherwise the animals might be stolen. When I ask him if all of the animals here today are from Zambia he says yes. He does sell other countries, mainly to people from the DRC. The animals that are sold there are sold for human consumption, they are transported alive from Zambia to the DRC where they are slaughtered.

*Throughout the interview we are approached by people who are wondering who we are. They are asking if we are from the government, but the interpreter explains that we are not, we are from SLU/UNZA. When they heard that, they all said OK and walked away, my impression was that they were content to hear that. I get the impression that it is mostly in the beginning that people are asking us where we are from. Throughout the day we are approached by*

*people but it is mostly in the first maybe half hour, after that it calms down. Maybe word has spread about why we are there after that?*

*The interview is very noisy. We have moved away from the pen but we are constantly disturbed by screaming pigs and other animals.*

I ask trader 1 about how he can tell if a sheep is sick. He says he tells by the fact that they are weak and some are limping. He treats them (don't know if it is the limping ones or the weak ones or both, but it is unlikely that it is just the weak ones because he mentions weak first and then limping and then starts talking about treatment) with Hitech and Ivosip. But the animals are not with him for a long time, often they don't have time to get sick. We ask him how long the sheep may be with him. He says for about two days.

I probe for whether he experiences runny eyes and nose, he says yes. He says it is mainly caused by dust, they see it when it is dusty. When he sees runny eyes and nose he treats with eye drops that he gets from the chemists. When I ask about coughing he says he does not see it. I ask about difficulty breathing. He says it happens sometimes when the sheep arrive on the trucks, but it goes away quickly. This happens because they are squeezed together into a small car. This is the only cause of breathing difficulties according to him. I then probe for diarrhea. He says he sees it, especially when the grass is growing. It also happens when they are fed with maize feed. This is treated with salt. I ask about abortion. The trader has seen it one time. It is caused by being squeezed tightly together in pens. He then threw away the fetus into a bin, the content of this bin is then burned. The mother is kept separated from the rest of the animals and is retained for two weeks after they think it is ok to sell her.

I probe for whether he has experienced sheep dying suddenly without good reason. Yes, this has happened. This is because they eat plastic and sometimes maize. These animals are not sold, they are burned.

I now ask him about which diseases are the most common. He says limping, mostly because of cuts. Second most common is runny eyes and nose. Third most is diarrhea.

I now ask if someone has ever sold sick sheep to him. He says that has never happened, and also he says that the sheep are checked by a vet before he sees them. I ask if he has sold an animal that was sick. He says no.

I then ask if there are any signs of disease where it is OK to sell the animals anyway. He thinks it ok to sell if they have runny eyes and nose because this is a "natural disease". He also thinks it is ok to sell diarrhea, if it is not too severe. I then ask if there are any signs of disease where it is not ok to sell animals. He says he has never experienced this because within five days the animals are usually sold so they don't have time to develop disease.

I ask him for how long animals can stay with him before they are sold. He says for up to two weeks. They are kept in the pens during the night, they are watched by security guards and so it is rare that they are stolen. They are taken out outside the market every once in a while to eat and drink. Also, sometimes they are given food (maize meal) inside their pen.

He has seen dead animals. They die during transport. The bodies are then burnt. Market inspectors make sure that the bodies are disposed of.

I ask about whether he sees any risks with selling sick sheep. He says he can lose customers if he does it. He also says that his right to sell animals might be revoked by the authorities.

When I ask him about the protective measures he takes to protect his animals from disease he says he inspects the area where they are kept and only gives them clean food and drinking water. I ask how he cleans the pen, he explains that the floor is made out of concrete. This floor is cleaned twice a week. When asked to specify cleaning he says it means that he removes feces, throws it away at a specific place which the council takes care of. Sometimes it is used for manure. The floor is cleaned with water and disinfectant.

*He doesn't seem uneasy with the questions, however, I can tell that he feels it is taking too long, sometimes he seems a bit stressed. He did not seem irritated and he was friendly and polite the whole time.*

When asked about if there is someone that he can seek advice from he says he doesn't have to because he has a lot of experience. Other people come to him for advice. Before he was experienced he used to go to the vet shops and look for someone with training, for example in animal nutrition. Now he goes there and just buys what he needs, he knows from experience

When asked about veterinary advice he says they can be found at the showgrounds, where livestock and horses are found which is far from this market.

When asked about whether he reports sickness in his sheep, he says that if they have a strange disease he goes to the vet shop. When asked if he reports when he finds dead sheep he says no, he puts it in the bin where it is burned. There is no need to tell anyone. When I rephrase the question and ask about if he tells anyone if he sees sick sheep, he says he tells people that are around.

I then move on to ask a few knowledge questions. When I ask how diseases can be spread between goats, he says that they can be spread through the air. That's the only way he says I ask him what diseases of sheep that he knows of. He says he doesn't know any diseases, he just knows symptoms.

I move on to ask him about the laws on trade of sheep in Zambia. He says there are laws that regulates working hours, which are from 06-18. Also, traders have to make sure that they know where the animals are from. He checks their papers, he has to!

He has not experienced that trade contributes to spreading disease and so does not think that trade contributes to spreading disease.

The sheep that are sold usually go to an abattoir on the market place. Most people buy for consumption. He says that the people who wants to buy live sheep buy from the farmers directly because it is more expensive to buy from traders. The people who buys are people who buy for consumption and middle men, for example shop owners and butcheries, they also buy them for slaughter. When I ask him what happens with the animals that are not sold he says they are kept until they are sold.

He does not think there is such a thing as diseases that sheep can have and give to humans. When asked about outbreaks (several animals getting sick showing the same symptoms) he says it does happen. He thinks it is connected to the weather. It is mainly in the rainy season and in the cold season. In the rainy season he sees diarrhea and limping. In the cold season runny eyes and nose. In the hot season also diarrhea sometimes because the animals drink a lot of water. There has not been any recent outbreaks. Sometimes there are outbreaks in pigs

and cows. When I ask if he has ever experienced several deaths he says yes, this happens when they eat plastic.

### **Rural trader**

Trader 2 is middle aged, he is standing in his pen wearing a blue overall with the goats around him. He seems authoritative but not in a rude or bossy way. He is wearing an overall but has expensive looking clothes underneath. He is a bit stressed at the end of the interview because I think he thinks it is taking too long. However, there are some big sows in a pen just a few metres away, and they are screaming quite often. Trader 2 insists on speaking English. Unfortunately, he's English is bad, he is restricted when he speaks and almost every other question I have to repeat at least once because he says he can't hear me. My voice gets hoarse from shouting questions again and again. Towards the end of interview I just give him one opportunity to understand me, then I ask the interpreter to interpret instead.

Trader 2 first language is Nyanya but he also speaks Bemba and English. He has been trading since 2004. He sells animals every day except for Sundays. He only sells goats and only at this market. He is a member of the small livestock association. He does not rear animals himself, he is not a farmer. He buys animals from other farmers, not from traders. He sells to people who take the animals to the DRC or to other people at the market.

When asked to specify where the animals come from he says Southern province and central province are the most common ones. He also gets from Western province, Eastern province... any province! He mentions getting goats from Chipata (which is a town in Eastern province). He only gets animals to trade that are from Zambia. He sells to people from the DRC and Angola. The animals that are sold to DRC and Angola are sold alive, they are slaughtered on the Congolese/Angolan side.

When asked how the goats get to the market he says they are transported by trucks. Animals that are not sold are taken out to graze. Animals that are sold are either going to the abattoir or sold for keeping. He says that people who buy live animals often deworm them.

When I ask him what a good goat is he says it is fat and healthy.

We now move on to diseases. I ask how he can tell that a goat is sick. He says it will have runny eyes and walk strangely. Then I ask what signs of disease that he sees in animals that he is trading. He then mentions runny eyes and nose, limping and wounds.

When asked about what he does when he sees sickness, he says he doesn't keep the animals long so it is not a big problem for him. When I probe for runny eyes and nose, he says he treats them with meds from the shop. He doesn't know what causes it. Several times trader 2 refers to "swine flu" when talking about runny eyes and nose in goats. When I ask if he sees diarrhea he says yes, he sees it often. He treats it with medicines, sometimes salt, He cannot remember the name of the medicine but he gets it from a vet shop, people at the shop advise him to get it. He doesn't know what causes diarrhea.

He also sees coughing, treats it with medicines from the vet shop.

When asked about abortion, trader 2 says he sees it and it is caused by the goats being squeezed together when they are transported. The fetus is thrown away in the bin which is later collected. He doesn't do anything with the mother.

He has experienced sudden death, he doesn't know why they die, maybe they have eaten something for example poison? They are thrown away in the bin.

I ask if someone has ever sold a sick goat to him. He says yes, this has happened. He then treats it with medicines. I ask him if he has ever sold sick goats. Trader 2 says yes, he has. This is when the customer really wants it. He does not think it is ok to sell sick goats that are not in good condition or if they are having seizures. He does think it is ok to sell them if they have runny eyes and nose. When asked if he has ever sold the body of a dead goat he says no.

I then ask if he sees any risks with selling sick goats. He says it might affect the buyer. When I ask him to specify "affect" he says it might affect them financially. He also says it might affect his business if he starts selling goats that are sick.

I then ask him about what measures he takes to protect the goats that he is trading, he says he treats them with medicines, other than that none. The medicines he gets from vet shop. When asked about where he seeks advice from he is experienced, he doesn't have to seek advice. He doesn't report sickness or death in the animals.

We then reach the knowledge section. When asked of whether he knows how diseases are spread he says airborne, nothing else. I then ask him if animal trade can contribute to spread? He says no, at least not immediately, maybe at a later stage.

### **Rural trader**

*Trader 3 is a relatively young man (in his late twenties or early thirties). He speaks Tonga and English. He wants to do the interview in English, but he speaks badly and is struggling to understand me. It is noisy around us and it is sometimes difficult to hear him. I therefore insist on doing it in Tonga with an interpreter present at the market who interprets to my interpreter, who interprets to me.*

*Trader 3 shows signs of irritation pretty early on in the interview and is then irritated throughout. I get the impression that he thinks my questions are stupid by the way that he looks at me, his angry tone when he answers some of them, especially when I ask him to repeat or clarify something.. He only gives short answers (yes/no mainly) and because he is so irritated (he speaks with an angry tone and is tense in his shoulders) I choose to terminate the interview very quickly.*

He is at the market five days a week, he only sells goats. In addition to this market he also sells at the city market. In addition to being a trader he is also a farmer in Southern Province. Here at the market he is both trading his own animals as well as animals from other people. The goats from other locations are from Kalomo and Sinasongwe. He only gets goats from Zambia and also only sells to Zambians. Some of the animals are killed for consumption, others are kept alive.

When asked about diseases he says his animals never get sick, he never sees disease in them. When I probe for runny eyes and nose, he says he sees it during the cold season, it is caused by dust. He doesn't see diarrhea, he doesn't see coughing or sudden death. No one has sold him a sick goat and he has never sold a sick goat. He does not take any protective measures because he only buys healthy and fat goats, they don't get sick. He does not treat sick goats with medicines. He does not think that trade can contribute to disease spread. Humans cannot get sick from diseases in goats.

I ask him if there are any laws that regulate how animals are traded within Zambia? He says there are no trade laws, but there are animal transfer laws. A vet and a police has to clear goats before they are transferred.

### **Meat seller/Market customer**

*Trader 4 is a woman, maybe in her thirties. We sit down outside of the pens on the curb. She is shy, avoids looking at us, most of the time she looks straight ahead. If our eyes meet she immediately looks away. She is very polite and friendly and answers my questions all the time.*

Trader 4 first language is Nyanja. She is not a trader, instead she buys goats and take them to the abattoir on the market place for slaughter and then take the meat with her to sell in the compound. She does not have a shop where she sells it in, it is just a makeshift building. She comes to the markets every day except Sunday.

I ask what she looks at when she buys goats. She says she buys big and fat and healthy animals. When I ask her to specify healthy she says big and fat.

I ask whether she buys animals with runny eyes and nose. She says she doesn't care about that because she only has the animals for a short while. I ask her if they think there are diseases that animals can have and give it to humans, she says no, she doesn't think so. I ask her about laws that regulate trade. She says there are laws, but it is easier for her in that aspect because she is selling to the compound and not in town, in which case it would be more difficult. The abattoir that she uses is nearby. When asked if she ever sees strange looking areas on the meat or on the organs she says no, she has never seen a bad carcass. Also, she is very selective when picking animals, she only gets the best ones. She does not sell the body of dead animals.

### **Urban trader**

*Trader 4 is a man, young, late twenties early thirties. He is standing in the pen with goats around him with at least 3 other men in his age inside the pen. During the interview people start to gather on the outside of the pen, and people lean in from neighbouring pens. He sometimes makes jokes and everyone is laughing. He seems to be showing off to his friends. He is busy during the interview, at least two times he is interrupted, excuses himself and goes away to talk to a customer.*

Trader 4 speaks Bemba only and is interviewed in this language. He comes to the market Monday-Saturday. He only trades goats. When I ask where the animals that he trades are from, he says they he only trades animals from southern province, for example Choma, Mazaboka and Namwala. He also mentions Mombwe in Eastern Province. He has been in school 8 years and trading goats 8 years.

I ask him if he ever buys goats from outside of Zambia. He says yes, it happens when Zambia is outsourced of goats. Then he and others go to the borders to Botswana, Zimbabwe and Mozambique to collect goats. He also takes live goats to Kasumbalesa which is a border town to the DRC and sell them to the DRC. It is however more common that traders from DRC come to the market and buy goats and takes them home with them.

I ask what happens to the animals after they have been sold. Some people come looking for certain breeds, they are kept alive. Some are sold for slaughter. Some are taken into town, he doesn't know what happens to them. The ones that are not sold he makes sure to let graze and drink because he doesn't want them to lose weight.

I ask about what signs of disease he sees. He says he sees one thing. In the rainy season he sees skin lesions, but in general, it is rare for goats to get sick. When I probe for runny eyes and nose he says he sees it, it is caused by dirty floor. When I probe for diarrhea he says he sees it, it is caused by feeding with food that the goats are not used to and feeding with maize. He does not take any actions when he sees diarrhea.

I ask what he does when he sees a sick animal, he says the animals are sold so quickly that it is rare for them to get sick. He tells the buyer that it is sick and then the buyer will take action.

In order to protect his animals from disease he says he always cleans the pen every morning. The animals are taken out to graze and then they sweep the floor using a broom. They are careful to remove all the dirt between the concrete parts. He never treats with medicines.

I ask about if he sees coughing, he says yes, it is caused by dirty floor. He doesn't take any actions for it. When I ask about sudden death he says it is caused by transportation in crowded trucks. This doesn't affect him because he doesn't buy weak goats. The goats that die during transport are thrown away.

When I ask if he reports sickness in goats to somewhere he says no, he doesn't have to. The animals have already been checked by a vet and the police.

We move on to knowledge questions. He doesn't know how diseases are spread between goats. When asked if he thinks trade can contribute to disease, he says it can make the disease go to where the animals are going. He also says humans can get sick from the disease. When I ask him how humans can get sick, he says by eating meat from sick animals.

When I ask if he has ever sold dead goats, he says no. It is monitored by the market office that they are disposed of correctly, so he does not sell them.

I ask if there are any laws on animal trade. He says yes, for stock movement. They need clearance from the vet and the police. He also says that sometimes (don't know how often, if it is always the case etc) blood samples are taken before transport.

### **Restaurant owner/Market customer**

Trader 1 speaks Chewa, which is a language similar to Nyanja but originates from Eastern Province. I ask him to tell me about what it is that he does. This is a part time business he says. He buys goats from the market, transports them by taxi to his restaurant, slaughters them under a tree next to the road about ten metres away. He cooks the meat and sell the food. He has been doing this for ten years. He also buys from farmers who he has contact with, they come to him with their animals. These farmers are from about 50-60 km outside of Nambwa (*central province*), which is maybe 50-60 km away from Lusaka. The farmers use public transport with the goats to get to where he is. Sometimes he slaughters the animals at the market. He only buys goats, sheep are too expensive. I ask him what kind of goats he buys, he says female goats who hasn't had their first kid yet as well as castrated males. They have the tastiest meat, it is soft and does not have specific scent. He sells the food to passer-by's, people on lunch, teachers etc.

We ask if he has ever sold live goats, he says yes but this was 15 years ago. That was also the last times he used to see sickness in the goats, now he chooses the goats that he buy carefully. I ask for how long they are kept at his home. He says five days or less, five days is if the

business is slow, then it will take time between slaughtering. He lets the goats graze and drink water.

I ask what types of disease signs he used to see in the goats when he traded live ones. He said a skin disease where they get rough skin. He doesn't know the cause of it. He also saw FMD, then they developed sores around the muzzle.

He also says that goats can get flu – this is when they are coughing and has runny eyes and nose. It is caused by dirt.

I ask if he ever sees strange looking areas on the organs or meat, he says it is rare. I then ask if he thinks animals can have diseases and give it to humans, he says no.

I ask if he has ever bought goats from outside of Zambia. He says yes, 7 years ago. Goats were transported from Namibia on the way to DRC when the truck broke down and he then got the opportunity to buy them.

### **Urban trader**

*Trader 1 is a woman in her fifties. Her first language is Nyanja and so the interview is performed in this language.*

She is at the market every day but Sunday. She only trades sheep. On a typical working day she comes to the market at 6, after cleaning up at her house. She waits for the rural traders/farmers to arrive. After they have come she takes them out to let them graze. When they are out she cleans the pen. The animals are taken out again around 12-13, after that she stays for the rest of the day. On a busy day she sells 5-8 sheep but today since it is raining she has only sold 2. She buys approximately 7-8 sheep a day from the rural traders/farmers.

*She is standing alone in the pen with maybe 10 sheep around her. She seems comfortable with the situation and she is connecting well with the interpreter. When I am taking too long to write down the answers they are joking together. Occasionally a younger man, maybe in his early twenties joins in and gives a few inputs, but I feel it is only a positive contribution. A boy in his early teens is sometimes also standing beside us listening in. At a few times people approach us to ask why we are there, but not as often as last time. I think the atmosphere is calmer today, we are only disturbed sometimes by screaming sows in the background. Now that people know who we are, since we've been there before, and also that we have got permission from the office, they seem more relaxed. The animals that she has look nice. One of them has a dull looking pelt, but other than that they are in ok body condition (maybe a little bit thin some of them). At one point one of the sheep stands with an extended neck and head low, but it is breathing slowly and doesn't look like it has to struggle to get air.*

I ask what she is looking for in the sheep that she buys. She says she wants them in high quality. When I ask her to specify that she says she wants them healthy and fat.

I ask about how it works when the animals come in the morning. She says that they are put in a pen by the rural traders/farmers. Everyone gets to buy animals from the rural traders/farmers, she can't buy all of them.

I ask her what it means to be a good trader. She says it means to be good with costumers, even if they are rude to her she must be nice back.

She does not farm sheep.

I ask where the animals are from. She says Kalomo, Mamba, Sinazese, Siabongwe and Namwala in southern province, and Mombwa in Central province. I point at one of the sheep

and ask where it is from, she says Siabongwe. I ask if she knows the exact village, she says she does not know the exact village where the animals are from.

She does not sell sheep that are from outside of Zambia. I ask if she sell to other countries, she says to the DRC. I ask if she sometimes buy from traders, she says she sometimes buy from fellow-traders here at Lusaka market. I ask her what happens after the animals are sold, she says most commonly they are bought by the Lebonese and Senegalese, they slaughter them and take the meat home.

I ask her about her responsibilities as a trader. She says it is her responsibility to clean the pen and to buy healthy animals. It is her responsibility to buy medicines to the animals that are sick if the farmers/rural traders has gone.

I probe for her responsibilities about the papers. She says she needs to make sure that the permits from the vet, the council and the authorities are OK. Otherwise the animals might be stolen. I ask how she does when she buys from other traders, because then she can't see the papers. She says she trust the other trader that he/she has inspected the papers. I ask if it would be possible to falsify the papers, she says it is difficult because it is a long process with many steps. I say it sounds like a safe system, she agrees.

I ask her to elaborate on how she cleans the pen. She cleans every morning when the animals are out grazing. She removes the feces with a hard broom and dumps it in a garbage place.

We now move on to diseases in sheep. I ask her if she sees it, she says yes. I ask how. She says they are weak. I ask what is the cause of the weakness. She says it is because they are overloaded in the trucks, especially when they are mixed with pigs in the trucks. However, it is rare.

I probe for if she sees runny eyes and nose. She says she sees it and it is caused by staying long in the pen. She does not see diarrhea. She does see coughing, it is caused by her not cleaning the pens enough. She has never seen abortion and never sudden death. I ask what she does when she sees sickness. She says she reports is to veterinarians who then take samples and subscribes medicines. Also they tell her how long the sheep has to stay with her before she can sell it. I ask if there are any diseases when she does not think it is necessary to notify a veterinarian, she says she does not think it is necessary for runny eyes and nose, but she does it for coughing and diarrhea.

I ask about measures that she takes to protect the sheep that she is trading from disease. She says she sometimes disinfect the pen in addition to only removing feces. She does not sell sick sheep. I probe for what she would do if someone really wanted to buy a sick sheep, she said she would sell it but make sure that the people she is selling to knows that it is sick and also if it is on medication. She does this because otherwise it might be bad for her business.

I ask about if she has ever experienced an outbreak where several animals got sick showing the same symptoms, at the market, she says no, never.

I ask if she knows how diseases can be spread. She says they can be airborne. She then moves on to tell me that she can tell that a sheep is sick by the fact that the hair is standing up. They are also weak. I ask if she knows if there are any diseases present in other countries but not in Zambia, she says there are but she has never experienced sick animals coming to

the market from other countries and she also knows it can be prevented. I ask if animals can have diseases and humans become infected by them, she says no.

I ask her if the government or the authorities could take any measures to make her life as a trader easier. She says they could prevent the ones who bring in animals that are sick to markets since it is harmful to the business to others who are not doing this. Also she thinks the market should be made bigger, it is too small right now.

I ask how long she has been trading animals, she says since 1992. She's been in school until 7<sup>th</sup> grade.

### **Urban trader**

*Male, around 40, has nice looking clothes, is polite and nice.*

Trader 1 has traded animals since 16 years. He trades goats, pigs and sheep and is also a farmer of cattle, donkeys, pigs and goats. He is here every day except Sundays and also sells at the Kasumbalesa market (towards the Congo border). He trades his own animals as well as animals coming from other places. He trades sheep from Mumba and Luangwa from central province, also from Southern and Eastern province. I ask what it means to be a good trader, he says it means to have good capital. He sends people out to the villages sometimes to look for animals.

It starts raining so we move inside to where the people who are in charge sits. Someone is sitting there having lunch and that person quickly moves away when the respondent ask him to leave.

I ask him to describe to process for a goat or a sheep from when they leave home to when they are sold. He says farmers have to pay a fee to veterinarians, tax to the council and a fee to the police to get an animal transfer permit. The animals are then transported here, they pay 5 kwacha to the office for every head of goat (always the same fee, Monday and Saturday/Sunday, small vs big goat etc). The rural traders/farmers then sell the animals to either a trader or ordinary people who are there at that time. The goats that are sold either end up slaughtered or are taken home alive, it is more common that they are slaughtered.

The rural traders/farmers get to live in special houses at the market place for free, they can stay as long as they like. It is the traders/farmers responsibility to look after the animals until they have been sold to a trader who then takes over responsibility, or until 17.30 when the association takes over and guards the animals overnight.

The animals are transported to the market by car or truck and are offloaded between the pens. Someone from the office will go out, check their papers (transfer permit) and charge a small fee. Sheep and goats are generally kept in the pens closest to the office, while pigs are kept further away. On the right hand side rural traders/farmers will typically sell goats, while on the left hand side it is urban traders. There is a slaughterhouse for small ruminants and one for pigs.

All of the traders are members of the trader association, they pay a monthly fee to the association, the trader 2 will not say how much, it is confidential. He also says that they sometimes lend money to rural traders/farmers to enable them to transport animals, and then get payed back after they have sold. Unfortunately I do not probe for how they know that a rural trader/farmer need help and that they should loan him/her money.

### **Rural trader**

A farmer/trader going to Kasumbalesa (border town to DRC). He is a farmer and a trader of goats. He buys animals from southern province.

I ask him to describe the process to get a transfer permit;

1. Headman: record details (goats – where they are from, and owner details), the headman is a witness who certify that the goats belong to you. One also needs to bring other witnesses. Everyone, including the headman, need to sign a form. The witnesses are to prevent stolen animals being sold.
2. Police
3. Vet

I ask if two people can fake their identity and be each other's witness and sell stolen animals. His answer is that it is very difficult, the headman also need to be a witness and he/she needs to be reasonably sure that the person is selling his/her own animals before doing this, also you need to use your own NCRI (national registration card). I then say I understand that it is difficult, but could a very clever and very bad person get around it? He says that stolen animals are usually slaughtered. Authorities can then sometimes ask to see skin of slaughtered animals, and people who has had animals stolen from them can report their colour and brand. In short, people who try to sell stolen animals are likely to get caught.

Now the man has to board the bus going to Kasumbalesa, so the interview is terminated.

### **Transporter**

*Transporter, male, about 30-35 years. Sits at the driver's seat of his truck. A man is sitting at the passenger seat, slightly younger than the transporter, and listens in but does not say anything. Interview performed in Nyanga. He seems comfortable with the situation.*

He has been only transporting animals since a few months, before he only traded. I ask how people can afford transport. He says some manage on their own, they are richer. Sometimes 2-3 rural traders/farmers hire transport together to be able to afford it. I ask if it always farmers who hire transport from him or if it is also traders. He says it is both, traders are even more common than farmers. The traders gather the animals in town, transport them to Lusaka, where they sell to the traders there.

The truck that he has (about 3x8 m). He says that he can transport appr 150 goats and 20 pigs. I ask about the procedure from when they load animals in town to when they arrive in Lusaka. He tells me that the rural traders/farmers give him the transfer permit, which is a permit from the veterinarian, from the police and from the city council. At every check point the driver has to show it to the police. A checkpoint is a police stop, where they look at the papers as well as at the animals to make sure he is transporting the right ones and not transporting wildlife. In addition, there are wildlife checks as well where they check that wildlife is not being transported. When they arrive the transporter gives the papers back to the farmers/traders, who have taken the bus there. I ask then about the number of checkpoints from Choma (which is a city in Southern province that I know of, it is not the respondents home town). He says on average about 6 but it varies, if the police is suspecting crime there can be more.

I ask about injuries. He says stamping happens when the animals are overloaded. I then ask about diseases, which he does not see.

I ask of how often they check on the animals. He answers whenever they suspect something is wrong, for example because the animals are crying, they stop and sometimes they have to separate the goats.

### **Urban trader**

*For this one there are three traders who are standing in the same pen who are helping out with answering my questions, although the main respondent is the one who talks by far the most. The interview is in Nyanja. All the traders are about 25-35 years of age, all male. Throughout the interview we are interrupted by customers who are walking by. When this happens, the traders start shouting “boss boss” for men, and shows them one of the goats and yells a price, traders nearby do the same. About > 1/3 of the goats in the pen are a bit on the thin side, about 2-3 have runny eyes and nose. The main respondent does most of the talking but the others are giving input, therefore stated as “they”.*

They are goat traders who visit the market every day. This is the only market they go to. They are only traders, not farmers. I ask why people seem to prefer goats, they say it is because sheep breed slowly whereas goats breed more often.

I ask what it means to be a good goat trader. They think it means to be good at attracting costumers and to keep the environment clean so that costumers aren't scared off, and to have healthy animals that people want to buy.

I ask where they get the goats from. They say the southern province is the major supplier. I ask them to mention towns more specifically. They then mention Choma, Nazabuka, Monze, Kalomo, Namwala, Mamba, Dudumwezi. I ask if they know the village where the goats are from, they say they don't. I ask if they sell animals to other countries. They say they sell to the DRC. This is common, 5 out of 10 of the traders do it.

I move on to ask what diseases they see in their animals. They then mention a skin disease (mange) that happens during the rainy season, where the fur falls of after getting wet by the rain. They show me one of the goats who has this condition I ask what is the cause of this condition, they say again that it is rain. I ask what they do about it and they say they go to the vet shop and ask for help.

I probe for runny eyes and nose, which they see. I ask what it is caused by, they say it happens during the cold season and when they haven't cleaned the pen properly. He moves on to tell me that it is mandatory for the traders to clean the pens every morning by removing the feces. They do it with a brush.

I probe for diarrhea, which they see. It is caused by maize feed and when the animals are not given enough roughage.

Coughing and abortion they do not see. Sudden death they sometime see, it is caused by them getting weak from being overloaded in the transport to the market, and then they die.

*Now there is some commotion as a man is walking around by the pens looking at goats to buy.. They start shouting prices and bargaining with the man. He ends up walking away not buying from any of them.*

I now move on to asking if they has ever bought a sick animal. They say that it happens that people bring sick animals to the markets for traders to buy but they don't buy these animals. I say that sometimes animals can become sick if they stay with them for a few days, they answer that the goats only stay with them for maximum five days and they can't become sick

during this time. I then ask if they have ever sold a sick animal. Their answer is no, they haven't because since they don't buy sick animals they can't sell sick animals. I then ask that if, hypothetically, someone really wanted to buy a sick goat, what would they do. They answer that they would sell it but make sure that the buyer knows that it is sick. I then move on to ask what they do with animals that die, for which their answer is that they throw them away. I asked them if they would sell a dead body, and the answer is no. I then say; "what if it is really nice and fat and someone really wants to buy it?". Their answer is that goats sometimes get weak from the transport and then die shortly after arriving. They would sell a body of a goat who died because of the transport because they know it didn't die from a disease.

I ask if there are situations where it is not ok to sell sick animals. They say, again, that they don't buy sick animals and since all of them seem slightly irritated I decide not to push further on that subject. I instead ask if there are any diseases where they think it is ok to sell animals anyway. They then mention runny eyes and nose, because it is natural for them to get it sometimes, and also that it is fine to sell them with the skin condition (mange) that they showed me, because it is a mild disease.

I move on to ask if they ever seek advice if their animals are sick. They tell me that they ask their more experienced fellow traders sometimes for help. I then ask if they ever ask a veterinarian, their answer is no, they don't, they only get veterinary advice when they buy drugs at the vet shop. I ask if they tell someone if the goats are sick, he misunderstands my question and answers that he can do whatever he wants after he has bought the animals, it is his decision.

How can diseases be spread? They answer airborne, when I ask for any other way they say that's the only way.

I ask if they think animals can have diseases and give to humans, to which their answer is no. One of the men tells me he has a friend who ate a sick animal once and he didn't get sick, so that's how he knows.

I ask about protective measures that they take to protect their animals from disease. He answers that there are vet stations along the way where the animals are transported where they are dewormed if they haven't been before. He also says that vets can send sick animals home when they examine animals at the checkpoints.

I ask if people can fake the papers (transfer permits). They say that people can smuggle animals to the markets but the traders there would not buy them. I ask if the traders themselves check the papers or if it is just the office who does, they say that the office only do and that they trust them that they have checked it.

I ask them what diseases in goats they know, the answer is skin disease, but they do not know the cause of it. I ask if they know of any diseases present in other countries but not Zambia, but they don't.

### **Urban trader**

*Woman, 50-60 years old. She has a lot of big animals that she is trading. This is only a short interview since she told us when we first approached her that she was busy and that we*

*would have to be quick. She is standing in the pen with a few goats around her, all of which are comparatively big compared to the other goats at the market place.*

Are you also a farmer? No. She also says that she is a member of the trader association. Where do you buy animals from? She answers southern province, and then I ask her to specify this. She then says; Chikakanta, Monze, Mazabouka, Pemba, Chisekese, Batoka, Kalomo, Choma, Mozoka, Mamba, Sinazeze. She says that all these are major stations, but nowadays people (traders) also travel out into the villages to buy goats. I ask if she knows from traders who buys from other countries, which she doesn't, I ask she has ever buy goats from other countries and she does not.

What diseases do you know in goats? Skin disease with dandruff as well as swine flu. Swine flu she hasn't seen at the market but in the villages. Disease in pigs that infects goats and causes runny eyes and nose. She has never bought or sold a sick animal. But, hypothetically, if someone really wanted to buy a sick animal is my next question, but her answer is that it doesn't work like that and she doesn't want to respond.

Who checks the transfer permits? The office does, she trusts them that they have checked them and so she does do that herself.

She is now annoyed so I end the interview

### **Rural trader**

*Male, about 30 years old. We are sitting in a minibus when we are interviewing him. He has a friend in the front seat who sometime gives input. Also a quiet man sitting behind us at the bus who mostly is listening. People tend to walk by and stop for a few minutes to listen at the interview, before moving on. The interview is mostly in Nyanga but sometimes directly in English.*

The farmer is from a village outside of Monze. When he wants to sell animals he hires people to help him walk the three hour trip to Monze. They leave around 03 in the morning. In Monze they arrive around 06, and he either call a transport contact or go to a meeting place where everyone who wants to hire transport from the villages around Monze gathers. He then hires transport and leave for Lusaka.

I show him a map that I have made that is meant to illustrate how animals are moved within the country. I ask if it is always farmers who transports the animals to Lusaka, he says it is also traders sometimes. I ask if these traders visit the villages or just buys animals in Monze, he says it varies, some traders are lazy and will just go to the meeting place and wait for farmers to bring the animals there, others will go out into the village. The traders are mostly from Lusaka market. There are no traders in Monze only, they are only from Lusaka. Also, there are no traders who go out into the villages and then sell them to a trader in Monze, all of the traders take the goats and sheep from the villages to Lusaka.

I ask how many goats at the market today are from other countries. He says none. I ask why, he says you can't leave animals and go away for that long to find animals in another country, also, it is very expensive to buy from other countries.

I ask about the process to get transfer permits:

1. Headman

Serves the purpose to verify that the animals have not been stolen. I ask how this is

verified. He says it is through the national registration card, + the details of the person who sold the sheep or goat to that person. Headman is given details.

Pay a fee

2. Chief

The headman then reports to the chief and give a document that the farmer takes with him/her and give to the chief, who then will give a stamp on the papers, but for this step to take place the verification from the headman must have taken place

Pay a fee

3. Police

Police gives a permit. This step has to occur before seeing the vet or the council. A form is given. After that, he has to go back to the headman and chief and get them to sign it. However, he doesn't have to pay a fee again, only first time.

4. Vet

A new form is filled. In order to get the form, the previous ones must be in order. A fee is payed. For pigs, blood samples are taken but not for sheep and goats, they only check the color and number of animals, they do not check if the goat is sick.

5. Council

Pay a fee

I ask if sheep and goats can be stolen and transported to the market. He says traders from Lusaka can do it but not people from the villages because they know each other.

### **Rural trader**

*Male, around 30-35 years. He is sitting at the back of a small truck when we interview him, with a quiet friend listening in. He farms sheep and goats in a village close to Namwala.*

Ranked from most to least common way for goats to get to Lusaka;

1. A trader go out into the villages to collect goats and sheep, transport them to Namwala and then transport the animals to Lusaka. This process takes about 2 days.
2. A farmer transports the animals from the village to Lusaka. Takes 1 day.
3. A farmer transports the animals to Namwala where a trader buys them and transport them to Lusaka. He doesn't know the time for this one.
4. A trader collect animals in the villages, transport them to Namwala where another trader buys them, who then transport them to Lusaka. Takes about 5 days in total, they are 3 days with the first trader and 2 days with the second one.

In summary, the goats and sheep don't spend more than a few days with each person in the chain.

I ask about the process to get a transfer permit;

1. Council: pay a fee and get a receipt
2. Police; leave details (personal), pay a fee
3. Vet; some vets want to see the animals and take samples, other only want to see and sample pigs. Some don't even check the animals, they ask for the number of animals and then issue the form. They pay a fee.

I ask what happens at the checkpoints. He says that on the way from Choma town there is only one checkpoint, in Kafue. Here the papers are checked by the council, the vet and the

police, the vet checks the vet paper, the police checks police papers etc. The animals are not counted at the checkpoint, they are just checked to see that the right species are being transported and to see if there are some sheep/goats sick in the transport.

I ask how many goats come from other countries. He answers none, when I ask why he says it is because it is difficult and expensive to get animals from other countries.

### **Rural trader**

*Male, about 60-65 years old. He is standing by a car just outside the office with two women by his side, who are his sisters. One of the sisters leave soon, the other is standing around listening in and gives a few inputs.*

He is a farmer of pigs, goats, cattle and chicken. He is from Kalomo district in Southern Province. I ask him when he decides that it is time to sell goats. He says he sells before the rain season starts to buy fertilisers, seeds and other things necessary for his farm, to pay for school fees as well as in an emergency when he is in need of quick cash. He also says that in Zambia people don't have bank accounts, they have animals instead.

I ask him to describe the process to get a transfer permit. He answers:

1. Village headman – in the village  
Here he pays a fee and is given a receipt of payment. A witness has to be brought who certify that the animals belong to him.
2. Vet council – in the village  
Pays a fee and the animals are seen. A form is filled out with the exact number of goats, number of males/females etc.
3. Police station  
Given a form and pays a new fee. The police checks the paper and gives a stamp

He says that the prices are negotiable at every step

I ask more about the procedure at the vet to get a transfer permit. He says that the vet has to see the animals. However, he or she only observes them, not examines them. I ask how the vet can know for sure that the animals are not sick if they are not being examined. The farmer tells me that they look at the skin of the goat, the fur stands up when they are sick. I ask then if the could miss that sign when he/she is only observing them, he says only inexperienced people would do that. He also tells me that in his village his knowledge and competences in veterinary medicine are used, he has been trained in giving injections etc.

I then ask how the vet or the police can know that the animals have not been stolen. He says they are branded. If someone buys goats from someone with a different brand they make documents to certify that the goats have been sold. However, stolen goats can reach Lusaka without being caught, but it is difficult, and the owners of stolen animals will often go to the market in search of them, because a lot of animals end up there. I ask again how it is guaranteed that the animals are not stolen. He answers a witness have to come too to the village headman, who confirms that the animals belong to him. People who are selling animals that were stolen will usually not get papers from the village headman in their own village.

I ask what happens at the police. He pays a fee (small fee). The police only checks the paper and give them a stamp. The documents that the trader has to show at the police reduces the risk of sick goats/sheep are stolen.

I ask how it works for poor farmers who can't afford to brand the animals, how can you then be sure that no animals are stolen if not all animals are branded when they are transported. His answer is that the head man can support farmers to brand animals but they have to pay a small amount for this service. He also says that the same brands can be used by other people, for example if the trader has a grandfather who is a trader also and the grandfather has a brand, the same brand can be used for several persons.

I then ask of what happens at the checkpoints when the permit is checked. He says the farmer only have to show the papers to the police. The police will make sure that the goats are not overloaded. However, police is easily bribed.

### **Rural trader**

*The trader is in his thirties, male. He is sitting on the back of the truck with another farmer next to him. The other trader is listening in but not really talking. The interview is in Nyanga. While we are talking there are at least 4 big trucks leaving fully loaded with goats and chickens in cages on the roof, which we are told are going to Kasumbalesa (DRC border town). The goats are alive in the trucks, two floors in the truck packed with animals. Also, there is a lot of movement going on at the market.*

He is a farmer of goat, pigs and chicken, from Kalomo district. I ask when he decides that it is time to sell goats, his answer is that when he sells he likes to sell many at once. Sometimes he will sell many because they eat other people's crops.

I ask him to describe the process to sell goats at the market. He says you need the following documents;

1. Headman  
Give details (headman name, phone number, ID-number, full name etc)  
Pay a fee, given a receipt
2. Vet  
Pay a fee, checks to see if they are healthy and it is not ok to go if the animals are sick. The vet will not only observe but also touch and examine them. I ask if the vet could miss a sick animal, he says yes, because he/she is not checking all goats individually
3. Council  
Pay a fee
4. Police  
Show the receipt from the headman, which gives the details to the police

At the vet, the trader tells me that for pigs, blood samples need to be taken, sent to Lusaka and then wait for results before a permit to move animals is granted. Goats on the other hand don't really get sick because they eat a lot of grass, leaves and dry human feces, which protects them from disease.

I ask if it possible to sell animals that were stolen. His answer is that it is easy to transport them but they are easily caught since owners of stolen animals will call the checkpoints and

people there will then keep an eye out. I ask then about branding animals, he says it is only animals that are or have been transported that need a brand in Zambia.

I move on to ask about the possibility to present fake papers. His response is that it is possible if you pretend to be someone else, but since a lot of stamps are given on the forms, they are easily caught. I ask if the same papers can be used twice, he says it is not allowed and since a receipt is given it can't, because there is a date put on it.

I ask how many goats are from other countries here. They answer none, they know this because they can tell on the accent that people have who are from other countries (they can hear that someone is from another country and link that info to if the person has brought goats/sheep or no). I ask why people are not buying from other countries. He says he rather buys from other Zambian farmers. He has a few times before bought from Zimbabwe and Botswana, because they are close and because they have nice animals there. These animals are not for sale at a market, they are for breeding purposes or sell to close neighbours to keep the genes close by, otherwise the nice breed that you have troubled yourself into getting will disappear.

*There is a lot of noise at the market today and a lot of activities, cars, people walking around selling things etc.*

I ask if there are any risks with buying goats from other countries. He says there are risks, but they ask the people they are buying from if the goat could have diseases and how that disease should be treated. I ask if, theoretically, such an animal could be transported to the market, even they are mostly used for breeding? His answer is yes, as long as all the papers are in order.

### **Office people receiving goats/sheep**

*Just as we are about to leave the market a trailer with several goats tied to the railings arrives. The goats are offloaded and we choose to observe the process. They are first offloaded into one pen, and then taken to another pen further away.*

There are two people from the office there observing the process. I ask them to tell me what they are doing. They take payment for each animal (5ZMW) and counts them, then gives a report to the office. On the report the owners name is included, number of animals and if they have payed for transport. This is noted in a black notebook. The system is that if a trader can't afford to pay for transport straight away, the association will give them money for transport if they are members. Then the trader will pay back when he/she has money. I ask if they check the transfer permit, they say no. I ask if someone else at the office checks, they say no.

### **Office worker**

*Male, 40-45 years. Interviewed at one of the desks at the office, at some points other people come in to do other business, at these times I struggle to hear him because he quiets down, but when we are alone he seems comfortable with interviews. However, he only give really short answers, I have to drag information out of him and ask many follow-up questions.*

We discuss the number of middle men on the way to the market. Ranked from most to least common;

1. Trader who go out into the villages and transport to Lusaka
2. Farmer who takes the animals to a nearby town where he sells to a trader who transports to Lusaka
3. Farmer transports all the way to Lusaka
4. A trader go out into the village, sell to a new trader in town, who transports to Lusaka and sell to a trader at Lusaka market.

He also says a lot of the traders here talk about them as farmers, but in reality they are traders. Traders are more common than farmers when it comes to transporting them here. The traders here at Lusaka market have one pen where they sell goats/sheep from, they are not moved around.

I ask him to describe the SLAZ association. There is a board and a management. The board is in charge of communicating with the outside. The management is in charge of running the market. I ask if traders that are not selling here in Lusaka are members of the association, he says some are, they have some members in other provinces.

I ask him to describe a typical working day. He says he supervises the running of the place, the disciplinary part (a trader is disciplined if he/she steals, uses a bad language and mishandles someone), and solves problems with farmers, which are usually misunderstandings. The reason why the SLAZ association is important is to link farmers and traders, according to the respondent. I ask if chicken traders are also part of the association, he says yes, and also the slaughterhouse.

I ask if the transfer permits are checked by the office when the animals arrive, he says no, they are only checked in transit on the way here.

I ask if they have routines to walk around to check if they see sick animals, he says they are thinking about implementing that, but right now there are no routines for this.

I ask about other big sheep and goat markets in Zambia; he answers Kasumbalesa towards the DRC, and a smaller one in Kitwe (Copperbelt).

I ask how many goats and sheep here are from other countries. He says they are usually local. He says people sometime buy goats and sheep from Mozambique and Zimbabwe. I ask about which countries traders here sell to, he says DRC mostly but also Angola. I ask why people in DRC buy goats from Zambia. He explains that in the DRC area close to the border to Zambia there are very few goats and bad roads and Lusaka is close, it is easier for people there to buy from Lusaka compared to in the DRC. I ask if there is any selling of DRC goats to Zambia, he says it is possible for it to happen but since there are very few goats there close to the Zambian border in the DRC it is likely not to be very common. I ask if all goats who are going to Kasumbalesa are first passing through Lusaka, he says that many do but some are going directly to the market there.

We move on to talk about diseases that are common at the market. He says that there is a common skin disease, which is caused by the rains. Coughing and diarrhea is uncommon. Sudden death does occur, but it is because they are overloaded in the transport. I ask if he ever seek advice from someone if he needs help regarding infectious diseases or if anyone else at the market is in need of help. He says that traders should come to the office if they

need help, the respondent has veterinary related training and people can ask him for help. I probe for veterinary help, he says there is a vet office in town that they can seek help from. I ask if they report to anyone if they find sick animals. He says that traders should report to the office. I ask what happens if traders report to the office. He tells me notes are then taken on the outbreak and the office also communicate with the government. There has never been any outbreak of disease, which is because the animals are only there for a short time.

I ask if sheep and goats can be sold at the market without having the transfer permits. He says it can be done but it is a high risk that they will get caught. I ask if it is possible to have valid transfer permits and still sell stolen animals. He says no, because you need paper from the headman of the village, and locals introduce you to the headman.

I ask if the office has some preventative measures to prevent disease at the market. He says there aren't any right now but they are working on it. When I ask what he means he says they want to help the management to be able to identify diseases, when I ask how he says through workshops.

Just out of curiosity, I end with asking about the cholera outbreak and how the market was affected. He says business was definitely affected. The market was closed for about 1-2 weeks to clean up the environment. People were not allowed there and could hence not restock animals.

### **Congolese trader/market customer**

*Man, about 40 years old. He speaks French and understands and speaks limited Nyanja. We manage to find an interpreter who speaks French and nyanja, so I speak to my interpreter who either speaks to the interpreter or directly to the Congolese man.*

He is not a farmer, only a trader of sheep and goats. I ask why DRC people buy goats from Zambia. He says that it is easier to get animals from Lusaka compared to the DRC, because in the border region to Zambia there are very few goats, it is closer to Lusaka compared to places in the DRC where you can get goats, and also the roads are better in Zambia than in the DRC. I ask if they also sell goats to Zambia from the DRC, he says no, because there are very few goats in the border region and the roads are bad.

I ask how many goats they buy and take with them. He says they are usually here for 3-4 days to buy. The number depends on how many are available, but sometimes they buy up to 100 goats a day. I ask what happens to the goats when they get to the DRC. He says they are usually slaughtered for human consumption. Some are kept alive, but only for them to grow big, then they are slaughtered.

I ask about the procedure to cross the border. He says he needs a transfer permit. A vet in the DRC need to check the animals. He/she checks for sick animals, if they find one they destroy and burn it. Then they go to the council, which is called "service de quarantaine". There they make sure that the fee to cross the border has been payed. These are the only checkpoints. On the other side of the border, in Lubumbashi, there is a big market. He sells the goats to traders there.

I ask if he sees any risks with buying from Zambia and taking live goats to the DRC. He says the risks are mainly that they may die of heatstroke when he is transporting them during the day. Also, he says he has to pay bribes at the police checks here in Zambia. I ask if it is a risk that sick animals will be bought in Zambia and taken into DRC, he says no, it will be caught by the vet and burned.

He also says that when a sick animal is found and destroyed+burned, also the transporter will be checked for bacteria on the skin, and if they find something, he/she will not be allowed to tend to animals for a period.

### **Short notes from observations at the slaughter house**

*The slaughterhouse is a room that is about 30-40 m<sup>2</sup> big, consisting of one big room. On one of the ends of the building there is a small waiting area where customer can stand and observe the slaughter. In the center there is a structure where goats and sheep can be hung in strings, upside down. Below there is a drainage that frequently clogs up so that water mixed with feces mixed with blood floods the floor. There is a water tap, and around the walls there are benches covered with cardboard that reportedly are changed daily. Workers are using these benches to process the meat and organs. It is extremely hot and humid in there, the stench is indescribable and there are flies everywhere. The workers are wearing their own personal clothing which often are dirty. Most are wearing gumboots but many are walking around on the dirty floor with sandals on.*

*The goats/sheep are hung upside down, the throat is slit and they wait for the animal to die. They skin the animal and remove the abdominal organs. When they remove the intestines they just pull it off, and fecal contamination is common. To keep track of which organs belonged to which animal they place the skin of the goat/sheep on the floor and organs on top. The slaughterers have one bucket that they frequently clean their hands in, throw water from on the carcass, and clean intestines in (making fecal material fall into the water). I only see people wash their hands, and occasionally their knives, in the bucket (which often contains very dirty water). No one is wearing gloves. Many slaughterers will put the knife, either in a muscle on the carcass or in their boot, when they are not using it. There is one knife sharpener that is passed around between workers, without being cleaned.*

### **Slaughter house worker**

*Man, around 35 years. We first stand outside of the abattoir but since the sun is strong, we move so that we are standing in the shade inside of the 2 m wall. First we are talking to another man but he soon tells us to talk to this man instead. Another person is standing next to us quietly listening in. Overall, it is calm and quiet.*

He has been working at the abattoir for more than 12 years. In order to become a slaughterhouse worker, one need to be a member of the trader association. There is no training other than on the job training. In average he slaughters about 10-12 sheep and goats per day. When I ask what it means to be a good slaughterer, he says being clean and fast with the slaughter procedures. I ask what he means when he says being clean, to which his answer is to clean the bucket that they use, clean the utensils and to rinse the carcass.

I ask if they ever see any strange changes on organs or the meat. He says they sometimes see ulcers on the intestines. This happens during the rainy season, he doesn't know the cause of it. He doesn't see any other changes. I ask what he does about the organs and the body when he sees this, to which his answer is that they notify the customer and then throws the intestines away, but the rest of the organs and the meat is ok.

I ask him to describe how he cleans the bucket. He says he usually will change water twice per goat (he uses two buckets of water per goat). He rinses it with clean water. The knife is cleaned with water and a sponge. He does this before he starts slaughtering a new animal as

well as when he is done with one. He says it is not allowed to carry the knife in the boot like many do, he has a pocket where he carries the knife or he puts it on a table.

I ask if he has ever worked sick. He says no. I probe for cold, flu etc. He says he can't work sick because he might infect his colleagues.

I ask if animals can have diseases and give to humans, to which his answer is no. When I ask if eating meat from a sick animal is a risk he says no, as long as the intestines are ok there is no risk. I ask what causes diseases. He says diseases are caused by unclean environment and bad smell, as well as cold weather which can give runny eyes and nose. He also says that feed can give disease, for example changing feeding to something that the animal is not used to. I try to probe for if he knows more specifically what causes disease (trying to assess his knowledge on pathogens). I end up asking if he knows what bacteria are. He says that for example when goats and sheep are fed with maize, bacteria can make them develop diarrhea and also cough.

I also ask about the footwear that he is wearing (he is in slippers right now but says he uses gumboots while working). He washes them with soap and water at the end of the day every day. His clothes are usually taken home and washed by his wife, sometimes when he ends work early he also washes them at work. I ask how diseases can be spread. He says that some things such as coughing in goats can be airborne. He also says that they can be spread sexually. More specifically, runny eyes and nose and coughing in goats can be sexually transmitted.

I ask about his responsibilities as a slaughterhouse worker. He says he is an acting supervisor and will take over if the manager goes away.

I end with asking if he has ever told someone that they shouldn't eat the meat of an animal. He says yes. This is when someone has been rough on the sheep or goat (kicked it etc), then you can see blood clots in the meat which then will rot. This should not be eaten and he makes sure that the owner knows this.

### **Urban trader**

*He is sitting on a chair in the setting sun just outside the pen, so we sit down next to him on the curb. He is about 50 years old. At first he wants me to give him money to answer my questions but is still willing to answer after I tell him that I have no money to give. He is interviewed in Nyanja.*

He only trades goats, and usually only on this market but sometimes he also goes to Kasumbalesa (DRC border). I ask what it means to be a good trader. He answers that a good trader is someone who can relate to customers and be good to them, even if they are rude. A good trader will also keep the environment clean to attract customers and have nice looking goats that sell quickly. I ask where he gets animals from. His answer is southern province, from Kafue to Livingstone. I ask for more specific places. He then says Mazaboka, Choma, Monze, Kalomo, Zimba, Chipata, Momba in central province. He also buys from Eastern province. I ask if he ever gets animals from the northern province, to which his answer is no. When I ask why he says it is because the land there is not good for keeping livestock.

When I ask how many goats there are from other countries he says none. I ask if he has ever bought goats from other countries, to which his answer is no. He says that people buy goats

for breeding but not to sell at markets. I ask which countries he sells to, he says mainly DRC and sometimes Angola. I ask why he sell to other countries. He says that the prices are better in DRC, especially if there are many goats at the Lusaka markets, then selling prices are lower there.

Out of 10, how many traders sell to other countries? He says more like 100/100, and he also says that the demand to the DRC is high. He sells goats every day to the DRC. He says it is mostly Zambians who buy goats and take them to DRC, but it is common also for people to come from the DRC to buy goats. I ask what happens to the goats in the DRC. He says they are sold for human consumption.

I then ask how many out of 10 goats sold within Zambia are kept alive vs sold for human consumption. He says that for him most are taken to other countries and most are slaughtered, and then he says that about 50% are kept alive, 50% are slaughtered.

In a day he will sell about 5 animals if business is slow, 10 if it is a busy day. I ask how many he will usually have left at the end of the day, he says 5. An animal can stay with him from about 2 days, 4-7 days if market is slow.

I ask if he also a farmer in addition to being a trader. He says he is, he has a farm in Eastern province but he is very rarely there, he is living in Lusaka. He says he sometimes sees FMD (blisters around the muzzle) in the goats that he is trading. He slaughters the goats to protect the others from disease.

I move on to ask what diseases he sees in goats that he is trading. He says that he sees skin disease (looks like mange), he doesn't know the cause of it. It is rare for him to buy an animal like this, if he does he will usually try to give the goat back to the owner. He says it is rare to see serious disease at the market. Also, he says it is the responsibility of the council and the vet to prevent disease from getting to the market.

He also says that there is FMD in Central Province Chisamba right now and that there is a ban on animal movement. He also says that birds are spreading FMD.

I ask about if he uses medicines to treat animals that he is trading. He says he buys medicines from the vet shop, this to prevent the disease from spreading.

I ask if trade can contribute to the spread of infectious diseases. He misunderstands the question, and says that diseases can be spread through dirty water from the abattoir, which the goats may drink and get sick, since the goats at the abattoir may have diseases that is spread in the water. I ask if he thinks animals can have diseases and give to humans, he says he does not know.

I ask if he has ever bought a sick animal. He says no. Why? Because it would put his life in danger. When I ask him to specify this he says that it would be bad for his business. I ask if there are any diseases in animals where it is ok to sell. He says it is ok if it has been injured during transport, he will then explain to the customer what has happened and reduce the price. He also says that runny nose is ok, since it is caused by dirty environment. I ask if there are situations where it is ok to sell the body of a dead animal. He says no, not ok. He does not know when an animal died, it might have only died recently during transport but he doesn't know when for sure, and because of this it is not ok to sell it!

### **Transporter**

Appr 50 year old man. He has been a transporter for about 10 years. He is also a farmer of cattle and goats, as well as a trader of goats, buying from nearby farms (lives in Kalomo district). He has a truck of about 2.5 x 8 m, which according to him can transport up to 100 goats.

He has to carry the transfer permit since he is the one that is with the animals. On the way here from Kalomo district he had to show the paper at 6 checkpoints. At the checkpoints the truck is checked, they check to see if the animals are mixed with pigs, if there are people back there. At three of the six checkpoints there is a vet, police and council member. At the rest there is only police.

Is it possible to move animals without having a transfer permit? No, it is not allowed. I ask again if it would be possible for me, if I was a really bad person, to transport goats without the correct permit. He says the risk of getting caught is high.

Has he ever transported to another country? No. From another country? No.

Does it ever happen that one of the goats injure themselves during the transport? Not really, only if they are overloading them. He has experienced it once, he took it to the vet. I ask if it happens that goats die during the trip, for example by overloading. He says yes, he then took it to the vet for a p-m, they couldn't find anything and concluded that it died from overloading. They burnt the body.

Other than that he hasn't experienced death during transport.

He hasn't witnessed disease in goats that he is transporting. I probe for diarrhea, runny eyes and nose etc, he says still no. At his farm he has problems with skin disease, which he treats with Ivermectin.

### **Rural trader**

*Male, about 30 years old. We interview him in the shade next to the brick wall that demarcates the goat market area. For most of the time there is another man in the same age standing next to him listening but not really saying anything. At some points however we are surrounded by young men who give input. We are approached several times by people who wants to know what we are doing, and they are always happy to hear that I am doing a research project. He seem very calm and at ease with answering questions. The interview is in Nyanja.*

He is a farmer of maize, groundnuts and goats, cattle, chicken and guinea fowl. He is also a trader of goats. He will go to other traders in the village as well as to farmers in other villages, buy goats, and then take them to Lusaka.

I ask how he decides that it is time to sell goats from his farm. He decides that it is time to sell when there are problems, for example when he needs money for school fees, to pay hospital bills and to buy farm things for the farming season. However, he is mostly trading goats from other farmers. Also the goats need to be big enough.

He says he needs about five days to gather goats to the number that he wants, he will usually get about two goats in a day. He will go by car to town and then transport the animals to Lusaka, in total it takes about 7 days. The most common is a trader like him who travels around in the villages and takes them to Lusaka. Second most common is a farmer who takes them him/herself to Lusaka. Third most common is farmer who takes them to a big town for example Choma, sell to traders at the market there, and then the trader takes them to Lusaka. The last alternative (trader gathers in villages and takes to Choma, sells to trader there who then take to Lusaka) does not apply as far as he knows.

I ask about the process for when he wants to sell the goats. He says he first go to the village headman, then to a vet in Choma, the police in Choma and then he transports them here.

1. Headman: the headman need details on the number of animals and writes the number on a form. He also gets information on the NIRC (national individual registration card). If he has bought goats from other people the headman also need details from

this. He pays 5 kwacha regardless of number of animals.

2. Vet; pays a fee based on the number of animals. The vet checks the animals to see that they are not sick, if they are they are not allowed to go. They not only look on the animals but also examine them and touch them. If some animals are sick they will take blood samples from them, and all of the animals have to be taken back, not just the sick ones.
3. Police; number plate of the transporting vehicle, number of animals, drivers name and checks the driver's license.

I ask if stolen animals can get through this system and end up on the market. He says no, when goats are stolen the checkpoints are notified and they will keep an eye out for the animals.

I ask if all animals are branded. He says yes. I ask what people who can't afford that do. He says that they will mark by cutting the ears instead.

I ask about how many animals that are there that are from other countries. He says none. I ask him why, he says it is expensive to transport animals over long distances, and because of that it will be bad for business. I ask if he buys goats from other countries to his farm. He says no. I ask why. He says he would want to but he cant afford it.

Has anyone ever sold you a sick animal? He says no.

I ask what diseases he sees in the animals at his farm. He lists them and rank them like this:

1. Skin disease – caused by the rains. He treats with ivomec which cures the disease.
2. Coughing – caused by when the environment is dirty. He takes care of it by building a shelter and putting a fence on the ground so that the animals will walk on it, and feces will fall under the fence
3. Diarrhea – he says skin disease that has not been treated give rise to diarrhea, he has seen this many times. It is not his experience that food can give diarrhea.
4. Limping – caused by ticks. He uses spray. First he says he also takes them to a dip tank, but when I ask how often he does this he says it is too far away so he only sprays them

I ask about which medicines he uses to treat his animals. He says albendazon, which is a dewormer that he puts in water and then have them drink it. Also, the goats appetite will go up after being treated with this and it seem to ease pain in their stomach. I ask him if worms is a problem for him. He says yes, there are worms in the feces and the animals get skinny and look unhealthy. He also tells me that he uses traditional medicines, where he himself go out and picks a variety of roots and leaves and then boils it and let the goats (and cattle) drink it. He uses it to treat diarrhea.

I asked where he gets medicines from, he answered vet agencies. When he needs help he will ask a vet to come out and give advice.

I asked if he has ever sold a sick animal. He said (spontaneously, without probing) that he will sell if someone wants to buy a sick goat, but he will let the buyer know that it is sick.

Otherwise he will treat it himself and eat it himself. Sometimes he burns the carcass if he does not think it is ok to eat.

I ask if there are diseases where he thinks it is not ok to eat the animal. He says when they have skin disease and when they are sick in the stomach. I ask him to specify sick in the stomach. He says it is when they have diarrhea that is mixed with blood. I ask if there are diseases where it is ok to eat the body. He says it is ok to eat limping animals, he will just remove the leg and eat it. When the animals has been coughing they remove the lungs and eat the rest. If they have diarrhea but not mixed with blood he will also eat it. He will not eat if the organs are looking weird after slaughter.

I ask him if he sees any risks with eating sick animals. He says it is a risk because humans can get sick.

He does not eat dead animals, he can't since he is a Christian. I ask about situations when it is not ok to eat dead animals according to him. He says when they have died from sickness. I ask how he knows if they have died from sickness or something else. His answer is that he knows his animals well and he can see by looking at them sometimes what killed them. Other times he can't be sure just by looking at them. I ask when it is ok to eat dead animals; he says when they die from overeating (→ they suffocate) and non-bloody diarrhea.

When they open up animals that have died on their own; it is ok to eat the meat if it is healthy looking, I e it should not be green because then it is rotten. Also, if the meat is swollen like a pillow it is bad. On the organs, if it has dark spots on it it is bad and then the whole animal should be burned because then the meat is also bad. However, in some cases if the organs are bad looking but the meat looks fine he will also only remove parts of the bad organs or parts of the meat and the rest can be eaten.

I asked if he thinks animals can give diseases to humans. He answered yes. I asked how. He says it happens when sick animals who have been treated with drugs are eaten, it gives diarrhea and weakness in humans. Because of this, you need to wait before eating an animal that has been treated with drugs. I asked how long, he said about one month. I ask if you can eat a sick animal that has not been treated, he said yes at first, but then when I asked him again to clarify he said no. Also, when I asked how humans can protect themselves from diseases in animals he said by not eating sick animals.

I asked if he has experienced any outbreaks. He said every cold season there is a strange outbreak in his village. All animals that graze are affected. They collapse suddenly and die, blood is running through their nose and their bodies swell up. At post-mortems their lungs are filled with blood. I asked what they do about it. He has been trying to treat with Oxyject High-Tit, he buys it, it is not something that he has been advised to use. Veterinary help has not been sought because the vet is far away from him. I asked if any humans have died during these outbreaks, he says no. I then asked what they did with the dead bodies. He said they eat them.

(At the end of the interview I said I wasn't sure but I think it sounds like anthrax and I would advice them not to eat the dead animals since it can be dangerous).

He also tells me that farmers have a thing, like a band, that they put on the animals and the thing will give them numbers that he can interpret because he knows how to use it, and by looking at the numbers he will know what disease it is and how to treat it. At first I try to probe for how he can know but drops it since he avoids the questions.

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I ask what diseases he sees in the animals at his farm. He lists them and rank them like this:

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ask how he knows if they have died from sickness or something else. His answer is that he knows his animals well and he can see by looking at them sometimes what killed them. Other times he can't be sure just by looking at them. I ask when it is ok to eat dead animals; he says when they die from overeating (→ they suffocate) and non-bloody diarrhea.

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He also tells me that farmers have a thing, like a band, that they put on the animals and the thing will give them numbers that he can interpret because he knows how to use it, and by looking at the numbers he will know what disease it is and how to treat it. At first I try to probe for how he can know but drops it since he avoids the questions.

### **Urban trader**

*About 45-50 years, male. He is standing in the pen with goats around him. Two of the goats are coughing. He is wearing a protective overall. On his side there is a younger man who is mostly quiet but will also give input. He is interviewed in Nyanja but will occasionally answer me in English.*

He is a goat trader, he is at the market every day and is only trading at this market. He is also a farmer of goat and soybeans. He is not selling his goats because he just started keeping goats and they are not big enough yet.

A good trader is someone who is good to costumers and can negotiate the price, and keeps the environment clean. He cleans the pen every day by sweeping it with brushes. He buys

about 10 goats a day and sells about 5-10 a day. One goat can stay with him for up to one week if business is slow.

I ask where he gets animals from, he answers Southern province (batoka, kalomo) and central mombwe. I ask if he ever gets from northern province and he says no. I ask why, he answers that it is because it is too far and they have very few goats there.

I ask if he knows exact location of the goats that he is trading, he says sometimes, but he only buys and sells and where the animals are from doesn't really matter to him. He knows province however, today he only has animals from southern province.

It is most common for the goats to end up for human consumption. Out of 10, appr 8-10/10 will end up for human consumption.

When he buys goats for trade he looks for quality and size, when I ask him to define quality he says it means to be fat.

I ask how many goats are from other countries, he says none. He says sometimes there are also goat markets at showgrounds and then they will have Botswana and Zimbabwe goats there. I ask why traders at the market aren't selling goats from other countries, he says because it is bad for business since it is expensive to transport them. I ask if he sells to other countries, he says yes, the DRC, they buy often the best goats around at the market. About 5/10 goats will go there. I ask why DRC buy from Zambia, he says because they only have a few goats over there.

Listing and ranking diseases (he points out that goats very rarely get sick);

1. Diarrhea

Caused by maize food since goats are often not used to this feed, they are used to eating grass. When they have it he will reduce the price and sell it, but he will make sure that the new owner knows about it.

2. Coughing

Caused by dust and weather.

3. Runny eyes and nose

When they have runny eyes and nose and cough at his farm he will release them and they will eat some leaves that cure them.

I ask about diseases where it is not ok to sell goats, he says when it is severely sick, then he burns it. Otherwise he will ask a vet and treat it. He is very afraid of FMD right now (there is an outbreak) since it is spreading quickly. He thinks it is OK to sell goats with diarrhea that is caused by eating maize. He also says that the ones with the skin disease are easy to sell. He says that the goats are at the market only for a very short amount of time, only a few days, and will hence not have time to spread disease.

I ask if he has ever experienced sudden death, he says no, goats don't die suddenly. When I ask if he has ever, or would consider selling a dead goat, he says no, and he would not buy one either. However, he knows that a lot of the other traders will both buy and sell dead bodies. Some costumers are solely looking to buy the dead ones because they are cheap. I ask if he has ever eaten a dead goat, he says yes, several times and not becoming sick. He would not eat sick pigs however. I ask if he thinks humans can get infected by disease in animals, to which his answer is no, he has never heard of that.

I ask from where he gets advice when his animals are sick. He says he will go to a vet shop.

I ask about preventative measures he's taking at his farm: He says he will use structures that enable feces to drop below where the goats are standing. Here at the market he will sweep the floor and use a spray for ticks.

I ask if he has experienced outbreaks of disease in goats, he says no, he has never experienced this.

I ask what it is that makes goats sick, he says dirt. He recognises a sick goat on its fur, it is standing up and the goat is weak and thin. I ask how diseases are spread, he says airborne, there are no other ways. I ask if he knows about bacteria and viruses, which he does, virus can be spread by insects and bacteria is found in soil (this is an old local saying he says). Goats can, just as humans, get sick from viruses and bacteria. I ask if it is possible that the diseases that he has mentioned is caused by viruses and bacteria, he says yes, they might be caused by bacteria.

Can trade contribute to spreading disease? He says yes, but the transfer permit will make sure that this is not the case. I ask if there are any risks with trading sick animals. He says that the risk is that he will lose money when he buys a sick goat.

I ask why goats are more common here than sheep. He says it is because goats breed more (up to 3 times a year and will often get 2-3 kids per time, whereas sheep will only breed once a year. Also, goats can become pregnant even when they are still nursing. I ask if he checks the transfer permit of the animals that he is buying. He says yes, he has to, to make sure that the animals that he is buying have not been stolen. He has been 7 years in school.

### **Vet shop at Lusaka market**

Since so many people refer to the vet shop at the market place (this is where they seek advice), we go there to have a look. We are surprised to see that all the shelves are empty. In an office inside there is a man sitting with his laptop, surfing on the internet. He says he doesn't have any medicines at the moment since he is awaiting money from the bank to buy them. I ask if there is a vet working there, he says there is one but that person is only occasionally there. I ask what training he has, he says he has none and is not really involved in the veterinary medicine part, he has an expert employed who is a veterinary assistant. However, she has not been to work for about a month due to personal problems. During this time he is the only one there. He knows very little, for example when I ask what farmers often need help with, he says; I think they sometime struggle with..., is it worms? Cattle often have problem with Lumpy skin. It is mostly traders who come here but they usually buy for their animals back home and not for the goats/sheep that they have here.

### **Urban trader**

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It is most common for the goats to end up for human consumption. Out of 10, appr 8-10/10 will end up for human consumption.

When he buys goats for trade he looks for quality and size, when I ask him to define quality he says it means to be fat.

I ask how many goats are from other countries, he says none. He says sometimes there are also goat markets at showgrounds and then they will have Botswana and Zimbabwe goats there. I ask why traders at the market aren't selling goats from other countries, he says because it is bad for business since it is expensive to transport them. I ask if he sells to other countries, he says yes, the DRC, they buy often the best goats around at the market. About 5/10 goats will go there. I ask why DRC buy from Zambia, he says because they only have a few goats over there.

Listing and ranking diseases (he points out that goats very rarely get sick);

1. Diarrhea  
Caused by maize food since goats are often not used to this feed, they are used to eating grass. When they have it he will reduce the price and sell it, but he will make sure that the new owner knows about it.
2. Coughing  
Caused by dust and weather.
3. Runny eyes and nose  
When they have runny eyes and nose and cough at his farm he will release them and they will eat some leaves that cure them.

I ask about diseases where it is not ok to sell goats, he says when it is severely sick, then he burns it. Otherwise he will ask a vet and treat it. He is very afraid of FMD right now (there is an outbreak) since it is spreading quickly. He thinks it is OK to sell goats with diarrhea that is caused by eating maize. He also says that the ones with the skin disease are easy to sell. He says that the goats are at the market only for a very short amount of time, only a few days, and will hence not have time to spread disease.

I ask if he has ever experienced sudden death, he says no, goats don't die suddenly. When I ask if he has ever, or would consider selling a dead goat, he says no, and he would not buy one either. However, he knows that a lot of the other traders will both buy and sell dead

bodies. Some costumers are solely looking to buy the dead ones because they are cheap. I ask if he has ever eaten a dead goat, he says yes, several times and not becoming sick. He would not eat sick pigs however. I ask if he thinks humans can get infected by disease in animals, to which his answer is no, he has never heard of that.

I ask from where he gets advice when his animals are sick. He says he will go to a vet shop.

I ask about preventative measures hes taking at his farm: He says he will use structures that enable feces to drop below where the goats are standing. Here at the market he will sweep the floor and use a spray for ticks.

I ask if he has experienced outbreaks of disease in goats, he says no, he has never experienced this.

I ask what it is that makes goats sick, he says dirt. He recognises a sick goat on its fur, it is standing up and the goat is weak and thin. I ask how diseases are spread, he says airborne, there are no other ways. I ask if he knows about bacteria and viruses, which he does, virus can be spread by insects and bacteria is found in soil (this is an old local saying he says). Goats can, just as humans, get sick from viruses and bacteria. I ask if it is possible that the diseases that he has mentioned is caused by viruses and bacteria, he says yes, they might be caused by bacteria.

Can trade contribute to spreading disease? He says yes, but the transfer permit will make sure that this is not the case. I ask if there are any risks with trading sick animals. He says that the risk is that he will loose money when he buys a sick goat.

I ask why goats are more common here than sheep. He says it is because goats breed more (up to 3 times a year and will often get 2-3 kids per time, whereas sheep will only breed once a year. Also, goats can become pregnant even when they are still nursing. I ask if he checks the transfer permit of the animals that he is buying. He says yes, he has to, to make sure that the animals that he is buying have not been stolen. He has been 7 years in school.

### **Vet shop**

We head into town to find another vet shop to see their supply and talk to employees. At the first one they have dewormers (ivomec etc) and antibiotics (tetracyklin, PC etc), and other meds. I ask if farmers come there for advice, they say yes. The man that I am talking to has no training (but I am pretty sure he still give advice because he indicated that when she told me that farmers come there for advice). He says that their expert will help them with more advanced questions. We wait for a while to be able to talk to him but when he doesn't come we decide to leave.

### **Vet shop**

At this vet shop there is a young man who is the expert. He has a 2 year college course focused on all aspects of agriculture (also crops etc). He gives advice when farmers come in. Pretty much the same meds.

### **Vet shop**

Pretty much the same meds as in the previous shops. A young man is the expert. He has a three year college course, also this one focused on everything in agriculture. He is mainly the

one who gives advice. He tells me that some meds are prescribed only, for example anesthetic drugs like Xylacin and also vaccines such as Rabisin.

### **Rural trader**

35-40 years, male. We are sitting on the curb just next to the office. He is a farmer of cattle, goats, chicken. He is also a trader of goats. He gathers goats from the surrounding villages. He is from Choma district.

I ask him to describe the process of acquiring a transfer permit;

1. Police in Choma, who notes the number of goats and the destination.
2. Vet. Pigs are tested for disease but not goats. Goats are looked at and examined. I ask if it possible to miss a disease for the vets. He says no, I ask why. Because there are three of them who look at every animal individually.

I ask what diseases he sees at goats at his farm. Listing and ranking;

1. Skin disease  
Caused by getting soaked in the rain and not having access to good shelter. I ask if it is the rain itself or if it is possible that it could be something else. He says yes, it is the rain. I ask if it is only some goats who will get sick event though they are all exposed to the same amount of rains, he says yes. What is his explanation for that? He says it is because some have a weak immune system. I ask if it possible that it is caused by a bacteria, virus or parasite and the rain is only allowing for this to start doing damage. He says he does not know about that.
2. Diarrhea  
Caused by changes in food. Treats with Oxiject and traditional meds where he collects leaves and boils it and make the goats drink it.
3. Coughing  
When not clean surroundings and feces are not removed. He treats with Oxiject which helps. I ask why he is using Oxiject to treat it if it is caused repeat the question again. He says since the animals are already sick they need the oxiject.
4. Abortion  
Caused by being beaten badly.

He does not see runny eyes and nose. He sometimes see sudden death but it is rare, usually caused by poisoning.

We are interrupted people who want to negotiate prices since the respondent also is a transporter from Choma to Lusaka.

I ask if it possible that coughing is caused by a bacteria or virus? He does not have time to answer this, he needs to leave.

### **Rural trader**

About 35-40 years, male. He immediately takes over from previous respondent since he asks him to.

He is a farmer of cows, goats, sheep and chicken. He is also a trader, based in Choma district. He also buys goats from the nearby villages.

What does it mean to be a good farmer? He says it means to take good care of the animals. I ask him to elaborate. He says to give them medicines, shelter, take them to good grazing. I ask if they graze in a fenced area. He says no, they graze communally but they are watched by someone.

How can you tell that a goat or a sheep is sick? He says they sometimes limp when they have black leg. Skin rashes is common in goats and sheep.

What diseases do you see at your farm? Listing and ranking.

1. Diarrhea

Caused by bad drinking water, when it rains the water becomes dirty. The rains will also make things grow and then the goats/sheep may eat something they shouldn't. I ask what he does about it. He says he prevents it by injecting medicines. He asks the vet shop for advice or sometimes just ask for a drug when he knows what he needs, and treats with Ivomec usually.

2. Skin rashes

3. Kid mortality

Caused by lack of milk, goats that have skin disease and are limping are unable to produce enough milk. There is no other cause. I ask if it could be a bacteria or virus or parasite. I ask what he does to prevent it, he answers that he tries to keep the environment clean.

4. Coughing

Caused by weather changes, nothing more. He treats with albendazon.

5. Abortion

Caused by using the wrong male or using the same male for a long time, they need to be exchanged occasionally. It can also be caused by not knowing that the goat is pregnant and accidentally giving medicine such as Ivomec and Albendazon. These are the only causes. I ask if it could be caused by a bacteria or virus. He then says that the skin disease in sheep and goats can also cause abortion, he has experienced this many times. I asked how he knows it is because of the skin disease. He knows this because pregnant animals with skin disease doesn't look healthy. I ask what he does when this happens. He says nothing. I ask what he does with the fetus. He throws it away, no specific place. Sometimes he gives it to the dog.

6. Limping

Caused by dirty rainwater going in mellan klövhalvorna → limping. It can also be caused by ticks. No other causes according to him. I ask how he deals with it – he cleans and spray for ticks

7. Runny eyes and nose

Caused by only weather. He injects oxyject and clean the environment.

I ask what medicines he uses for his goats and sheep and when he uses them. He says;

- Oxiject – painkiller
- Ivomec – skin disease
- Albendazon – make them look attractive (become fat)

He gets the drugs at the vet shop.

I ask him for preventative measures to protect animals on his farm from disease; he says he injects them, no other measures. He also sprays them once a week. I ask if he vaccinates, he

says every cold season. Now I decide to end the interview because I don't think I can make him understand me enough to ask the rest of the questions.

### **Rural trader**

*Male, 45 years. Interviewed sitting on the curb next to the office.*

*Based in Choma district. Farms goats, cattle and chicken. He is also a trader of chicken. He trades goats from Sinasongwe district, Choma, Temba, Mamba...*

I ask which diseases he sees in the goats on his farm:

#### Listing and ranking

1. Skin disease

I ask him to describe it – fur falls off, goats and sheep, the skin turns whitish, pimples on the skin. Very itchy.

2. Diarrhea

3. Coughing + runny eyes and nose

4. Strange disease when they all of a sudden, when eating, start running around until they fall. They treat it with cutting the ears and letting blood drain a bit. After this it is ok.

After this I continue to probe, then he also says that he has abortions, often. Kid mortality is also a big problem. They often have diarrhea before they die. He does not see sudden death.

He also says goats becoming skinny is a big problem at his farm. I ask what the cause for being skinny is. He thinks it is worms, and treats it with Ivomec. Diarrhea is caused by changes in the feed, and is treated albendazon from the vet shop. Abortion is caused by using the wrong males and treating animals when they are pregnant with drugs. The fetus he throws away. Kid mortality is caused by maybe lack of milk? I ask if it could be connected to diarrhea which he mentioned before. He says no. I ask him to describe the diarrhea. It is watery, not bloody. Ages that are affected are 3-4 month olds. He treats it with albendazon. Coughing is caused by weather changes, he seeks advice at the vet shop. The skin disease is caused by the rains and dirty environment. I ask if it is just the rain or if something more can be involved. He says it is just the rains and unclean environment, goats seem allergic to rain according to him. I ask if all goats are affected, he says yes. I ask if it could be a virus, bacteria or virus? He says it is just the rain.

I ask which medicines he uses. He says;

- Ivomec: skin disease, stop ticks, regain strength – meaning it prevents disease and cures diseases so that the goat can regain strength
- Albendazon; worms
- High-Tit; diseases in general
- Oxyfam/Ox-Tet; painkiller

Has someone ever sold sick goats to him? Yes, it happened now, he left it at home so he didn't bring it here. He has never sold a sick animal. I probe for if someone really wanted to buy it. He says no. Why not? He thinks it should be treated first.

Has he ever sold a dead goat? No, because it could infect humans who eat it with a disease, how that works he does not know.

I ask if it is a risk to eat sick animals? He says yes, humans can get sick by that.

I ask if he has ever experienced an outbreak of disease. He says yes, a coughing outbreaks where goats, sheep, cattle and even chicken were affected, not only on his farm but in the whole village. In his farm 8 goats were affected, 2 died, this is out of 18. Happened in January this year. He does not know the cause of it, but took the following actions; built a shelter where the feces and urine can escape under the surface where the animals are standing. He also treated with High-tit.

I ask which diseases have the highest impact on him. He says coughing and diarrhea and abortions. When I ask for the major constraints for him as a goat farmer, I can't make him understand the question. I then ask if the government would take some actions to improve the life of goat farmers in Zambia, what should those actions be. He answers that he wishes the government would travel out into the villages and teach them things, for example what causes things like diarrhea and coughing and what they should do about it when they see it in their animals. Some foreign organisations come occasionally but he would like to see the government as well.

I ask if he buys goats from other countries to include in his herd. He says no, it is too far away. I ask when he decides it is time to sell goats, he says he sells them when they have reached the right size, which is about two years old.

Is there a risk with trading sick animals? Yes, it might spread the disease

Can animals have diseases and give to humans? Yes. How? By eating. He gives the example that humans may get skin disease if they eat animals with skin disease. I ask how he can protect himself from animal diseases; he says by not eating sick animals.

### **Slaughterhouse worker**

*Male, about 35 years old. We are standing just inside the outer wall of the slaughterhouse in the shade.*

He has been working there since 2000. I ask how many goats and sheep he will usually slaughter in a day. He says he is now the assisting supervisor and hence he is not involved in the slaughter anymore. When I ask what it means to be good slaughterhouse worker he says it means to always wear your safety boots and work clothes, have good knife, have experience of skinning animals properly and to be clean, which he specifies with thoroughly washing the animal.

Him being a supervisor means that he observed the cleanliness of the workers and cleans the abattoir and supervises that they follow the hygienic rules.

I ask for the slaughter process; he says it starts with negotiating the price with the owner, standard is 15 kwacha. Owner then decides and tell the slaughterhouse worker how it should be cut and packed. Then they cut the throat. Skinning now takes place, followed by removing intestines, cleaning intestines, removing organs, and then the owner decides what he/she wants done. Some want the intestines cut and wrapped. Some wants the bones and muscles beaten with an axe to make it easier to divide it, other takes the meat to the butcher.

I ask about the rules for cleaning the knife. He says it is supposed to be cleaned after every step. It should be cleaned after cutting the throat, after removing intestines, organs etc. It is cleaned with water (this is not in accordance to my observations, I never saw the knives being cleaned...)

The buckets are cleaned with soap after every goat.

The abattoir is cleaned with a rubber broom whenever necessary during the day. At the end of the day they use water and chlorine on the floor and on the surfaces. His clothes are washed every evening at home. The boots are washed with a sponge and soap at a bathroom at the end of every working day.

I ask if he has ever work sick (cold, flu, malaria etc), he answers no. I ask why not, he says he might cough for example and spread the disease through the air to other people around him. He is not sure if it can infect the meat.

I ask where the knife should be placed when the workers are not using it. He says they have special surfaces for that. I tell him that I've seen several workers put it in their boots, he says it is not allowed. I ask if it ok to put it in the meat and leave it there, which I saw several times, also this is not allowed he says.

I ask if he thinks humans can get sick from diseases in animals, he says no.

I ask what it means to have good hygiene. He says it is to have clean surroundings, to disinfect, wash utensils and to change clothes daily.

I ask what training people at the abattoir have. He says they aren't offered training, they learn by watching an experienced worker for one day. It is important that people who work there are good with knives and can work quickly, which they are taught during that day. I ask why it is important to be fast. He says so that you can slaughter more. Each slaughterhouse worker is payed per animal they slaughter.

I ask if he feels for the goat that he is slaughtering. He says no, never.

How often do they see weird looking organs? He says sometimes, maybe once every two weeks or once a month, he sees ulcers on the intestines. But that is all he sees. When he sees it he throws the intestines away, the meat is ok to eat he thinks. I ask if he sees changes on the meat, he says he never does. I ask how workers are trained to recognise changes in the organs and the meat that might indicate that the meat should not be eaten. He said they watch this during their one day of watching someone else work. He himself is experienced and can hence tell already when the goat/sheep is brought in if it is not healthy. When they see weird looking organs they teach the employees to tell the owner and throw away the organ. If someone sees something strange that they are not sure of what to do with they can always come to him and ask since he has a lot of experience.

**Trader, short interview, the respondent has been interviewed before**

*Man, around 25-30 years old, surrounded by a group of colleagues who are mostly quiet but sometimes give input. They are standing in the pen. At a few points they are interrupted by someone coming to buy goats.*

I ask what the cause of the skin disease is. He says it is caused by the rain. He doesn't understand why it comes. He treats it by building a shelter. I ask if it is the rainwater itself or if it could be something else, he says rainwater in itself is not bad so there must be something else also, he doesn't understand what causes it!

I ask if they get any goats or sheep from northern province to trade here in Lusaka, he says no. I ask why, he says there are no goats there and if there were, it would be very difficult to get them here, it is too far.

He sells to the DRC. I ask why Zimbabweans aren't buying, it is so close to Lusaka. He says they have many goats there themselves, it is the same with Botswana and Mozambique.

I ask how he feels when he sees sick animals? He says he feels bad because it affects his business. I probe for how he feels for the goat, he says he feels for it, but it is business. He will sell it cheap when this happens.

### **Trader – short interview with a man we have already interviewed**

Why isn't Zambia selling goats to the following countries:

- Zimbabwe; they have many goats there
- Mozambique; same as above
- Botswana; same as above
- Angola; expensive. They do offer a good price there but it is expensive to get the goats there, it is not too far but they would have to cross rivers and hence they do not have the necessary capital
- Malawi – too many goats

I ask if they sell any other animals to other countries than the DRC – he says for cattle it is at least only Zambia, unless Zambeef is trading with other countries.

I ask how he feels when he sees a sick goat. He says it brakes his heart! Also it is bad for business.

We talk about skin disease. He says that it is caused by rain and mud. I ask if it is the rain itself, he says yes, nothing else! I then ask if it is possible that it is caused by a bacteria, virus or parasite. He then says it is caused by a parasite in the mud. He says it happens during the rainy season, not after (which the previous respondent said).

I ask if there are times when they sell more goats; he says end of August-Sept-Okt-Nov (end of Ramadan) when Indian people buy a lot of male goats. Also Christmas and holidays such as independence day.

### **Trader - Short interview since he has already been interviewed and he is in a hurry**

I ask when he sells a lot of goats, he says in May because that's when they are fat. This is all he has time for, now he has to leave.

### **Trader - Short interview since also this trader has to leave. Has not been interviewed before.**

When do you sell more goats? After Ramadan, Christmas, new year

### **Market customer**

About 30 year old, male. He is buying for consumption, lives in Lusaka. He is looking for quality, meaning he is looking for a fat goat. He comes to the market once a month.

### **Market customer**

She is a 40 year old woman going to Lubumbashi in the DRC. She is not a farmer, she is a trader, buying goats in Zambia to sell in DRC. She looks for fat goats, otherwise they risk becoming skinny on the way to the DRC. If they leave at 18 they will arrive in Lubumbashi around 05 in the morning. The respondent is Congolese.

She comes here every two weeks, the number she is buying is depending on how much money she has then and there, approximately 60-80 goats per visit. She buys Zambian goats because they are cheaper compared to prices in the DRC. The quality is equal to the DRC. Goats are checked by a veterinarian in Kasumbalesa before they are allowed to cross the border, usually samples are taken in addition to the clinical examination. In Lubumbashi they are sold at a market. She estimates about 70% of them are sold for home consumption, 10% to keep in farms, about 10% are used for dowry payments.

### **Market customer**

About 25 year old man. It is his first time there. He is buying to slaughter and eat. He looks for big goats with a lot of meat.

### **3 market customers**

Two women, a mother and her daughter. They come to the market every two weeks and buys about 3-4 goats per visit. They buy to slaughter themselves, not selling. They will sometimes use the slaughterhouse at the market, sometimes another slaughterhouse.

The two women are now busy negotiating prices. We are approached by the husband and continues the interview with him since the women are busy.

What are they looking for when they buy? It doesn't matter how big or small they are, the only thing that matters is that they need to be goats. He will observe the slaughter and has no reflections on how it is performed.

Are there any risks with eating sick animals? Yes, you risk getting sick yourself. Is it possible for a goat to have a disease that is not showing on the outside, yes. Is he doing anything to protect himself from eating a goat that has a hidden disease? No, there is nothing he can do about it.

### **Market customer**

Buyer 1 is a male around 40 years. He is sitting by a bus with three goats tied to its underside. He has bought them at the market and is planning on taking them with him back to his farm in Choma district. He only visits this market, no other market. In addition to being a transporter he is also a trader. I ask what he is looking for when he is buying, he says the breed. He wants to buy Saliboku breed. He buys them for breeding. The three saliboku he has bought are all pregnant. He comes here once a week since he is also a transporter. I ask if he separates the goats that he buys at the market from his own animals, he says no (i e no quarantine).

Are there any risks with buying goats at the market and taking them home with him? No, it is risk free. Buying goats in Choma is a risk however because then they need to pay for a transfer permit (for going to Lusaka) but he does not need a transfer permit to transfer from Lusaka to Choma.

Is there any risk that he might buy a sick goat and take the disease home with him to his goats? No, he has been doing this for a long time now, he can tell if a goat is sick. How can he tell that a goat is sick? It lacks appetite, becomes skinny and is reluctant to move.

Is it possible for animals to give diseases to humans? No.

Has he ever had to slaughter a goat because it was sick? Yes. For example, he has seen goats with wounds in the lung on post-mortems, these goats refuse to drink water. They eat the meat and throw the intestines away.

Are there any diseases where it is not OK to buy? Yes, Lumpy skin disease which he also sees in goats. Other than that all diseases are OK.

Are there situations where it is not OK to eat goats that have died on their own? No, it is always OK to eat, even if it has been bitten by a snake, since the goats know themselves what they should eat, they just let them out into the bush and then they will find and eat the plant that cures them.

Are there any risks with eating sick or dead goats? No, it is ok to eat. He has been eaten both sick and dead goats for a very long time without getting sick.

### **Market customer**

We approach a man who is loading goats into the back of his truck. He has just bought goats for his restaurant in Lusaka. He is here every five days and buys five goats a day. They slaughter the goats themselves. Their slaughterer has no training but he is experienced. He is doing the meat inspection himself. Is it possible for humans to get diseases from animals? Yes, for example by eating meat from sick animals.

### **Market customer**

About 20 year old man, here with his father. He buys for slaughter. They come to the market every 3-5 months and buy about three goats per visit. The goats are usually slaughtered at the slaughterhouse, sometimes he slaughters himself.

Humans cannot get diseases from animals, and there is no risk to eat meat because he can always tell if a goat is sick, always.

### **Market customer**

25 year old man, sitting in his car. He is buying for home consumption. Lives in Lusaka. He looks for big and fat goats that shouldn't look sick. A sick goat is thin and has sores on the skin and around the mouth. He has the goats slaughtered at the slaughterhouse and is always observing the whole slaughter because he doesn't trust the slaughterer, they might steal parts of the meat. He doesn't have any reflections on how the slaughter is performed.

Can animals have diseases and give to humans? No

Can goats have diseases even though they look healthy on the outside? Yes he answers. Then, is there a risk if a goat is hiding its sickness and you eat it? No, because then the slaughterer will tell me that it is sick

### **Market customer**

Woman, around 30 years. She visits another slaughterhouse and gets the goats slaughtered there. She sells the meat in pieces at Lusaka city market. She visits the Lusaka market at least 5 times per week and buys 4-5 goats per visit. She looks for big and fat goats when she is buying.

Has she ever bought a sick goat? Yes, for example she has seen liver and lung damage after slaughter as well as damaged intestines. They can tell if the goat is sick, there are no diseases

that are hidden from her. They don't have anyone who inspects the meat, but she is experienced herself. She has no training for meat inspection or slaughtering.

### **Market customer**

Male, 40-50 year old. He is buying both sheep and goats. Sheep has the advantage of being more valuable compared to goats. Sheep he can easily sell to restaurants, goats are more difficult. He is buying to his farm which is situated about 20 km away from Lusaka. I ask if he lets new animals in with the old ones immediately, he says yes, because he deworms them just before, and therefore there is no risk.

### **Market customer**

About 40 years, woman. Wearing very nice clothes and nice makeup.

She slaughters them at another abattoir and then takes the meat in pieces to City market. She is examining goats when we are talking buy touching them over the lumbar region. I ask her what she looks for, she says they should be fat. She comes to the market every day and buys 3-5 goats per time.

Has she ever accidentally bought a sick goat? No.

Can humans get sick from diseases in animals? Yes, through skin disease for example where also humans will get itchy. Also, humans can get sick from eating meat from sick individuals. She is protecting herself from this by only buying healthy goats.

Is it possible for a goat to have a hidden disease that you can't see on the outside? No, she can tell if it sick, mostly by the fact that its coat is starry.

She has no experience when it comes to meat and organ inspection, but she is experienced, she has been working with this for ten years.

### **Transport coming**

*There is a transport coming in with goats and pigs. They are throwing the goats off the truck onto the ground and then they are made to go either into the pen or to a distribution pen which is the pen at the right hand side that is farthest to the left and towards the pigs.*

*Farmers go to pay to the association (the fee) 5 ZKW to have their animals taken here. The majority of the goats on the truck are taken to the distributor pen.*

*After this, urban traders gather around the distribution pen. People are shouting at a man in a yellow shirt and red hat. Tensions are running high, people are almost fighting. The man in the yellow shirt is called a distributor. His job is to make sure that all the trader gets the same number of goats, that the distribution is fair. A lot of people are complaining that the distributor is not fair after all. The distributor chooses people who can get goats, that goat is thrown outside the pen, the trader moves the goat to one of the farmers pen. The farmer/rural trader now goes around and locates his animals and get payment from the trader, who then will move the goats to his/her pen on the other side. Some people however want to negotiate their own prices and will therefore not let their goats into the distribution pen, they take them into their own pen and waits there to sell.*

*I see one goat with serious case of corneal lac and resulting corneal oedema. He also has runny eyes and nose. Another goat a few pens away is about 4/5 limb on right front leg.*

*The farmers are paying the 5 ZKW fee per goat meanwhile this is happening*

### **Market Distributor**

According to a man at the office the distributor is changed every other week, but according to the distributor he is the only one who has his job.

He is a man, about 40 years, smells of beer. Speaks and understand English but the interview is done in Nyanja. He is a member of the association.

He decides when people will be given a goat, he has to be fair when he does this. He has a list that he follows, not one that he can show but he has it in his head. Some goats he will sell, others want to sell themselves, the ones who want to negotiate their own price and are willing to wait for it.

### **Observations**

*We notice a lot of people standing outside of the pens for the urban traders holding on to goats. We are told they are traders who buy goats from farmers/traders at the trucks, and then sells them to Lusaka traders. This is done for two reasons; one is if the owner don't have time, the farmer/rural traders pen is not opened until 8. Also, by doing that they are bypassing the 5 ZKW fee that otherwise have to be paid to the office when they are disembarking.*

### **Rural rader**

Male, 35-40 years. He has been trading goats for two years. He lives in Kalomo district and gets goats from villages around town. He uses a bicycle when he travels in between and takes the goats with him. He is also a goat farmer himself and sells also his own animals.

He will also go to Kasumbalesa, actually more there compared to Lusaka market, this is because it is closer to the Congolese border and that people are willing to pay more there, here people are aware of the price that the farmers gets payed in the villages and are not willing to pay much more than that price.

Being a good trader means making sure that the animals are clean and healthy, i e fat looking, so that they can attract a costumer. He sells the goats himself when he arrives at the market, he will not let the distributor sell for him, this is because he may lose money and/or clients if he lets the distributor do it.

What happens to the goats after being sold in Kasumbalesa? Consumption mainly to DRC people. In Lusaka he will mainly sell to urban traders but also directly to market customers. He looks for quality in the goats that he is buying, meaning that they should be fat and big.

I ask how many goats are coming from other countries, he says none. How do you know? Because they are mainly from the Southern Province, this he can tell by looking at the number plates on the cars.

What causes disease in sheep and goats?

1. If he doesn't let the goats out to graze early and let them stay out long enough, they will eat feces and get sick
2. If he is not cleaning the pen enough

What diseases is he experiencing? Worms and FMD – FMD in both goats, cattle and chicken. He asks the vet for advice, no one else. For simpler diseases such as skin disease, sores on the skin when they need spray, and worms, he will buy the medicines himself and treat without involving the vet. At the market, if he needs help here he would call a vet, however, he is experienced and can take care of a lot of things on his own. I ask if there is someone at the office that he should tell if he has problems with disease at the market, he says he has never been in that situation but if he found himself in it he would ask them.

Have you ever accidentally bought a sick goat? No. However, he sometimes will knowingly buy sick goats with a mild treatable disease for low costs and treat the disease. Are there any risks with buying sick goats? Yes, they might transmit disease to his goats.

If one of his goats died and he only suspected mild disease, would he sell? No, because he risks spreading disease and people can get sick. There are no situations where it is OK to sell a dead goat.

How can diseases be spread between goats? Close contact, which is the case for skin disease.

### **Transporter**

He has been transporting goats and sheep since 5 years. He is also a farmer of cattle, goat and sheep. Also a trader in Choma district, he gets goats from within his village. His truck is about 3x 8 m and can hold up to 100 goats. He has never experienced them being injured during the trip. I ask if they sometime die, maybe when it is very hot outside. He says they don't usually die from the climate or overloading but from when they are handled roughly during transport. If an animal dies he will share the costs with the original owner since he feels a responsibility when he is transporting them. For a goat that is worth 500 ZKW he will pay 250 ZKW. Also, he will sell the body for 100-150 ZKW (a low price), mostly because he feels for the owner and wants to limit their loss. He himself has money and can deal with the extra costs, but many of the farmers don't.

The ones who buy dead goats are usually people having braai stands at bars, they don't care and also the people who buy from them are drunk and don't care either.

Animals cannot give diseases to humans and there are no risks with eating dead goats.

How many times did he have to show the transfer permits on the way over? About 5-6 times. Council, vet and police was present on all of them. The vet will check papers and impound them if they don't have papers. He or she also checks the animals themselves. If there are no outbreaks at the moment in the area they are from they will only observe the animals and check for signs of diseases.

He has never transported goats or sheep from other countries or to other countries.

Is it legal to sell dead goats? He answers that he knows it is not right and he wants to throw the meat away but then people will beg him for the meat, and then he will sell to avoid the owner from losing money.

### **Rural trader**

45 years old, man. Speaks Tonga, one of his friend is interpreting from Tonga to Nyanja so that my interpreter can translate to me in English. He is a farmer of pigs, sheep, goats, chicken. Which species do you prefer when you compare sheep and goats? He prefers goats because they breed more than sheep and market infrastructure is better and they are therefore easier to sell. He is only trading goats which he buys from farms nearby. He goes to the Lusaka market and Kasumbalesa, actually more to Kasumbalesa. He is also selling goats of his own, not the sheep because they are still too small, about 3 years old.

He has been trading goats since 2001, sheep he started with about 3 years ago.

He buys goats at markets, mostly kids that he will use for keeping until they grow big, then they will go back to the market. He also sells goats to farmers and traders around him, he sells to be able to afford weddings and funerals and to pay for school fees. He is not

quarantining animals that he has bought, they are allowed to mix with the herd, and they are not treated before.

Why are Zambian people using goats to pay for school fees and not cattle? Because they value cattle more than goats and are therefore afraid of losing them

He has never bought a goat/sheep from another country, also he doesn't know anyone who has. He sells to DRC.

What does it mean to be a good farmer? To take the animals to the vet when they need it, build them a good shelter during the rain season ffa, keep surroundings clean.

What does a good farmer do when he or she sees diseases in the animals? First he asks neighbours, but regardless of their advice he then moves on to ask the vet or employees at the vet shop.

They are not isolating sick animals from healthy ones.

What diseases are you comfortable with dealing with on your own? Skin disease, because they know the treatment, they use used car oil and rub it on the skin. Also, runny eyes and nose they just wait for it to pass, it is often caused by cold weather or dusty environment.

How would a good farmer do to prevent disease? They clean the environment every month, spray disinfectant every two weeks, dip for tick every 2 weeks to 2 months (depending on the dip that they're using). They deworm with Oxject.

The disease with the highest impact on them is FMD and skin disease. The disease with the highest impact on the community is Denkete – i e corridor disease. This affects all animals, they die suddenly without showing any signs of disease, sometimes in pigs, blood will be running from their noses, chickens will die, cows, sheep, goats, they all die. Cattle and goats have swollen hearts at p-m, and bloody stools. It occurs Jan-Jun. A few of them survives but all who gets sick will die. They can't do anything about it except for wait and see.

Have they ever had to slaughter an animal because it was sick? Yes, they have, and they ate the meat and nothing happened to them!

Are there diseases where they shouldn't eat the meat? They wont eat if it has been bitten by a snake, and two out of the three (respondent + uncle/interpreter) will not eat the goats that have gone crazy, but the son will. Also, they wont eat pigs that has "swine flu" (bleeding nose). Also, for sick animals that have been treated they must wait for 7 days before eating it.

They will all also eat sheep and goats that have died from Denkete, they point out that this is not because they have been advised to do so by a vet, they do it on their own accord. They eat because they love meat so much!

Are there any situations where it is not ok to eat dead animal? Yes, for animals that have skin disease, because then the humans will also get it (itching).

What are the risks with eating sick animals?

- They risk also eating medicines if the animal was medicated
- Catch the same disease as the animal, f e skin disease
- If they eat an animal that was vaccinated with parvaccon they might die

Knowing these risks, why are they still eating? Because they would rather risk it than waste food. If they don't eat it there is a lot of meat that will just be wasted. They also will, in accordance with the standard procedure in their village, share the meat with other members of

the village. They would not sell it to them however, but they have to share, otherwise the others will not share with them when they have meat. They will make sure to tell the others that it died from Denkete.

Are there any risks with trading with sick animals?

Yes, the one who is buying may risk having to buy medicines and to try to cure it. Also, they don't know what medicines the previous owner gave it, if they start treating with the same they risk overdosing. I probe for whether it is a risk that the disease might be brought back to the original herd, they say yes.

Have they ever bought sick animals? Yes, for simple diseases they know can be cured, for example skin disease. Have they sold a sick animal? Yes, both skin and foot disease. They sell when the owner really wants to buy it in spite of its sickness. They make sure to inform the owner. And also, they will sell/buy for a cheaper price.

### **Slaughterhouse workers**

*Starts off with 2 men, after about 5 min they were five, all men, 20-25 + one older about 35-40 years old.*

They usually slaughter about 2-4 goats per day and 2-4 sheep a day, but Saturdays and Mondays are more busy, these days they can slaughter up to 10 goats per person. Saturdays are busy because a lot of people are free on Sundays, Mondays are busy because restaurant owners like to buy enough to sustain them for a week. Also, month-ends are busier.

What kind of training do you have? They have no formal training but they observe and experience until the supervisor decides that they are ready to start slaughtering on their own. For many the training will only take a day but some need up to 2 weeks (for the five men we spoke to only one needed more training than a day).

Slaughter process;

1. Slit throat
2. Remove the skin
3. Open the midline
4. Remove intestines, wash them and put them aside

From now on the owner is the one who is deciding what will happen with the goat/sheep

Cleaning the intestines; remove the feces, for small intestines they just remove the feces, for large intestines they are also rinsed until it is clean. The water that has been used to rinse the intestines is not supposed to go back into the bucket.

One bucket of water per goat is used, but according to one he can use the same for up to three goats if he is just careful. He also says that if you wash a carcass too much it risks losing the flavour.

With one bucket, they are meant to only use it for one goat. Before they change the water they rinse the colon, the water is meant to be thrown out and not put back into the bucket. If there is still water left they will rinse the carcass if necessary. The carcass is rinsed sometimes in order to remove fur, blood etc. In other cases it is not rinsed.

They are paid per goat/sheep that they are slaughtering, they negotiate with the owners about the price, some owners will give tips if he/she is happy with the work, some will leave

the intestines for them to thank for a good job. For every goat that the slaughterer does he has to pay 5 ZKW to the association, this money is for maintenance of the slaughterhouse.

A good slaughterer is someone who is honest (doesn't steal meat from the owners), has good experience (knows how the slaughter should be done), is clean (otherwise he won't attract costumers), avoids cutting himself (if he does someone else has to take over – because of the risk of HIV/AIDS), not working when he/she is sick (can infect the buyers if the sickness ends up in the meat).

The workers are arranged in companies, in total 10 companies with about 3-5 people in each. The purpose is extra safety, if one is sick he will get money from the rest, the company divides money evenly.

Have you ever had to throw away meat and/or organ? Only intestines, they see spots and small sores in the whole intestines, sometimes with pus. If they see these changes they will go to the owners and explain what they have found and then throw away the intestines, but the rest of the organs and the meat is ok. Some owners will want a reduction in price, for example lowered from 350 to 300, but others understand that you can't see on the outside exactly what is going on on the inside of the goat.

The above is the only changes they will see in organs and meat, other than sometimes they see snake bites, trauma signs → they remove that defect but does nothing with the rest.

They have never had to throw away a whole carcass or any other organs, only intestines. They have never advised an owner not to eat meat, only intestines.

Do they ever see any sick goats/sheep come in to be slaughtered? Yes, runny eyes and nose sometimes. They don't see any other diseases. It is usually caused by the truck driving too quickly or it being cold outside. If they see it they will usually slaughter it quickly to prevent it from spreading to the other goats/sheep. It is uncommon for goats to get sick!

How can they make sure that the meat is clean? Buy washing the hands after slaughter, washing the intestines thoroughly, make sure that no blood ends up on the meat during skinning.

They depend on water! If the water is not working → they cant slaughter

Hands; they start with saying they wash their hands once per goat/sheep, then grows to 3-4 times, then ends with sometimes they don't even count. They wash after slitting the throat, after touching the skin, after removing the intestines. If the goat is very dirty they can't count because they wash so frequently. They wash with water since soap will ruin the meat. The knife is washed with sponge and water, before it is used before slaughter as well as after slaughter is finished, after skinning and removing the intestines.

Can animals have diseases and give to humans? They don't know, but they can say that they haven't experienced it. I ask if it is a risk to eat a sick animal, they say that no animals will come here sick because of vet checks (transfer permits).  
Now they are tired and I have to end the interview.

### **Transporter**

Male, about 40 years, interviewed while sitting in his car. He has been transporting animals for 5 years. He is also a farmer of goats and pigs, also a trader.

He lives in Namwala district. He is trading in the village as well as other villages close by. His truck is about 3x8 m, can transport about 150 sheep and goats. He has only been transporting animals in Zambia, not from or to other countries. I ask if it sometimes happens that goats are injured during transport, he says no, also no to whether they die during transport, even though I probe for hot climate etc. He has never seen diseases in the animals that he is transporting.

The transfer permit is checked about seven times on the way here. The vet and the police can be found at all checkpoints, the council only at two. At the checkpoints, the vet checks paper as well as observes for sick animals.

Is it possible to transport without a transfer permit? No, not to and from Lusaka because there are police checks on all routes out/in.

I tell him that I yesterday was told that some people buy goats that die in transport. He now says that it happens that they die due to overloading, but he has nothing to do with what the owners do with the animals, the only thing he does is he doesn't demand to get payed. But he says it does happen, he has seen people selling dead goats several times. However, he says the majority of the dead animals end up at the right place.

### **Rural trader**

He is a farmer of goats, cattle, chicken, guinea fowl and pigs, living in Southern province. In addition to farming he is also a trader, the last time he went to Lusaka market was this Monday. Usually he comes to the market every 2-3 months.

He buys from other farmers in his village and takes them, with his own animals, to the market to sell. While waiting to sell them he lets the goats that he is trading mix with his original herd.

I ask for how it is usually done when traders take sheep and goats to the market from his village. I say that the way I see it, it can either be a trader who buys from the farmer and takes the animals to the market. It can also be a trader who buys from the farmer, sells to another trader in the nearest town, who then takes the goats/sheep to Lusaka. He agrees. I ask which one is the most common one, he says the first alternative (trader → Lusaka).

I ask about if there are any specific times during the year when he sells more. He says not really, but in Nov-Apr he can't come to Lusaka market because it is raining, meaning that the roads are too bad for him to travel. Hence he sells more Apr-Nov when roads are better. He sometimes sells in Choma and Monze at markets there, especially during the rainy season when roads are too bad for him to go to Lusaka. However, some of these animals will probably end up in Lusaka via other traders.

He has never sold goats to another country but he knows that trade with the DRC is common. He has also never bought from another country, he doesn't know why he hasn't done this but says that it is rare for people to buy from other countries.

When is it ok to sell a sick goat? When they have foot rot and skin disease he says during the rain disease because they can be treated.

Can trade contribute to spreading disease? Yes, he says

Is it possible for humans to get sick from diseases in animals? Yes he says! Many people who eat sick or dead animals risk getting sick.

### **Rural trader**

An adult man about 40-45 years old, a woman of about the same age and an infant. Farmer of cattle, goats, guinea fowl, chicken. They live in central province but now they are going to Southern province for work. He works as a mechanic and when he is travelling for work he sometimes trades goats. He also sells goats in Mombwe town in central province. Most goats that are bought in Mombwe are kept alive, only a few are eaten. Also, in his village, traders will go around in his village and ask for goats to buy. Sometimes representatives from hotels come and buy goats for their hotel-restaurants.

What kind of diseases are OK to sell? He says none, you can't sell sick goats. Then I probe for runny eyes and nose; he says it is ok to sell these goats since it is not caused by diseases. He also talks about when goats have "sick livers", these are also OK to sell because they can be treated. He can tell that a goat has a sick liver because it stays away from the group, that's the only clinical sign. These animals are easily treated and therefore OK to sell. He treats them with High-Tet and Oxiject.

He says it is not ok to sell animals that are suffering from Black-Leg or Anthrax. He also says that if he is treating an animal he can't sell it for as long as the drug is still in the body.

What diseases do you know?

Heartwater, neurologic disease with seizing, skin disease, tick-borne diseases, eye disease, diarrhea

Can trade contribute to disease spread? Yes! He says. He says goats with diarrhea for example, they can poop on the grass that his goats are eating and make them sick.

Can humans get sick from diseases in animals? No, because the meat is first boiled. I ask if it is OK to eat a dead animal if the meat is first boiled, he says yes, if the goat is boiled sufficiently the germs will die and then the dead body can be eaten.

### **Slaughterhouse worker**

Who is the provider of water? Lusaka city council, it is tap water/drinking water, they think there is chlorine in it.

Hierarchy

1. Chairman (supervisor) – under the office, responsible to look after the market, costumers etc.
2. Vice chairman, steps in when the chairman is not there, is advised by the chairman
3. Cashier – collects money at the abattoir
4. Secretary – writes down information
5. Vice secretary – if the secretary is not there

### **Urban trader**

*Woman, about 40 years old. She is not a farmer but she has been a trader for 15 years. She is sitting on a plank connecting the bars, with goats around her feet. A group of other women (around 6) are surrounding her in the same pen.*

She says they work together but sell their own animals. I ask if it is common for women to trade goats, she says yes. I then ask why there are so few women here. She says there are two

other markets in the compound, a bit further inside. I then ask why those women sell goats there and not here? She says because the markets are closer to their house. She also says she sometimes buys goats from these traders and sells them herself at this market. Other than those two there are no other markets in Lusaka town.

*I notice that one of the goats that she is selling has skin disease. Not all of the goats are branded as far as I can see.*

I ask her to list and rank where she gets goats from;

1. Southern province
2. Eastern province
3. Central province

Why isn't there coming goats from Western province? She compares the farmers there with people from southern province who are very knowledgeable about sheep and goats and thinks sheep and goats are important animals to keep. In western province farmers are knowledgeable, but mostly about pigs. Northern province she says is very far away, maybe it is difficult for them to go to the market because of the distance. She has never bought from other countries and she is not selling to other countries.

How long can the goats stay with her? She says about 2-7 days in general.

She usually sell more goats around month-end and Christmas and Eid.

Most of the goats and sheep that she sells end up being consumed. I try to get her to give me an approximate proportion of how many goats end up in consumption and how many are kept but I am not succeeding. The goats/sheep that she sells for keeping all go to farms within Lusaka district, she has never sold outside of Lusaka.

When is it OK to sell sick goats? She says most sick goats don't reach the market, and she has never bought a sick goat/sheep. But then when is it OK? She says it is OK when they have diarrhea, then she will treat them with salt first until they have recovered. Also when they have skin disease it is ok.

When is it not ok to sell sick goats? She says then that she will buy and sell all goats, because the ones that reach the market aren't sick.

Can trade contribute to spreading disease? Yes, especially for FMD she says.

Can humans get sick from diseases in animals? No she says, because she boils the meat before eating it. I ask if it is OK to eat a dead goat then if the meat is boiled before. She says she knows other people do it because she doesn't know what killed the goat.

We ask her to ask the rest of the women in the pen if one of them would like to talk to us. She says they don't want to.

### **Urban trader**

*Woman, appr 45 years old. She is interviewed while standing in the pen, surrounded by goats and a few other women.*

How long have you been trading animals? She answers nine years, she also says that she is not a farmer. She trades goats, only goats, and only at this market.

The women in the pen collaborates she says by standing together, but everyone is selling their own goats.

She trades goats only from Southern province. She thinks the reason why she is not trading goats from other provinces is that they are too far away.

She usually sells the goats to people who slaughter and sell the meat at City market (8/10 do this). The other 2/10 she sells to traders from the DRC. I ask if she ever sell goats for keeping? Yes she says, the majority of these farmers live at Lusaka West, as far as she knows she hasn't sold to outside of Lusaka.

What diseases can a goat have and it is still OK to sell it? She says skin disease and runny nose and coughing. What diseases is not OK to sell the goat if it has it? Diarrhea she answers, these goats are difficult to sell but if they treat them they can be sold after recovering. I ask if she has ever decided that she could not sell a goat at that stage, she has to treat it first? Yes she says, she has decided this with goats with diarrhea. She gave them salt, they recovered, she sold them.

Can trade spread disease? Yes

Can humans get sick from diseases in animals? Yes

What diseases do you know in goats? She answers skin disease and diarrhea.

We ask her to ask the rest of the women in the pen if one of them would like to talk to us. She says they don't want to.

**Additional info from a trader that we have already talked to**

Why don't you sell goats to Western province or Northern province? Because these provinces are too far away he thinks. He mainly trades goats from Southern province.

Southern province; 7/10

Central province; 2/10

Eastern province; 1/10

Why aren't people trading with Zimbabwe? They already have a lot of goats

Mozambique? Too far away

Botswana – they have a lot of goats

Namibia – too far away

**Additional info from a trader that we have already talked to**

Southern province 7/10

Eastern province 1/10

Central province 2/10

Choma, Monze, Mamba, Mahala, Sibuyungi district, Sikatende, Mombwe, Luanga

**Additional info from a trader that we have already talked to**

Southern province 6/10 – Kalomo, Choma, Monze, Zimba, Mazabuka

Central 3/10 – Mombwa

Western 0.5/10 - Mongu

Eastern 0.5/10 – Chipata

Farmers who buy goats to keep; These are farmers that are looking for specific breeds. He has sold to Kabwe (central), Mombwe (central) and Chongwe (Lusaka)

### **Additional info from a trader that we have already talked to**

About 99% to Southern province he says first but then changes his mind to 9/10 when he realises that he needs to give percentage. From western province he buys 1/10. He occasionally buys but this is rare.

He buys from Namwala, Choma, Mazabuka, Pemba, Mamba, Mongu, Luangwa

Why aren't people from Northern or Western province selling more at the market?  
In Northern province there are very few goats, they are more focused on fishing than on farming.

In Western province they're more focused on mining

He does not import goats or sheep to Zambia, but he does export. About 5/10 goats that he sells goes to the DRC, 2/10 to Angola, 3/10 to Zambia.

In Zimbabwe they already have a lot of goats, Mozambique too, DRC and Angola however are war-torn countries and therefore have no goats.

Farmers who buy to keep buy from Lusaka west, Chongwe, Mombwa, Kafue.

### **Rural trader**

Interviewed in a minibus that is about to leave.

She is a farmer of sheep and goats, and traders of goats, from Monze in southern province. She trades her own goats as well as goats from other people in the village. She arranges transportation with a group of people to get to the market.

What diseases can a goat have and it is still OK to sell? She says she could never sell sick goats! She treats them with Ivomec and waits for them to recover, then she sells them. If they have a runny nose she gives them ivomec and sells them. If they have diarrhea she gives high-tet and sells after they have recovered. Also with coughing she treats them with High-tet.

## **Lusaka market, September 2018**

### **Urban trader of sheep, has been interviewed before**

He is trading goats that he has bought from others, he does not keep goats himself, he is not a farmer.

He is not trading animals that he has reared himself. In general, he will keep the sheep for about one month, if business is good they are sold within a few days. He mostly sells to home consumers, followed by traders and farmers. He buys goats from Monze and Kalomo. <he has never bought a sheep from another country because it is expensive. A sick goat has poor appetite and is weak. The most common clinical signs in animals in trade are:

1. Diarrhea – he reports to the vet and treats with salt and soda
2. Runny eyes and nose – cleans the nose and the pen
3. Coughing – clean the nose and pen

#### 4. Skin disease – buys drugs, treat and waits one month before selling the animal

He thinks it is OK to sell coughing, diarrhea and runny nose, but not skin disease. Runny nose and coughing are because of dirty environment and is easy to treat. Diarrhea is also easy to treat. Skin disease on the other hand is difficult to treat. He once bought a goat with skin disease, a mild case, because it was nice looking otherwise. He bought it for a good price, treated it and sold it expensively. He has never sold a sick goat but he would have, if the disease was mild and the customer really wants it. He would never sell a goat that has died on its own because he does not know what it died from. Even if it died from overloading, he would never sell it! He does not know how diseases can be spread. He does not think it is possible for goats to be sick without showing anything on the outside. When I ask if there are any risks with selling sick goats he says that there are, his business might be affected. When I ask if there is a risk of disease being spread, he says no because he will tell the owner so that he/she can start treatment. He does not think the disease will start spreading before then. He does not believe humans can get infected by animal diseases. He thinks it is OK to slaughter and eat goats with runny nose, coughing and diarrhea, but not skin disease. When I ask why he says when they have diarrhea he can throw away the intestines, coughing and runny nose can be because of dirt. When I ask how he can tell the difference between. A goat that is coughing because of dust and one who is coughing because of disease, he admits that he cannot. He does not think slaughtering and eating sick goats is a risk. When I ask if there are any risks with eating goats that have died on their own he says that it is illegal. I ask if humans can get sick, he says he doesn't know but the meat would taste badly. When I ask him to motivate that he is trading sick animals in spite of knowing that it can contribute to disease spread, he says that he always tell the buyer to not mix the animals before they have been treated.

He is not a farmer. He has been a trader for 6 years and was in school until 10<sup>th</sup> grade.

#### **Urban trader**

He is trading goats that he has bought from others, he does not keep goats himself, he is not a farmer.

The goats will typically stay with him for 2-3 days. He mainly sell to people buying for consumption, followed by other traders, and lastly farmers. Approximately 9/10 are slaughtered, 1/10 kept alive. The ones that are buying for slaughter are most often from restaurants, followed by butcheries, markets, hotels, and home consumption. He does not know where the ones that are kept alive go. He has never bought goats from another country, why should he, there are plenty of goats in Zambia! He is also not selling to other countries. A sick goat is weak, has diarrhea, runny eyes and nose. He does not see any sickness in the goats that he is trading. He thinks it is OK to slaughter and eat sheep and goats that are coughing, has diarrhea and runny nose. In fact, he can't think of a symptom where it is not OK to slaughter and eat the animal. Sometimes he will throw away the intestines and liver but the rest he will eat. He throws away the ones with sores on their intestines. When I ask why he thinks it is OK to eat goats with diarrhea but not with sores on the intestines, he says that sores on the intestines can infect people, not diarrhea. He thinks all diseases are OK to sell but not sores on the intestines, however he remarks, he does not know until after slaughter that the goat had sores on the intestines. It is OK to sell goats suffering from a mild form of skin disease, where only the skin is infected. However, it is impossible to see the difference just on the outside to the ones with severe skin disease where also internal organs are affected. He says coughing is OK because it can be caused by dust. He tells the difference from one that is coughing because it is sick because that goat is also weak and inactive. He would also buy a sick goat if the disease was mild and he was offered a good price. He would

sell a dead body as well if it had died because of overloading and someone really wanted to buy it. He has never done this though. He also do not see any problems with eating a goat that has died on its own. As long as it is fat it is OK, fat goats are not sick.

He does not know how infectious diseases are spread but he does know that diseases can be hidden from the outside (that a goat can be sick without showing visible symptoms).

I ask if there are any risks related to trading sick animals, he answered yes, it can affect his business. I asked if it can spread diseases, to which his answer is yes.

Can humans get infected by animal diseases? He answers no, goat diseases are goat diseases, not human diseases. He also don't think there are any risks with eating sick goats. When I ask about risks related to eating dead goats, he answers that it is illegal and against religion. I ask him to motivate the fact that he is aware that trade can spread infections, but he is still doing it. He answers that he has to to avoid losing business. Sometimes he accidentally buys sick goats and then he has to sell it as well to avoid losing business.

He is not a farmer, he has been trading 3 years and has gone to grade 8 in school

### **Market customer from the DRC**

He is trading goats that he has bought from others, he does not keep goats himself, he is not a farmer. In general, the goats stay about 4 days with him before they are sold. He mostly sell to DRC traders, followed by home consumers. The goats that he sells are all slaughtered, none are kept alive. They are mainly bought buy restaurants, followed by home consumers. Sometimes people from bars, markets and hotels will buy goat meat but it is rare. He has never bought a goat from another country because there are plenty of goats in Zambia. He does however sell to the DRC, because they pay well. About 7/10 of his goats go to DRC, only 3/10 stay in Zambia.

A sick goat has standing fur, it is weak and it is losing appetite. At the market, he sees goats that are coughing and have runny nose, relatively frequently. He treats them with salt water and the sell them after one day. Skin disease he also see but these goats he never buy. He also see goats with diarrhea but this never happens with his goats, he sells them too quickly, they will not have time to develop it. They have to stay longer than 4 days to develop this.

He thinks it is OK to sell all diseases, but points out that the goats under his care will not have time to develop diarrhea. He also says that the risk is that the goats can spread disease to the place where they are going, but he also says that goats cannot infect people. He has never bought a sick goat but he would have, if it had a mild easily treatable disease that he was offered for a good price. He has never sold a sick goat and he would never do it, to protect his business. What he does do is he slaughters the goat, throw away the organs and sells the meat instead. A sick live goat he will not get a big profit from, he protects his business by selling the meat. He does not know of anyone who sells bodies of goats that died on their own, because it is illegal. He would never do it himself. He would never eat a goat that died on its own either. He also says it goes against his religion.

He does not know how infectious diseases are spread, but he knows that goats can be sick without showing visible symptoms.

When I ask about risks related to trading sick goats, he. Answers that it can negatively affect his business. When I ask if it can spread disease, he answers yes, to other goats. He does not think humans can get infected by animal diseases and he do not see any risks with eating sick small ruminants.

I ask him to motivate the fact that he is aware that trade can contribute to spreading disease, but he is still trading. He answers that cough and runny nose can be because of dust and also says that he makes sure to tell the buyer that the goat is sick and that he/she need to treat it. He has been trading for 24 years and has gone up to grade 12 in school.

### **Rural trader**

He is trading animals that he has bought from other people, not goats that he has reared himself. The goats generally stay with her 4-7 days before they are sold. He mostly sell so home consumers, followed by traders from the DRC, restaurants, butchers and occasionally farmers. Most of them are from Southern province, occasionally Eastern province. He says Chikakanta district, followed by Choma, namwala, mamba, mazabuka, monze, are the most common districts. About 50% are slaughtered and 50% kept alive.

Before, up until 2011, he used to buy goats from Zimbabwe but now it is too expensive. He says he thinks there might be some goats here from Zimbabwe, they are bought by Zambians just by the border and then transported here. He sells to people who sells to the DRC.

A sick goat is reluctant to move and often has a runny nose. At the market, he often see coughing, followed by skin disease and diarrhea. Skin disease he treats with medicine from the vet shop but coughing and diarrhea no, they are going to be sold soon anyway.

He has never bought a sick goat and would never buy a sick goat since he has to treat the individual then, and this is costly in terms of both time and money. He has never sold a sick goat, but he thinks it is OK to sell runny nose and coughing. Skin disease is not OK. At first he says that diarrhea is OK to sell but then he change his mind and says that it is not OK to sell.

He does not know anyone who is selling animals that have died on their own, and he would not allow his family to eat an animal that died on its own because they might get infected.

Diseases can be spread by insects, and therefore there are a lot of programs in the villages where villagers are encouraged to take their animals to the dipping tank.

He does not think animals can be sick without showing visible symptoms. He says that trade can contribute to disease dissemination, but only if they are not passing the stock movement permit checkpoints. There are risks involved with trading sick animals, these risks include that it is illegal and that it can be bad for her business.

Humans can get sick by animal diseases and even if she boils the meat, viruses won't die.

When consuming self-dead animals, the risks are that it is illegal and that it is possible to get sick.

He has a farm in southern province, where he farms cattle, goats, sheep, cotton, maize, sunflower and groundnuts. He went to grade 12 in school and has been trading goats for five years.

### **Rural trader**

She is not trading animals that she has reared himself, only goats brought to the market by other people. In general, the goats will stay about 2-3 days with her. She usually sell to restaurants, followed by butchers, home consumers, farmers and traders from the DRC. She buys mostly goats from Southern province. Other provinces are Eastern and Western province. The most common district is Namnwala, followed by Monze and then Bwengwa. Also Mongu and Sinangwa from Western province. About 9/10 are slaughtered and 1/10 are kept alive. The ones that are kept alive are sold to Lusaka west, Mombwa and Makeni. She has never bought goats from other countries because it is far away, but she is selling to DRC because prices are better there. Approximately 3/10 are sold to the DRC.

A sick goat has diarrhea, however, at the markets, goats will only get sick if they overstay, which happens if they stay longer than 3 days. The most common disease is diarrhea, which she treats by putting salt in the water. She also occasionally see coughing, skin disease, runny eyes and nose and abortion. She does nothing when this happens, she will just sell them.

She once bought a goat suffering from diarrhea because she didn't know it was sick. She has never sold a sick goat but she would sell goats suffering from coughing and runny eyes and nose. She does not think selling goats with diarrhea is OK. She has never heard of people selling goats that have died on their own and she would never consume it herself since she does not know why it died.

Can trade spread disease? No, not with goats, but when trading chicken it is possible.

Goats can be sick without showing visible symptoms. As an example she mentions gastric ulcers. I ask about the risks related with trading sick goats, she says it is a risk for his business and she can lose money. She does not think trade can spread disease.

She also doesn't think that humans can get sick when they consume sick animals, at least she has never experienced it. It is still a risk to consume sick goats because it goes against her religion.

### **Rural trader**

He is also a farmer of goats, soybean, maize, tomatoes and cotton. He has been trading for 10 years and went to school until grade 8. He is only trading goats that he has bought from other people, not his own goats. The goats typically stay with him for 2-3 days. He mostly sell for home consumption, to restaurants, butchers, DRC traders and farmers. He will sometimes also buy goats and take them back to his farm, if he sees a breed that he likes. If the goats look healthy he will release them with the other goats immediately, otherwise he will ask a vet to examine them first.

He sells goats mostly from Southern province, followed by central province, Eastern province and Western province. Kalomo is the most common district, followed by Monze and Choma. He also mentions Mombwa, Kapyanga, Mazabuka and Siavonga. About 9/10 are slaughtered, 1/10 are kept alive. The ones that are kept alive will go to Lusaka west, Chomgwe, Kafue and Ngwetete. He is currently not buying goats from other countries but he would like to start. He knows some people who are buying from Botswana. He sells to the DRC because they are good customers and they often buy in bulk. About 50% of his goats stay in Zambia, 50% are sold to the DRC.

A sick goat has standing fur and they stand with their head down. In trade, he is experiencing diarrhea, coughing, abortion and skin disease. When goats get sick at the market he tries to sell them quickly to avoid losing business. However, it is rare for them to get sick. He has never bought a sick goat and he would never buy one, even if the disease is mild and he was offered a good price. He is scared that the sick goat will die and he will make a loss. He does sell sick goats however. He thinks all diseases except skin disease is OK to sell, skin disease is too difficult to treat. He thinks it is OK to sell goats with diarrhea, however, they are difficult to sell. I ask why traders sell sick goats, he says to avoid losses. When I ask why people buy sick goats he answers because they are cheap.

He knows of people selling bodies of dead goats but they are not open about it since it is not according to most religious practices. He thinks it is OK to sell goats that die during transport. He also says that many people ask specifically to buy goats that are already dead because it is cheap.

He is aware that trade can contribute to spreading disease, but he does not think humans can get infected by animal diseases or that it is risky to eat sick goats or dead goats. When I ask if there are any risks with selling sick goats he answers that his business can be affected.

### **Urban trader, has been interviewed before**

She is selling animals that he bought from other people, not his own animals. She has been trading for 7 years and has been in school to grade 6. In general, the goats will stay with her

2-3 days before they are sold. The most common customer is home consumers, followed by butchers, farmers, restaurants, markets and DRC traders. The majority of the animals originate in Southern province, followed by Eastern province. Choma is the most common district followed by Monze and Mazabuka. Approximately 90% of the goats are slaughtered and 10% kept alive. The ones that are kept alive will mostly go to Lusaka West, Chongwe and Mombwa.

She has never bought goats from other countries because it is expensive. She does sell to other countries, mainly DRC because they offer good prices. Approximately 70% of her goats stay in Zambia, 30% go to the DRC.

In the market, she sees diarrhea, followed by coughing, skin disease and runny eyes and nose. When they have diarrhea she lets them eat more grass, otherwise she does nothing when the goats are sick.

She has never bought a sick goat and she would never buy, even if the price was good and the disease mild, because the goat could die and she would make a loss.

She has never sold a sick goat, because how could she, she doesn't buy sick goats so therefore she can't sell one either. She thinks runt nose and diarrhea is OK to sell because they are mild diseases that will heal, but not skin disease because it can spread to the buyers herd.

She is not aware of people selling dead bodies and she points out that it is not allowed. It is never OK to sell a goat that died on its own because she doesn't know why it died.

I ask why people sell sick goats. She answers out of fear for losses. I ask why people buy sick goats, she answers that it is rare but they do it because it is cheap.

She does not know how infectious diseases are spread. She does not think it is possible for goats to be sick without showing external signs.

She is aware that trade can spread disease, more specifically skin disease. She also knows that humans can get sick if they eat a sick goat. She says that humans can also get sick when they eat a dead goat and also points out that it is wrong to eat dead goats.

### **Rural trader**

Trader of goats from Kalomo district. He is also a farmer of goats, sheep, cattle, chicken, guinea fowl, soybeans, maize, groundnuts, cotton, cowpeas etc. He was in school until grade 10 and has been trading goats for 18 years. He only trades goats that he has reared himself. He transports them here by truck. A sick goat has standing fur, it is coughing and weak. He sees skin disease, coughing and runny nose, diarrhea, limping and abortion at the market. He has never bought a sick goat but he would buy one with limping, diarrhea, skin disease. He would not buy one that is coughing and has a runny nose. He has never sold a sick goat and wouldn't sell, even if someone really wanted to buy. It would not be right to the buyer. Not even a mild runny nose. He has also never sold the body of a dead goat, this is also never OK because it can spread disease to people.

Trade can contribute to spreading disease but it is not possible for a goat to have a hidden sickness. Humans can get sick if they eat a sick goat, they get diarrhea. He never slaughters and eat sick goats, she treats them and if it doesn't work she will throw them away. He could get sick otherwise. He has never eaten a goat that has died on its own because he could get sick, and also it is disgusting!

### **Rural trader**

He is trading goats and chicken, both ones that he has reared himself and ones that he has bought from other people. He is a farmer of maize, groundnuts, sweet potatoes, goats, sheep,

chicken and cattle. He was in school for 4 years and has been trading goats for 15 years. Originally from Choma district. The goats are generally with him for 1-2 weeks before they are sold. He only sells to the urban traders at the market. Sometimes he also go to Kasumbalesa.

He gets goats from nearby villages but he won't go far. He usually pay people to help him take the goats with him between the villages, they use bicycles. He let them mix with goats in the villages and also keep them together with his goats at home. He transport the goats to the market by trucks. He has never bought goats from other countries but he sell to the DRC because prices are good there. The majority are however sold nationally (about 95%). Sick goats have standing fur, they have nasal discharge and diarrhea. He has never bought a sick goat and he would not buy one because humans can get sick.

He has never sold a sick goat and would not sell one because the vet would not allow it. It is never OK to sell a sick goat. He never sells dead goats either, he would burn it.

Trade can spread disease. Goats can be sick without showing external symptoms but since the vet always take blood samples when issuing transfer permits, they will always discover the disease.

Are there any risks with trading sick animals? Yes, he can get caught by the authorities and spread disease. He says also that humans can get sick from eating sick goats since not all viruses will not die even if he boils the meat. He has never eaten a sick goat and not a self-dead goat since he is a Christian and it goes against his religion. Also, he can get sick.

### **Urban trader**

Trades goats, only ones that he has bought from other people. The goats can spend very varying time with him depending on how good business is, ranging from 1 day to two weeks. He mostly sell to DRC traders, followed by home consumers and farmers. The majority of the goats are slaughtered after being sold. Most go to bars, followed by restaurants, markets, butcheries, supermarkets and last, home consumption. He has never bought a goat from another country but he regularly sells to the DRC because it is good business. About 6/10 are sold to DRC, 4/10 nationally.

A sick goat has standing fur and runny nose. The most common diseases at markets are coughing and runny nose, followed by diarrhea and skin disease. He sells them without further action. Cough and runny nose is caused by dust, diarrhea by the food. He thinks runny nose, cough and diarrhea all are OK for the goats to have and still be sold. It is not OK if they have skin disease or FMD. He has never bought a sick goat and would never do it either because it could die and then he would make a loss. He has sold goats with runny nose before and he would sell any disease if the customer really wanted to buy the goat. He has never and would never sell a goat that has died on its own because it is illegal and he could lose customers.

Diseases can be spread through trade. Humans can get sick if they eat a sick goat, he thinks it is OK to eat goats that are coughing and has a runny nose and diarrhea, but not skin disease. I ask him to motivate why he eats sick goats in spite of knowing that he can get sick. He answers that they are coughing due to dust and dirt and then it is OK. I also ask him to motivate that he is selling sick goats in spite of knowing the risks, he answers that the goats get sick at the market, not before they get there, they get sick while under his care, and therefore it is OK.

He has never gone to school, and has been trading for ten years.

### **Urban trader, has already been interviewed**

Trader of goats, only selling other people's animals. The goats will generally stay for 2-3 days with him before being sold. He sells to home consumers, DRC traders and farmers. About 6/10 of the goats are slaughtered, 4/10 are kept alive. The slaughtered ones will mostly go to restaurants, followed by markets, butcheries, home consumption/hotels/supermarkets. The ones that are kept alive will go to Chilanga and Kabangwe, all within Lusaka district. He often sell to the DRC, about 8/10 go there, remaining 2 are sold nationally.

A sick goat has runny nose and is weak. At the markets he see diarrhea, followed by runny nose and eyes, and coughing. He sell them for a low price. In his opinion, all diseases are OK to sell. He would never buy a sick goat however because it is expensive to treat diseases. He has sold goats with diseases before. He would however not sell a goat that had died on its own because it is illegal. The main risk with selling sick goats is that it is bad for his business. I ask if it can spread disease, to which he answers yes, but he mainly sell to consumers and therefore he thinks it is OK. He thinks all diseases are OK to slaughter and eat, he can't think of one where it is not OK. If he eats a dead goat he can get sick if the goat died from poisoning.

I ask him to motivate the fact that he is aware that trade of sick goats spread disease but still do; he says that they get diarrhea because they have eaten maize flour, they can only get diarrhea because they are sick if they overstay. He has been trading for ten years, have been in school 11 years.

#### **Market customer, Lusaka**

He lives in Lusaka and comes to the market at least once a year. He looks for health and fitness in the goats that he buys, and to him, being healthy means being fat. Sick goats are skinny and weak. He can always see on the outside if a goat is sick. He buys goats for slaughter, slaughters them at home himself. He inspects the meat himself, he can usually see if the goat has been sick but he admits that he can't see all diseases. He says humans can get sick from animal diseases if they eat a sick animal. Therefore, it is never OK to eat a sick goat, not even a mild runny nose.

#### **Market customer, Lusaka**

Man, about 40 years old. Buying for his boss, who owns a restaurant in Lusaka. Slaughters themselves, the meat is not inspected by anyone.

#### **Market customer, Lusaka**

He lives in Lusaka and comes to the market at least once a week. He looks for fat goats to buy, since he believes that a fat goat cannot be sick. He is however aware that some diseases are hidden from the outside. He buys for slaughter, they are slaughtered at the market slaughter house. He will later take the meat and organs to sell at a butchery. The meat and organs are not inspected by anyone. It is not possible for humans to get sick when they eat a sick goat, because him and his family will grill the meat and organs prior to consuming it, and that kills all diseases. He has never bought a sick goat.

#### **Market customer, Lusaka**

She lives in Lusaka and comes to the market at least once a week. She buys fat goats. She says that she can always see on the outside if a goat is sick, she just knows. She has the goats slaughtered at the market slaughterhouse and then sell the meat in her shelter at the bus station. The meat and organs are not inspected by anyone. There is no risk for anyone to eat the meat, even if it hasn't been inspected, since she boils the meat. Also, she only buys

healthy goats. She says it is possible to get sick from animal diseases if you do not boil the meat, especially if it is pigs meat. She then starts to reflect and says that maybe it is possible to get sick also if you boil the meat, she does not know. When I ask if there are any clinical signs where she does not slaughter and sell the meat, she says that if the goat has sores in the GI tract, she will throw the affected parts away but sell the meat. She would never eat a goat that has died on its own because of her religion. She has never bought a sick goat.

### **Market customer, Lusaka**

He is from Lusaka and it is rare for him to go to the market, now it is more than a year ago since the last time. He buys goats that look physically fit and looks healthy, it should have energetic eyes and nice looking pelt/fur. A sick goat has diarrhea, swollen eyes, mastitis, swollen scrotum and is infested with insects. Disease is always visible on the outside. He buys for slaughter and resell the meat. He uses an abattoir in Lusaka, but does the meat and organ inspection himself. Humans can get sick when they eat sick animals, one example is swine fever which humans get by eating infected meat. He has never bought a sick goat since he can always see on the outside if a goat is sick.

## **Kasumbalesa market, September 2018**

### **Trader**

He is trading goats that he has reared himself as well as goats bought from other people. He is also a farmer of groundnuts, maize, cotton, sweet potatoes, soy beans, goats, cattle, chicken, guinea fowl... He has been trading for two years, was in school until 7<sup>th</sup> grade.

The goats generally stay with him 1 month before they are sold. He is originally from Mombwa district in central province. He gets the goats that he is trading from his own herd and other farmers in his village. He does never go further because it becomes too far which makes it too complicated. He keeps the goats together with his own herd for a while before going to the market. They use trucks to transport the goats to Kasumbalesa. For this they need a stock movement permit. When the vet issues the certificate he/she will sometimes not even look at the animals, just ask for the number. He does not know what happens at veterinary checkpoints on the way to the market since he does not keep the papers, the drivers do.

He has never bought goats from other countries since it is too far, he can't get transport there. He does sell to the DRC because prices there are good. About  $\frac{3}{4}$  of his goats are sold to the DRC,  $\frac{1}{4}$  within Zambia.

Cough and runny nose he sees at the markets. He does nothing, just sells them. He once bought a goat that was coughing, he was aware that it was sick. He has also sold goats suffering from coughing and runny nose. He would never sell a self-dead goat because of his religion.

He does not know how infectious diseases are spread and he doesn't think that goats can be sick without showing external symptoms. He does however point out that he has "less knowledge".

When asked about risks related to trading sick goats he answers that he can lose customers. I ask if the disease can be transmitted, he answers yes, some diseases can. He knows that humans can get sick from consuming sick goats but he does not know which diseases. He thinks it is OK to eat skin disease, coughing and runny nose. Diarrhea is also OK if the intestines are thrown away. When I ask what diseases are not OK to eat he answers that he does not know.

Are there any risks with eating goats that have died on their own? Yes, it is illegal and goes against religion. I ask if people can get sick, he answers yes but does not know which diseases.

I ask him to motivate why he sells sick goats in spite of knowing that it can contribute to spread disease. He answers that he knows that it is a risk, but he sees no other option. It is too far to take them back, he cannot afford it, he has to sell them.

### **Trader**

He is a trader of goats, he is only trading with goats from other people. He has been in school nine years, and trading ten years.

The goats generally stay a week with him before being sold. He mostly sell to DRC traders, occasionally people buying for home consumption. About ¼ are sold for slaughter, the rest pretty much go to the DRC. He is from central province and gets goats from nearby villages. He rents a truck, go around and buy goats, and then continue to Kasumbalesa. He can go about 2-3 hrs by truck in search of goats. He lets the goats mix with goats in the villages where he looks for goats. He does not have any goats of his own.

When he gets a vet certificate for the transfer permit, the vet examines a few of the goats but looks at all of them. He does not know what happens at the checkpoints since he is not travelling with the goats, only the driver will know.

A sick goat has poor appetite and is coughing. He sees no diseases in the animals in the market, he does not see diarrhea, coughing, nothing!

He thinks it is OK to sell coughing, runny nose and skin disease, but not diarrhea, because he thinks the first three are minor whereas diarrhea is a serious disease. He has never bought. A sick goat but would, if the disease was mild and he was offered a good price. He has sold sick goats as well, they have been coughing and have had runny nose.

He has also sold bodies of dead goats, he will sell them for a really good price. He thinks it is OK to sell goats that have died in transport or were coughing. He would not sell a goat that died with diarrhea.

Diseases can be spread airborne and through close contact. I ask about risks with trading sick goats, he answers that humans can get sick and its bad for business.

He knows that humans can get sick from eating sick goats. He thinks however that it is OK to slaughter and eat goats suffering from coughing, runny nose and diarrhea. It is not OK if they have sores on the meat. Humans can get sick when eating sick goats.

I ask him to motivate the fact that he both eats sick goats in spite of knowing the risks, and that he trades sick goats. He answers that he only does this with mild diseases, not serious ones like skin disease.

### **Trader**

He is a trader from central province, mambwa district. He is a farmer of goats, sheep, cattle, chicken, maize, soybeans, sunflower, groundnuts. He has been trading 1.5 years and he has been in school 7 years. He trades both with goats that he has reared himself and goats that he has bought from other people. The goats typically stay with him a month before being sold. He only sell to DRC traders. He gets goats to trade from Mombwa district and Chililalombwe district. The farthest he will go in search of goats to trade is one whole day of walking. He walks the goats between villages and let them graze and sleep together with the goats in the villages. He also keep them with his goats at his farm. The goats are transported to Kasumbalesa by truck, he takes them to a meeting point where traders wait for truckers to arrive. When he gets the vet certificate for the stock movement permit; the vet don't even see

the goats, they just issue the permit. He only see police at the checkpoint, not vets. About  $\frac{3}{4}$  of the goats he sell go to the DRC.

A sick goat has standing fur and poor appetite. The goats at the market are not sick however, they are not staying long enough to get sick. He thinks all diseases are OK to sell, there are no diseases where it is not OK to sell the goat. It is OK because Kasumbalesa is a final market, the goats will be consumed. No one cares if the goats are sick when they are going to be consumed. He has never bought and will never buy a sick goat out of fear of losses. He has sold sick goats. He has never and would never sell a goat that has died on its own, however, sometimes people come to him and offer to bury/burn self-dead goats. He suspects that they eat or sell them... He also says he thinks it is OK to sell if it died during transport. When I ask about risks with trading sick goats, he answers that it can affect his business, and after a probe he also says that it can spread disease. He says humans can get sick from eating sick animals, even if the meat is boiled. He still thinks it is OK to eat goats suffering from worms, runny nose, coughing, diarrhea... when I ask if there are diseases that are not OK to eat, he says he knows there are some but he doesn't know which ones. The vet says that they should not eat some diseases but he doesn't know which ones. I ask him to motivate the fact that he is aware of the risks but will still eat, he answers that he knows that it is wrong but he has not experienced someone getting sick from doing it. He also says that you can get sick if you eat a self-dead goat.

### **Trader**

He is a farmer of maize, soybeans, goats, chicken and cattle. He went to grade 10 in school and has been trading for 1 year. He trades animals that he has reared himself and animals that he has bought from other people (today its just one goat from someone else, the rest are his). He only sells to DRC traders. He is from central province. He buys goats in his own village only. He will not go farther than about 10 min looking for goats. He does not need to go further, there are plenty of goats for him to buy in his village. He keeps the other goats together with his goats at home. He transports them by truck to Kasumbalesa. To do this he needs a stock movement permit. The vet takes a blood sample and examines a few individuals. At the checkpoints the papers are checked, not the animals.

A sick goat has poor appetite and is coughing. He sees no signs of disease in the animals in trade, not diarrhea, skin disease, runny nose, coughing, abortion or skin disease. He thinks it is always OK to sell goats with signs of disease, regardless of the clinical sign. At home he would treat the goat and sell it afterwards but he can't do that here. He has never bought a sick goat but buy one with a mild disease if he was offered it for a good price. He would also sell a sick goat, but only here at the market, at home he would first treat it. He would also sell a self-dead goat if someone really wanted it. He points out that some people buy carcasses to their dogs. He does not OK to eat goats that have died on their own, it goes against his religion.

He knows that trade can spread disease and that goats can be sick without showing symptoms. When I ask about the risks of trading sick goats, he answers lose business. He also knows that humans can get sick if they eat a meat from a sick goat. He thinks it is OK to eat goats that were suffering from coughing and runny nose, but it is not OK if they had diarrhea, skin disease or when they have wounds on the body or sores on internal organs. When I ask about risks related to consuming goats that have died on their own, he answers that it is illegal, the meat probably tastes bad and he can get sick.

I ask him to motivate that he sells sick goats in spite of knowing that it can spread disease, he answers that he knows it is wrong but feels like he has to in order to avoid losing money. I ask him also to motivate that he eats goats suffering from clinical signs in spite of knowing

that it is a risk. He answers that he only do it if the disease is mild. Mild coughing and runny nose is because of dust, severe cough is because of illness.

### **Trader**

Trades goats, only goats that he has bought from other people, not his own goats (he is not a farmer). The goats can stay with him for about a month since that is the time he needs to gather goats. He mostly sell to DRC traders, followed with people buying for slaughter, and last farmers. He is from Eastern province and collects goats in nearby villages. He will travel up to 65 km to collect goats for trading, travelling by bike between the villages. He also says that he never look for goats to trade in Southern province because the prices are bad there. He does not let the goats come with him when he goes between the villages, he collects them in one location. He is not a farmer and hence the goats are not mixing with any goats back home. He transports the goats to Kasumbalesa by truck. He has never bought from another country but regularly sell to the DRC (from Kadumbalesa) since business there is better and it goes quickly to sell. About 9/10 go to DRC, 1/10 stay in Zambia.

He can see if a goat is sick. They show symptoms, such as sneezing and coughing. He thinks it is OK to sell goats with diarrhea, runny nose and coughing, but not if they have skin disease. He has knowingly bought goats with skin disease, coughing and runny nose because the disease case was mild and he was offered a good price. He has never sold a sick goat since he wants to sell healthy goats to his clients. He would sell a mild case if the customer wanted it however. He knows some people will sell dead goats but he would never do it, it is not allowed, it goes against his religion and it is bad for your health.

He knows diseases can be hidden, and also that disease can spread through mixing of goat, he says that for example runny nose and cough can be spread through mixing. When I ask about risks related to trading sick goats he answers that he risk losing customers. He also knows that humans can get sick if they eat a sick goat. He does still think it is OK to eat a goat that has runny nose, diarrhea and is coughing. He does not think it is OK to eat a goat suffering from skin disease. It is however never OK to eat a goat that has died on its own, never under any circumstances, since the consumer can get sick. He has been trading for 9 years and was in school until grade 12.

### **Trader**

Trades goats, only goats that other people have reared, not his own goats. He is a farmer of goats, cattle, chicken, maize, groundnuts, sunflowers. He has been trading one year and has been in school until grade 12. The goats generally stay with him for a week before they are sold. He mostly sell to final consumers, followed by DRC traders and last Zambian farmers. He is from Lusangasi district in Eastern province. He only trades goats from one village, it is too far to go to other villages. He mixes the goats that he is trading with goats that he keeps at home. The goats are transported to Kasumbalesa by truck. For this he needs a stock movement permit. When the vet issues the certificate for the permit, he/she will only look at the animals, not examine them. At the checkpoints the animals are not examined, only the papers. He has never bought from another country because it is too far.

A sick goat is showing symptoms, e.g. skin disease. He has never seen any goats with signs of disease at the market. He thinks it is OK to sell goats with coughing because this can be caused by the goat swallowing something and it ending up in the airways. He does not think it is OK to sell goats suffering from skin disease, diarrhea or runny nose. He has never bought a sick goat and would also not buy a mild disease for a good price, since it could spread to

others goats. He has never sold a sick goat and would not sell a sick goat even if the customer really want to buy it, since it can spread disease. He would never sell a dead body since it is not allowed by the health department.

Infectious diseases can be spread by trade and transporting goats. He does not think goats can be sick without visible symptoms. When I ask about risks with trading sick goats, he answers that if the goat is eaten, humans can get sick, and also, it can affect his business negatively.

He himself is a vegetarian, but he thinks in general it is not OK to eat sick goats, coughing is however OK since it can be due to it swallowing something so that it ends up in the airways.

I ask him to motivate the fact that he is aware of that trade is spreading disease and consuming sick animals is a risk, but still think it is OK to sell sick goats and consume sick goats. He answers that he can tell the difference between one who is e.g. coughing because it is sick and one who swallowed wrong, he just knows how.

### **Trader**

Trader of goats. He is only trading with goats from other people, not his own goats. The goats generally stay 3-4 days with him before being sold. This is his first time here and he has not sold anything so far, or traded anything before. He is from Choma district and gets goats from his home village and other nearby villages. He will not go further than 4 hours by truck, to get goats to trade. This includes going to nearby Zimba district. He uses trucks to go to Kasumbalesa, and also between the villages if it is far. The goats are not allowed to mix with goats in the villages since they are gathered in one spot. He also do not take them back to his farm, and even if he did he has no goats. When he gets the vet certificate for the stock movement permit, the vet will look at the goats but not examine them. He has never bought goats from another country, he does not see the need to do this, there are plenty of goats around him in the Zambian villages.

A sick goat has fur that is standing up, it does not eat, it gets skinny, has skin disease and sores around the muzzle. In reality, it is never OK to sell sick goats because it is illegal, but he will sell any kind of disease anyway, because he is afraid to make a loss otherwise. He says he knows that it is wrong but he has no choice. Where would he get money from to transport the goats back? He has to sell them to avoid a loss.

He has never bought a sick goat and would not buy one even if it had a mild illness and was sold for a good price. He would be too afraid to make a loss if the goat got sick and died.

This is his first time at the market, he has therefore never sold a sick goat, but he would if he was in the situation. He does not see any other way of dealing with the situation. He would however not sell a goat that had died, because he would be too afraid to get into trouble since it is illegal. There are no circumstances where it is OK to sell a self-dead goat.

Diseases can be spread through the air and water. It is possible for goats to be sick without visible symptoms, for example in the beginning. He says that trading sick goats is a risk because diseases can be spread to humans and animals. He is not sure if humans can get sick when eating sick goats, but he has been told in his village that this can happen. Therefore, it is never OK to eat a sick goat. It is also not OK to eat a dead goat since he can get sick, e.g. with skin disease.

He has been in school until grade 8.

### **Trader**

Trades sheep, not with sheep he has reared himself, only sheep from other people. He is a farmer of maize, soybeans, groundnuts, cattle, chicken, sheep and goats. He went to grade 9 in school and has been trading for 4 years. The sheep generally stay with him for 5 days before getting sold. He mostly sell to DRC trades, followed by final consumers and last farmers. He is from Mukonchi district and gets sheep to trade from nearby villages. He never go further than 4 hours to get sheep to trade, if it is farther than that he can't walk. He walks between villages. He lets the sheep mix with animals in the villages and will also keep them with his own animals at home for some time. The sheep are transported to Kasumbalesa by tuck. He has never bought from another country but often sell to people from the DRC because business is good.  $\frac{3}{4}$  are sold to DRC,  $\frac{1}{4}$  within Zambia. In animals in trade he sees runny nose, followed by coughing and lastly animals dying suddenly (in the trucks when they are overloaded). He does nothing with sheep that are coughing or have a runny nose. There is nothing he can do here at the market, if it happens back home he will get medicines and treat them but he can't do that here. At home he would maybe sell a goat with runny nose and cough but otherwise no. Here he will sell them regardless. He has never bought a sick sheep and would not buy even if it was a mild disease and he was offered a good price, because the disease can be spread to other sheep. He has never sold a sick sheep back home, but here at the market he has. He knows of people selling bodies of dead goats but have never done this himself. He would also never do it, if someone really wanted the body of one of his self-dead sheep he would give it away, not sell it. Selling it is against his religion.

He knows diseases can be spread through the air and also, e.g. if a goat with diarrhea poops on the grass and another goat eats the grass, it can get sick. It is not possible for a sheep to be sick without showing visible symptoms.

Risks related to trading sick sheep are spreading disease, losing animals and losing business. Humans can get sick from eating sick goats, e.g. when the animal has skin disease. He knows someone who got skin disease from eating a goat with skin disease.

I ask if he thinks there are any diseases that it is OK to consume. He answers that if it has symptoms because of a disease it is never OK, then his religion forbids it. It is OK to eat runny nose and coughing due to dirt. I ask how he knows if it is coughing due to dirt or because it is sick. He answers that since the sheep was healthy when he bought it it cant be sick, it has to be coughing due to dirt. If you eat a sick animal it is possible to get sick. It. Is never OK to eat a self-dead sheep since it is against his religion.

### **Trader**

Trader of goats, trades both goats that he has reared himself and goats from other people. In general a goat will stay with him for 2 days before it is sold.  $\frac{3}{4}$ . Are sold to the DRC,  $\frac{1}{4}$  to Zambia. He is from Chisamba district. He can sometimes walk for eight hours in search for goats to trade. He sometimes also go by bike. The goats are not allowed to mix with his goats at home out of fear that they could infect his goats with disease. The goats are transported to Kasumbalesa by truck.

A sick goat has standing fur, is coughing and has skin disease. He sees skin disease, coughing, runny nose and diarrhea in animals in trade. He does nothing, just sell them. If it happened at his home he would treat it before selling but he cant do that here at the market, so he just sells them. All diseases are OK to sell at the markets since he can't transport the animals back home. He has never bought and would never buy a sick goat, even a mild case

for a good price, because he would be afraid of loss and spreading disease. He has never sold a sick goat. He would also not sell a self-dead goat because it is bad for his business and against his religion.

Diseases can be spread when animals are transported. It is not possible for a goat to be sick without external symptoms. He is not sure if humans can get sick when eating sick animals but he thinks so because he has heard about it, although never experienced it himself. He says it is never OK to eat a sick goat or a dead goat, but then changes his mind and say that he would eat if it e.g. was coughing due to dirt.

He is a farmer of cattle, goats, sheep, chicken, maize, soybeans etc. He has been trading three months and has been in school since grade 9.

### **Trader**

Trades goats, only goats that he has bought from other people. He is also a farmer of e.g. goats, cattle, chicken, guinea fowl, maize, sunflower, cotton etc. The goats generally stay with him about a week before being sold. He is from namwala and trade goats from nearby villages. He will generally not walk further than 2-3 hours to get goats for trade. He always walk between villages. He collects the goats in one place where he waits for transport, but there they are allowed to mix with local goats, they graze together with them. He takes the goats by trucks to Kasumbalesa. He has never bought a goat from another country because it is too far away but he often sell to DRC because business there is better.

Goats that are sick have standing fur and a runny nose.

He sees runny nose and coughing primarily in animals in trade, and diarrhea, sudden death during transport, abortions. He does nothing since they are going to be sold anyway. Runny nose and coughing and diarrhea is because of dirty environment, sudden death and abortion because of overloading. He thinks all diseases are OK to sell, can't think of one where it is not OK, since this is the "last point" for the goats (meaning that they will be slaughtered afterwards). He has never and would never buy a sick goat out of fear that it would die and he would make a loss. I ask if he has ever sold a sick goat, he answers no, the transfer permit system/stock movement permit system, makes it impossible to sell sick goats since they are checked by a vet before coming to the market. He would sell a sick goat if the customer really wanted it, but he would sell it for a low price. He has heard of people selling self-dead goats but he has never and would never do it. There is no profit in selling a self-dead goat, the payment is so small.

Diseases are spread airborne between goats. It is possible for goats to be sick without symptoms, e.g. like they are when they have Tuberculosis. The risk with trading sick animals is that he can lose money. After a probe he also says that disease can be spread. Humans can get sick from eating sick goats. It is OK to eat a goat that was sick with runny nose and diarrhea, because it can be due to feed changes. It is not OK to eat a goat that is coughing, since it can be coughing due to Tuberculosis. Also skin disease is not OK. It is OK to eat a goat that died during giving birth or when being transported. In general, humans risk getting sick if they consume a goat that died on its own.

He has been in school until grade 9 and has been trading goats for 20 years.

### **Trader**

Trades goats and pigs, only animals from other people, not his own. The goats typically stay with him for 2 weeks before being sold. He mainly sell to DRC traders, followed by home consumers and farmers in Zambia. He is from Sinasongwe district and trades from nearby villages. He walks between villages to keep transfer prices down, and can walk up to five

hours in search of goats to sell. Sometimes he will also bike. He lets the goats mix with animals in the villages and will also keep them together with his goats back home. They are transported to Kasumbalesa with trucks. To go there he needs to get a stock movement permit. When the vet issues, he/she will only look at the animals, not examine them. He has never bought goats from other countries because it is too far away, but he is selling to DRC regularly because business there is good business there.

He sees coughing, followed by diarrhea, skin disease, runny nose and sudden death due to overloading, in animals in trade. Coughing and runny nose happens when they are transported with pigs since pigs are dirty. He does nothing when he sees these symptoms. He thinks all symptoms are OK to sell, he will sell them for a good price. There are no symptoms that are not OK to sell that he can think off. He has sold sick goats many times. He would never buy a sick goat because it can die, and then he will make a loss. He would also not sell a dead goat, because no one would want to buy it. He does however think it is OK to sell goats that die due to lameness, and if they die during transport.

Diseases can be spread through air and trade, and goats can be sick without showing external symptoms. Trading sick goats risk harming his business and make people sick. People can get sick from eating a sick goat. It is however OK to eat goats that were limping or coughing before slaughter, not if they had diarrhea or skin disease.

I ask him to motivate the fact that he eats sick goats in spite of knowing that it is a risk; he answers that he will only eat if he knows that they are not showing these symptoms due to illness, e.g. he will only eat runny nose because of dust and dirt, not if they were sick. I also ask him to motivate the fact that he sells sick goats in spite of knowing that the disease can be spread; he answers that he knows that it is wrong but has no other choice, he has to sell to avoid making losses.

He is a farmer of maize, sorghum, groundnuts, tomatoes, goats, pigs, chicken, cattle... He has been trading since 27 years and was in school until grade 9.

### **Trader**

He is not a farmer, he has been trading goats for 7 years. He has a university degree. He is a trader of goats and pigs, only ones that he has bought from other people. The goats will in general stay with him for about two weeks before going to the market, and about 2-3 days at Kasumbalesa. Most of the goats sold will go to the DRC. He is from Choma district in southern province and trades goats from nearby villages. In addition to Choma district he will also go to Monze and Kalomo district. He transports the goats between villages by trucks, they are allowed to mix with goats in the villages. He is not a farmer himself, so they are not mixed with any goats back home. He also use trucks to transport the goats to Kasumbalesa. He has never bought a goat from another country because it is expensive and difficult. He regularly sell to the DRC because it is good business. About 9/10 go to the DRC, 1/10 stay in Zambia.

He regularly see cough+runny nose in trade, followed by diarrhea, skin disease, abortion and sudden death. He does nothing, just sell them quickly to avoid losses if they get too weak and die. They are there such a short time, it is not economically viable to treat them. He does not think it is OK to sell goats with diarrhea and skin disease, others are OK. He does not buy goats with skin disease and has therefore never been in a situation where he had to sell it. He has however bought goats that got diarrhea while being transported to the market. He sells

quickly to avoid loss. He has never and would never buy a goat that was sick, even if the disease was mild, because he would be too afraid that it would die and he would make a financial loss. He has however sold sick goats. He thinks it is OK to sell a dead body if the goat died with diarrhea, coughing etc., but not if it suffered from skin disease. He also thinks it is OK to eat a goat that died from anything but skin disease, skin disease is not OK. There is no risk with eating a goat that has died on its own.

The risk with trading sick goats is primarily that he can make a loss and it can make him look bad. I ask if it can spread disease, he answers yes but this is primarily with pigs, since goats are very resistant to diseases and rarely get sick. He does not think humans can get infected if they eat a sick goat, but if you eat a sick goat they will taste badly. He still thinks it is always OK to do it, it is not a risk, unless you eat one that is undergoing treatment. It will however taste bad. He remarks that if you eat a pig with sores on the meat, humans can get sick, but not goats.

### **Market customer**

He is from the DRC, he comes to Kasumbalesa at least once a week to buy goats and pigs. He looks for fat goats to buy. When I ask how he can tell if a goat/sheep is sick he answers that no sick goats/sheep will come to the market. He then says that sickness can be spotted because the pelt stands up, they lose appetite and will often get swollen around the abdomen. He says some diseases cannot be spotted from the outside, some diseases are hidden. He buys the goats and transport them alive across the border to the DRC, where they are slaughtered for human consumption. He does not know if it is possible for humans to get infected by animal diseases, but says that there are no risks involved with eating a sick goat.. He thinks it is always OK to slaughter and eat goats that are sick, regardless of the symptoms. He would not do this with pigs though. Eating goats with diarrhea, coughing, runny nose, bloat etc are all OK according to him. He does not consume animals that have died on his own, but says a lot of others do. It goes against his religion. For it to be ok according to his religion it has to be slaughtered.

He has never bought a sick goat and would never do this, not even if the disease was mild and he was offered a good price.

### **Congolese market customer**

He is at Kasumbalesa to buy goats, comes to the market at least once a week. He looks for fat goats to buy. Sick goats have poor appetite, are reluctant to move. He can always see if a goat is sick, no diseases are hidden from him. He buys goats and transport them alive across the border to Lubumbashi, DRC, where they are re-sold. Most of them are sold for slaughter but some are bought by farmers for keeping. He does not know if humans can get diseases from animals, but he says that humans can get sick too if they eat a sick animal. He thinks it is OK to eat goats that are coughing, have a runny nose and who has diarrhea. He does not think it is OK to eat goats if the meat is yellow and if there are sores on the meat. He first says that it is never OK to eat a goat that has died on its own, but later says it is OK if it died during transport. He needs to know why it died to be able to eat it.

He has never bought a sick goat, he is too afraid to lose business. He would however buy a goat with a mild disease if he was offered a good price. I ask if he thinks it is possible for sick

goats purchased in Zambia to transfer disease to DRC, he answers no, the animals are examined at the border by a vet and the vet will discover if an animal is sick.

I ask him to motivate why he eats goats with signs of disease even though he is aware of the fact that it is a risk for his health. He answers that he thinks it is OK to eat when the goats are coughing because of dust, not when it is coughing because of disease. He can tell the difference between these two, he can't explain how but he does.

### **Congolese market customer**

He comes to Kasumbalesa at least once a week to buy goats. He looks for fat and healthy goats, being healthy to the respondent means being fat. Sick goats have sores around the mouth and around the anus. Skin disease is also a sign of sickness. He says some diseases are not visible from the outside, some are hidden.

He buys goats and transport them to Lubumbashi where they are typically slaughtered but a small number is kept alive (ranging to up to 2/10). The goats are slaughtered at a slaughterhouse and end up at markets or in restaurants. Humans can get sick through consuming sick animals. He thinks it is OK to eat goats suffering from diarrhea but not if they are coughing or has a runny nose or skin disease. It is however not OK to eat goats that have died on their own, not even if it died during transport. It is illegal and is against his religion. I ask if he could get sick if he ate an animal that died on its own, to which his answer is yes.

I ask if he has ever sold a sick goat. He answers yes, a big nice goat with skin disease. He sold it for a good price, but the buyer contacted the police when he discovered the illness, and the respondent had to pay a fine. I ask if it is possible if a sick goat is bought in Zambia for disease to be transmitted to the DRC, he answers yes.

### **Market customer, Congolese**

He comes to the market at least once a week to buy goats. He looks for fatness. A sick goat is weak, anorectic and it often has skin disease. He can always see on the outside if a goat is sick. He transports the goats to the DRC where all of them are re-sold for slaughter, no goats are kept alive. He does not think it is possible for humans to get sick from animal diseases and there are no risks with eating sick goats. There are no diseases here he would not be comfortable with slaughtering and eating a sheep or a goat, diarrhea, coughing, runny nose, they are all OK to him. It is never OK to eat a goat that has died on its own however, it goes against his religion. When I ask if humans can get sick he says he does not know. I ask about the ones that die during transport, he says those goats never enter the market, they are burnt.

He has never bought a sick goat but would if the condition was mild and he was offered a good price. He does not think it is a risk to take this sick goat back to the DRC since the animals are checked by a vet prior to entry and the vet detects all sick animals.

### **Market customer, Congolese**

He comes to Kasumbalesa about three times per week. He looks for fat goats to buy. Sick goats are tired, they do not move, they typically have diarrhea. He can always see on the outside if a goat is sick. He transports the goats alive to Lubumbashi, DRC, where they are re-sold for slaughter. When I ask if humans can get infected by animal diseases he says he has heard that it is possible but he does not know how. He does however know that people can get sick if they eat a sick goat. He thinks it is OK to slaughter and eat an animal suffering from any illness except for one with diarrhea. He also says that the people at Lubumbashi

don't really care if the goats are sick. It is however never OK to eat a goat that died on its own, even if it died during transport.

When I ask if there are diseases that it is OK for a goat to have and be sold, he says that coughing and runny nose is OK but not diarrhea. He has never bought a sick goat since he is afraid that it might die before he can sell it. He would not even buy a mildly sick goat for a good price because of this fear. He is aware also that it is a risk that a sick goat can transfer disease to Lubumbashi.

### **Market customer**

He comes from Kitwe. This is the first time that he visits Kasumbalesa. He is there to buy goats. He looks for specific breeds, size (they should be big), healthy looking individuals and individuals that have not been treated with medicine. A sick goat is a goat that has symptoms of disease, e.g. coughing, breathing heavily, runny nose. He is aware that some diseases are not visible from the outside. He is buying goats for his farm in Mpongwe district.

Diseases can be spread between goats through water and food. He does not think humans can get sick from animal diseases, but he later says that humans can get sick when they eat a sick goat. He says that it is always OK to slaughter and eat a sick goat, regardless of the clinical sign. It is however never OK to eat a goat that has died on its own, even if it died during transport. He once accidentally bought a sick goat, it had blood in the urine. He does not make these mistakes anymore. He would not buy a sick goat, even if it had a mild disease and it was sold for a good price. This is because it could die suddenly or spread disease to his goats back home. He keeps the new goat separated from the rest for 1 month to prevent it from spreading disease to his animals.

### **Market customer, Kasumbalesa**

He is from the DRC and comes to the market at least once a week. He buys fat goats. A sick goat has runny nose, sores, it is thin and is reluctant to eat. He cannot always see on the outside if a goat is sick, some diseases are hidden. He transports the goats to the DRC where they are resold for slaughter. Some does buy kids for keeping. Humans can get infected by goat diseases by eating infected meat or organs. It is never OK to slaughter and eat a sick goat, not even a mild runny nose, it is illegal! It is also never OK to eat a goat that has died on its own. He throws the body away. He has never bought a sick goat and would not do it, even if the disease was mild, since it could affect his business negatively. He does not know there is a risk associated with buying a sick goat in Zambia, taking it to the DRC and then transmitting disease there.

### **Market customer, Kasumbalesa**

Buys goats, from the DRC. He comes to Kasumbalesa at least once a week. He buys fat goats. A sick goat has runny nose, is weak, tired and has sores around the mouth. He does not buy these goats. He also says that some diseases cannot be spotted from the outside.

He buys goats, transports them alive to Lubumbashi where they are re-sold, most for slaughter but some for keeping.

He does not buy sick goats, not even mild diseases. This is partly because it is bad for his business, but also because they can infect humans.

He would never sell or consume a goat that has died on its own. This is because it is illegal and goes against his religion. I ask if humans risk getting sick from doing this, he says he does not know. It is possible that if he buys a sick goat and takes it with him, that it can transmit the disease in the DRC.

### **Market customer, Kasumbalesa**

This man is interviewed in French, with an ad-hoc interpreter translating to bemba, so that my interpreter can translate to me.

He is from the DRC, comes at least once a week to the market. He buys fat goats, sick goats have skin disease, sores around the mouth, sores around the udder, diarrhea, and poor appetite. He can always see on the outside if a goat is sick. He transports the goats alive to Lubumbashi where they are resold, most for slaughter but some for keeping. He says humans can get infected by animal diseases but do not know how. He thinks it is OK to slaughter and eat mild cough, skin disease and runny nose. It is not OK to eat the intestines if they have sores, they then throw the intestines away and eat the meat. It is never OK to eat a goat that died on its own, he does not know why it died and it goes against his religion, but he does not know if this can make people sick, he has at least never experienced it. He has never bought a sick goat. He buys goats in Zambia instead of the DRC because roads are bad there and there are no goats on the Congolese side for many km.