**BIOGAS ASSESSMENT PROJECT**

**Site ID: 22**

**Date: July 26, 2022**

**Interviewer**: Where did this digest originated from?

**Interviewee**: Mmh, the installers said the digester was from China.

**Interviewer**: Who built it?

**Interviewee**: [name redacted] was responsible for overseeing the installation of the digesters here in Nankumba. But, we cannot recall who else was involved because it has been a long time.

**Interviewer**: How long has it been?

**Interviewee**: A lot of time has passed. It's been three years, if not four years. They came the first time and installed a biogas digester made of ordinary plastic digester bag which didn’t last long. Then, they came a year later with a biogas digester made of very strong and durable plastic. The first digesters didn’t work. Then, they came a year later with the second digester that worked, and even the bags stayed for a very long time.

**Interviewer**: So in 2018, they came with the digesters made of ordinary plastic bags. Then, they came a year later and installed the digester that we have found?

**Interviewee**: Yeah, and they even brought a different stove; the first time they brought a stove made of clay that did not work.

**Interviewer**: So, when they came the second time, what was your interaction with them like?

**Interviewee**: They admitted that the first ones didn’t work, and assured us that the new digester was going to work. And, we did really see a difference because we were able to use for some days, and even some months.

**Interviewer**: The first ones?

**Interviewee**: We first once didn’t work at all. It never produced fire.

**Interviewer**: You mean after they installed the first ones you did not even use it for a day?

**Interviewee**: Yeah, not even a second. I didn’t even see fire. But, the second digester worked and people were able to come and see it working; many people came including all my neighbors.

**Interviewer**: How many people built this one? It was [name redacted] and how many other people?

**Interviewee**: It was four; [name redacted], a white man, and two other black people, of which one was female.

**Interviewer**: When was this, 2018?

**Interviewee**: I believe it was 2018.

**Interviewer**: How long did it take to build the digester?

**Interviewee**: First, they gave us dimensions and told us to dig a hole according to the dimensions. After some days, they came to install with the digester. The installation took about an hour, and we also took about one hour to prepare the first to feedstock.

**Interviewer**: How long did it take you to dig the hole and how many were you?

**Interviewee**: It was two, and it took us a day or two. Initially, they drew a circle on the ground where we were supposed to dig the hole. They told us to dig a hole 1.5 meters deep. The diameter was two meters. The hole we made for the first one was different from the second one; the first hole was very shallow and long.

**Interviewer**: Okay, what was you role?

**Interviewee**: To dig the hole, and to feed it with cow manure and water.

**Interviewer**: Okay, we will talk about the feedstock and water at length later. But for the time being let us talk about how you were selected to be a beneficiary. I mean, in this village there are many households, over 100, how were you chosen as beneficiary?

**Interviewee**: (Stays quiet) Laughs

**Interviewer**: Is it clear?

**Interviewee**: Yes, it is clear (laughs) [let me come and help]

**Interviewer**: Come - we have many households in this community, even more than 300, so how were you selected as a beneficiary?

**Interviewee**: They selected us because we possess certain skills, so they thought we could manage it better.

**Interviewer**: Ooh, what skills do you have? We have many skills, so what kind of skills do you possess?

**Interviewee**: Before giving out these things, they look at all individuals in the community, so they looked at us and felt that we could manage the digester. Maybe, they looked what we had which others didn’t have.

**Interviewer**: Okay, so which things do you think made you stand out?

**Interviewee**: I think it is because to run a digester you need a cow house, and they saw that we had cows, so thought they could operate with ease.

**Interviewer**: Oh, okay. How many cows did you had that time?

**Interviewee**: I believe we had three adult cows and two young ones. In total, I can say we had five cows.

**Interviewer**: By the way, when you say [name redacted], do you mean the extension worker from agriculture?

**Interviewee**: Yeah.

**Interviewer**: How did the approached you? Or, how did you learn that you were going to benefit?

**Interviewee**: He just came here and told us that people were going to come and install a digester here, and he asked us if we could be interested and I told him that I was interested. Then, after a week or so, came and asked us to find cow manure. At the beginning, we did not have enough cow manure, so we went to ask from other people, as we had to attain a certain amount of manure to start it up.

**Interviewer**: Before [name redacted] and his team came, did you know anything about biogas?

**Interviewee**: No, no.

**Interviewer**: So, what were your expectations?

**Interviewee**: We expected people to come, learn and adopt this type of cooking in their homes. We expected to cook with ease, and without using firewood. In addition, we expected to conserve the environment as we anticipated cooking without firewood, but cow manure.

**Interviewer**: What did [name redacted] and his team told you to expect from this?

**Interviewee**: They basically said we would be using the digester for cooking.

**Interviewer**: Apart from that, what else were you told to expect from this?

**Interviewee**: They told us a few things, but we are humans and it has been a long time, so we have forgotten some of the things. I think they told us that the digester was going to be producing digestate that could be used as fertilizer.

**Interviewer**: Okay, did you use the digestate as fertilizer?

**Interviewee**: No.

**Interviewer**: Why not?

**Interviewee**: We did not manage to collect the cow manure from the first digester bag because there was no proper setup; the manure (digestate) just spilled over to the ground. In regards to the second digester, they told us about the digestate. But, we expected them to do follow ups and tell us how to know that the digestate was ready, how to collect the digestate, because we did not know how to handle it. Sadly, before they for follow up the rains started, so we removed the bag from the ground so that it could not be rotten and eaten.

**Interviewee#2**: I can say the installers had no interest in this project because once the digester was installed it, they never came to see what was happening. We told them about the issues and they never came, so we thought the bag and project was done. Because our assumption was that once we reported a problem, they would be coming to rectify the issues. However, no matter how we tried to report, they just never came - and out of all the digesters that were installed around this community only this one worked, and we had people coming to see it.

**Interviewer**: So, out of all the digesters that were installed in area this one outlived the rest?

**Interviewee**: Yeah

**Interviewer**: Oh, how long did it work before it stopped?

**Interviewee**: Close to a year; and the person you first made your visit [name redacted], is the one whose digester failed first.

**Interviewer**: Okay, did you receive training?

**Interviewee**: No, we did not.

**Interviewer**: If you did not receive training, then how were you able to operate it, or switch it on and off?

**Interviewee**: We only received simple instructions. For example, they told us how to switch it on; like this is what you do when you want to increase the intensity of the fire; and, if you are cooking with a big pot this is what you do.

**Interviewer**: What did they say about cooking with big pots?

**Interviewee**: They showed us the volume control knob and told us to put it on full blast when cooking food in a big part.

**Interviewer**: Oh, okay. Did they tell you anything about maintenance?

**Interviewee**: Not really. They only told us to remove soil when it falls into the pit to prevent the bag from getting damaged. We were then asked to build a brick wall around the digester bag to prevent soil from collapsing into the pit.

**Interviewer**: OK, did you?

**Interviewee**: No, we didn`t have the resources.

**Interviewer**: Okay, what else?

**Interviewee**: They also told us to be extremely careful with the connection at the top of the bag [gas connector], where the bag and pipes links, because it is very delicate, and that once it broke we would not be able to get fire.

**Interviewer**: How were you supposed to manage that part [gas connector]?

**Interviewee**: When the gas connector was bent, we were required to straighten it up; when the bag was deflated, we had to keep the joint straight; when the bag was full, we had to keep it straight as well me.

**Interviewer**: How long did so-called training take? And, how many of you were involved?

**Interviewee**: We were three: wife, my son and me. And they told us all this when they were installing it.

**Interviewer**: So it was three of you, just like you are now – and they simply told you how to switch it on; that you would need to take care of your joint at the top of the bag; and that you should ensure that soil did not fall into the pit…

**Interviewee**: Yeah

**Interviewer**: What else apart from that?

**Interviewee**: That was all

**Interviewer**: Did you feel you were prepared to operate it?

**Interviewee**: Since it was our first time to see and use it, we simply accepted and acknowledged what they told us. We did not feel or know if the information was wrong or inadequate - We trusted them. They were like our teachers – and you do not doubt or question your teacher - and that is why when it failed, we reached out to them, as our teachers, to help us solve the problem.

**Interviewer**: So, you basically trusted them and felt the information you received okay and that you could operate it?

**Interviewee** Yeah

**Interviewer**: Why did you build the digester here? I mean, when they came you could have just said thank you, but I don't need it. Why did you accept the digester?

**Interviewee**: Yeah, but we were convinced by their explanation in regards to meeting our cooking needs. So, we thought that once we had it, we would no longer search for firewood to cook.

**Interviewer**: Where do you get wood?

**Interviewee**: From those mountains [points to mountains from far distant]

**Interviewer**: Eh, that is far

**Interviewee**: Yeah, we go there in the morning around 6 AM and we return around 12 or 2 PM.

**Interviewer**: Do you buy for firewood there? Or, you just get it free?

**Interviewee**: We do not buy.

**Interviewer**: So, before the digester came you were just using firewood.

**Interviewee**: Yeah, we go to the mountains to source firewood. When we have firewood, we don’t go there - Once we have run out of firewood, we go there to find firewood. So, yeah, the mountain is our only source of firewood.

**Interviewer**: Okay, how much firewood do you get from the mountains? Or, how often do you go there?

**Interviewee**: We do get a lot of firewood from the mountains, usually enough for a week. It’s far but we still go there; when we go there, we stop and rest for three or four times - we even get sick upon returning.

**Interviewer**: You told me that one of the reasons they chose you to be a beneficiary is because you had cows and that sounds like a valid reason; it does not make sense giving a digester to a person who does not have cows. What were you doing with cow manure before the digester?

**Interviewee**: Yeah, we used to use it as fertilizer; we keep cow manure and use it later as fertilizer in our farms.

**Interviewer**: I have not seen any cow around. Do you still have cows?

**Interviewee:** Yeah, we have two now.

**Interviewer**: What happened to the rest?

**Interviewee** We sold them.

**Interviewer**: Do you differentiate food cooked on biogas from food cooked on firewood?

**Interviewee**: Yeah, it does

**Interviewer**: Oh, it does, how?

**Interviewee**: The food cooked on firewood taste like enough heat did not go through it when you compare it to food cooked on biogas. Thus, food cooked on biogas feels like it`s sufficiently cooked because enough heat goes into the food. In addition, pots tend to get black with soot when food is cooked on firewood. But, it stays clean after cooking on biogas.

**Interviewer**: Okay, the way I understand the biogas, before you start using it, you need to feed it with huge amount of manure and water, then you proceed feeding it continuously, but with less feedstock. How much feedstock did you start with?

**Interviewee**: It was a lot of cow manure; we started with 3 bags of cow manure, and I remember clearly, we added 10 buckets (20 liters) of water…. We filled it with one drum of water (200 liters). Then, we were told to feed it with three buckets (20 liters) of manure again, if it did not get inflated. So, after we saw that the bag was not getting inflated, we added 3 buckets. And as we were told the first time, we covered the outlet and inlet. I have also remembered that they told us that the digester flushes out digestate when it is full and they advised to use it as fertilizer.

**Interviewer**: Did you get the digestate?

**Interviewee**: It only happened once. One day, it got full with pressure and flushed out the digestate. But, it was not as much, and it was not as much as they said it produces, so we did collect and use it as manure – it only flushed out once after it filled with pressure.

**Interviewer**: How was the outlet like?

**Interviewee**: We dug a small round hole for collection of digestate at the outlet pipe. And, we used to wrap and cover both the outlet and inlet pipe with a plastic sheet. So, when it flashed out digestate it took out the plastic sheet at the outlet.

**Interviewer**: Why did you cover the inlet and outlet pipe?

**Interviewee**: We used to cover it to enable gas to build up in the digester bag.

**Interviewer**: Did you ever use the digestate?

**Interviewee**: No, because it only flushed out once.

**Interviewer**: Did you get liquid things at the outlet?

**Interviewee**: No, we never did.

**Interviewer**: So you started it up with 3 bags of manure and the 200 liters of water.

**Interviewee**: Yeah, three bags of 50 kgs.

**Interviewer**: Where did you get the water and manure?

**Interviewee**: We got fresh manure from people’s cow houses around village and some manure we got from our cow house; and after gathering all the manure, we mixed the manure with water in a bucket.

**Interviewer**: How did you prepare the feedstock?

**Interviewee**: We mixed the whole thing in a bucket using our own hands.

**Interviewer**: Iih, why didn’t you use a wooden stir, a stick or something?

**Interviewee**: They told us not to use that because it does not break the manure as required – and to remove trash from feedstock, you need hands as well (Laughs heavily). Some people said they would not do that – Imagine going to be people’s houses to collect fresh cow manure - it was gross – and they made it perfect clear that we should use manure that had not stayed for more than a day. But, for the first digester we used dry manure, so that was better (Laughs)

**Interviewer**: (laughs) that was gross. So, with the first digester, did you feed the same three bags of manure and water to start it new up?

**Interviewee**: No, it was a small bag.

**Interviewer**: How many bags?

**Interviewee**: 2 buckets.

**Interviewer**: Water?

**Interviewee**: Maybe 5 buckets (20 liters)

**Interviewer**: How long did it take to start up?

**Interviewee**: That one never worked. The digester did not show anything. It was only producing a hissing sound, and when we tried to light it up with matchstick, it was only giving a very quick but low sparkling or snapping sound.

**Interviewer**: Were the installers there?

**Interviewee**: Yeah, they were there, and for three days, it was giving a very low snapping sound – but after three days, it stopped completely. We went to the agriculture office to report, but they never came - the problem was that when we reported a problem, they never showed up - and it is not as if we were calling them on the phone, but we used to go there in person to meeting [name redacted] and he never came. The installers even gave us their cell numbers, but they said we should report to [name redacted] to come and fix.

**Interviewer**: Oh (laughs)

**Interviewee**: (laughs) you see, he never showed up.

**Interviewer**: What was he saying you go there?

**Interviewee**: He was just saying that he would find time to come but he never did.

**Interviewer**: Okay, so next time you saw him was when he came to change in the bags?

**Interviewee**: Yeah, he came to explain that he was coming with me new digesters. After that, he came to install it, but after since then he has never showed - [name redacted] has never come since then. When we reported to him, he never came.

**Interviewer**: Oh, okay. Talking of the second digester, you said you used 3 bags of fresh cow manure and 200 liters of water. How long did it take to start up?

**Interviewee**: It took time to start up the as the sun was not shining as it is now then. But, after two weeks, the bag got full. Then, they came with a stove and pipes, connected everything together, and it worked. As for our friends, their digester bags got full, but when they tried to start the gas, they did not produce gas. As for ours, once it was installed, it produced very strong fire.

**Interviewer**: How long did it take to stop?

**Interviewee**: We used it for a year - close to a year. And, when it stopped we reported to [name redacted].

**Interviewer**: How much gas did it produce? Or, how much cooking time did you get?

**Interviewee**: We were able to cook nsima and beans and even boil water (2 hours).

**Interviewer**: Without any problems?

**Interviewee**: Yeah

**Interviewer**: For almost year?

**Interviewee**: Yeah

**Interviewer**: How often were you feeding it?

**Interviewee**: They advised us to feed it daily. So, every morning we used to mix cow manure and water, and feed it in the bag – Everyday. However, we were feeding it according to the cow dung we had – 2 buckets every day

**Interviewer**: Usually, you were feeding it with 2 buckets. Still, it was dependent on the cow manure you had collected on a particular day; it was not as if you were feeding it a certain amount of manure every day. It was not as if you were feeding it with two buckets of manure. Take me flew that one?

**Interviewee**: It was mostly two buckets; sometimes, just a bucket. But, they told not to miss a day. So, when we fed in the morning, we were able to cook around this time [11 AM] without issues.

**Interviewer**: Where were you getting feedstock? How did you manage to fitted?

**Interviewee**: For this one we were able to use cow manure from our cow house. But for the first feedstock, we had to ask other people because we needed a lot once. In addition, we even hired people to help us draw water during the first feed.

**Interviewer**: Where did you get the water to start up?

**Interviewee**: I do not know if we used water from the well or borehole – But, I believe it was water from a borehole; and they said we shouldn’t use salty waters.

**Interviewer**: Why?

**Interviewee**: Because it damages the bag.

**Interviewer**: Why didn’t you use the public tap behind the house?

**Interviewee**: It was not installed at that time. It has only been planted this year.

**Interviewer**: Oh, where is the borehole?

**Interviewee**: It there (points)

**Interviewer**: That was like 400 meters. How did you use the gas? Was it only for cooking?

**Interviewee**: Yeah, it was only for cooking

**Interviewer**: You didn’t use it for lighting?

**Interviewee**: No.

**Interviewer**: Did they explain that is possible to use biogas for lighting?

**Interviewee**: Yeah, they explained that it could be used for lighting

**Interviewer**: Why didn’t you ask you for that?

**Interviewee**: They explained that if it worked, they were going to install lights. And, that’s how we knew that biogas can also be used for lighting. So, we expect them to come one day so that we could use it for lighting; so we waited and waited but they never came.

**Interviewer**: What were the operation requirements? Did you only require water and cow dung?

**Interviewee**: They did not talk about pig manure. They only talked about chicken and goat manure, and they said we only needed to break the manure thoroughly. In addition, they advised us to make sure that there was not trash in the feedstock to prevent blockages and damages.

**Interviewer**: Who was responsible for feeding?

**Interviewee**: Only me

**Interviewer**: Father, you were not helping her? (Laugh) Why?

**Interviewee**: (Laughs) she cooks, so it was one.

**Interviewer**: Okay, how did you feel about feeding it? Was it not gross or tough?

**Interviewee**: Yeah, we did not feel bad or gross about it; the digester was here to help us with cooking. So we had to feed it, and we couldn’t have done otherwise.

**Interviewer**: What were the maintenance requirements?

**Interviewee**: We were not told about maintenance. Maybe, if they had come when we reported, they could have told us in how to maintain some of the issues. They only told us how to switch it on, and how to take care of it as I have explained.

**Interviewer**: Like trash should not be in feedstock because it blocks with the digester and not use salty water…

**Interviewee**: Yeah, yeah

**Interviewer**: If it broke down, what was supposed to happen?

**Interviewee**: They told us to inform [name redacted], and then [name redacted] would do inform them.

**Interviewer**: Okay, did it meet your needs?

**Interviewee**: Yeah it was not bad and we were happy with it. People used to come here to admire it. And, most of them were saying if it was going to last for a year or so. They were going to adopt the technology in their homes.

**Interviewer**: You said it wasn’t bad, which makes me think you were not fully satisfied with it

**Interviewee**: (laughs) at first it used to meet all needs, but after some time it started misbehaving.

**Interviewer**: At first it was working, were you using firewood for cooking?

**Interviewee**: No, we were not.

**Interviewer**: Zero?

**Interviewee**: Yeah (Laughs)

**Interviewer**: She’s laughing – is she being truthful?

**Interviewee**: (Laughs) at first we had no issues, But after some time it was not as effective; you could leave it working, but after going for a very few minutes you would find it off. So, it was like we were starting cooking on biogas, and finished cooking on firewood.

**Interviewer**: How long did it take to start having these issues?

**Interviewee**: It took a fair amount of time; it took some time. It worked for seven months and we started facing the issues maybe in the fifth or sixth month.

**Interviewer**: OK, you have talked about various problems. I mean, we have discussed many issues. Specifically, what were the challenges?

**Interviewee**: As I have said, we worked hard to feed it, and you have understood that we did put a lot of effort and commitment on this. But, I feel like we didn’t get its full value, as it was not durable enough; it was not stable and reliable – it’s not dependable. We did put a lot of effort on it, but it did not last long enough.

**Interviewer**: Then main issue is that it started producing little gas after 5 - 7 months. How did this problem manifest? What did you see apart from the fact it was producing little gas and eventually stopped?

**Interviewee**: The bag was deflating fast, and was only inflating when there was too much sun light; without the sun, it was deflating. Thus, even when the bag was full, we were not using it for a long time as at the beginning. At first when it was inflated, we could use it even during the evening because it was containing a lot of gas.

**Interviewer**: Was the bag punctured?

**Interviewee**: It looked as if there was a puncture underneath at the connection.

**Interviewer**: Where? Not at the gas connector?

**Interviewee**: Yeah! Not at the gas connector.

**Interviewer**: Oh, there was also another connection?

**Interviewee**: Yeah, there was also a connection between the bag and the outlet pipe. There was a leak around that connection, just before here the rubber strips were rolled. It looked like there was a leak because when we were feeding it, we could see water leaking and it was even producing bubbles when gas was escaping from the bag… However, before this we had another leakage too.

**Interviewer**: Uumh, okay what did you do when you saw that gas is leaking?

**Interviewee**: We reported the issue to [name redacted], because at that time the bag was filled, so it was difficult for us to take out the bag from the pit. The bag was heavy that people could to lift it out of the pit. Imagine how much the bag would weigh after being fed with manure daily for 7 months. It was heavy for us to bring it out. We need there skills to take the bag out and fixed that connection.

**Interviewer**: You said you had another leakage before this take me through that one.

**Interviewee**: We also had a gas leakage at the gas connection a month or two prior to this. It happened when the bag was very full that it caused the gas connector to separate. After this, we bought super glue, and then glued the connection and gas never leaked on that part again. However, the real problem was the leakage that happened at the connection between the bag and outlet pipe.

**Interviewer**: How did you figure out it was leaking gas? Moreover, how did you figure to solve the problem?

**Interviewee**: It was producing gas bubbles just like the second issues, and when we checked the gas connection, we saw that a patch had detached from the bag. So, that`s when we bough super glue and glued the patch to the bag.

**Interviewer**: When did this happened?

**Interviewee**: Maybe 3 or 4 months after it was installed.

**Interviewer**: Okay, Have you seen something like this? [Intervention sheet]

**Interviewee**: No.

**Interviewer**: What do you think of this kind of information, and do you think it could have helped you?

**Interviewee**: Of course, it would have helped us see to find the solutions on various issues. In addition, we would not have been reporting everything. We could have been reporting issues after failing to deal with them ourselves first.

**Interviewer**: How would you describe the current state of your digester?

**Interviewee**: It is dead; it malfunctioned and it is now finished.

**Interviewer**: Do you think it can be revamped?

**Interviewee**: You have given us some kind of hope that we may use it again.

**Interviewer**: How?

**Interviewee**: This one cannot work again. It is finished; some of the items are lost, and some of the items are completely damaged, for example, the digester bag.

**Interviewer**: In your opinion what caused it to fail? What went wrong?

**Interviewee**: In my opinion, the problem was initially minor, but the fact is that we reported to them and they did not come to solve the problem, made the problem worse. I also feel it failed because we did not receive training, so when that issue arose we could not solve

**Interviewer**: What do you think, father? What went wrong?

**Interviewee**: It is the same issues. Without the installers, we could have done nothing to solve the problem. Had it been the problem was at gas connection, we could have solved ourselves… So, when it leaked the first time, we reported the issue, but they did not come. Therefore, we took the mother in our own hands; we simply used sand paper to rub the two surfaces and glued them with super glue. And, when the bag got inflated, it did not leak anymore. Nevertheless, the leakage that occurred at the connection between the bag and outlet pipe, was too big for us and that is why it kept on deflating when it got gas, and eventually failed. We tried to report it, but they did not come. One time, I met him just along the main road, he just said he was in going to come but he never did. Then, we just decided to abandon it.

**Interviewer**: Now that is not working, what are you using for cooking? Are you back to using firewood?

**Interviewee**: Yeah

**Interviewer**: Charcoal

**Interviewee**: It is tough to source money for charcoal. However, sometimes when we have money we do by charcoal.

**Interviewer**: How often do you buy charcoal?

**Interviewee**: We do not really use charcoal it is expensive; we rarely use charcoal.

**Interviewer**: OK now that is not working, what do you do with the feedstock?

**Interviewee**: We take the manure to the farm as fertilizer.

**Interviewer**: How many bags of manure do you make from your two cows in a month?

**Interviewee**: We make three bags of dry manure

**Interviewer**: Which crops do you use it on?

**Interviewee**: It is only for the maze.

**Interviewer**: Do you know how much the digester cost?

**Interviewee**: No, they just said it’s expensive.

**Interviewer**: Do you know who paid for it?

**Interviewee**: They said it was a donation from white people; we do not know where the white men are from though. In addition, one of them came too.

**Interviewer**: What was his reaction together with the other installers?

**Interviewee**: We told them about the first digester and they knew you the problem. They said agreed that the first digester was not good and the plastic bag was not up to standard. And, that was why they brought the second digester. So, I talked with them just like we’re talking now; the white man wasn't involved in the conversation. Therefore, we do not know if they told him about the first digester.

**Interviewer**: Did you contribute anything?

**Interviewee**: Nothing

**Interviewer**: How many did you hire, and how much did you pay them?

**Interviewee**: For the first day digester, I did not hire people because the bag was small. But the second digester I had four people which I paid them K8000 for drawing water.

**Interviewer**: Digging?

**Interviewee**: I did the digging. It took me a day or two. Initially I was told to dig a hole, but when they came they said it was not a good one. So, they asked me to dig another one at a different place.

**Interviewer**: (Laughs) what was the problem?

**Interviewee**: (laughs) they said the hole wasn't round.

**Interviewer**: (laughs) how did you feel?

**Interviewee**: It was OK, you know the expectation and excitement of owning something that people do not have, but wish to have. You are willing to go all the way.

**Interviewer**: What special items had to be imported from another country?

**Interviewee**: I think it’s not from Malawi. I have only forgotten but they said it is not from Malawi… They said it is from China - They bought it if from China. I think they said something like that.

**Interviewer**: You said you were covering the outlet and inlet pipes what were you covering it with?

**Interviewee**: There were two pieces of plastic made of the same material as the digester bag. We just put them on top of the pipes and wrap with rubber strips in order to allow the digester to produce gas.

**Interviewer**: You said you do not buy firewood. Do you think you saved money the time it worked in any way?

**Interviewee**: No, since we do not buy firewood.

**Interviewer**: What was the biggest difference in your life the time it worked?

**Interviewee**: It was a joy to have; many people were coming to see is the digester; it was as if we had an electric cooker.

**Interviewer**: We are remaining with two questions, what is your opinion of biogas?

**Interviewee**: It’s good, but I have a problem with because it didn't last long. Still, it is a good thing; you do not worry about your pot getting black soot – the pot stays clean. It is easy to use. It’s not tiresome to use. It also saves the environment, and if many people start using it, then we are going to save the environment.

**Interviewer**: What can be to make the things last long?

**Interviewee**: We just need a robust a technology and the installers need to be serious and interested in the technology itself. The installers are crucial to this because they are the ones to go to for maintenance issues. Of course, some problems people can solve on their own, but some problems that need the installers themselves. Therefore, when a technology like this is introduced, they need to be available to provide necessary support.

**Interviewer**: What is the future of biogas in Malawi? Do you think it is manageable?

**Interviewee**: Yeah, it is possible to have people to manage – very much.

**Interviewer**: I will put it to you, the project installers gave you not one but two digesters and none of them are working now? Do you think you deserve to say it is manageable?

**Interviewee**: There was nothing we could have done to solve the problem. You have to analyze carefully; you have to think about who is to blame. The blame is on the project implementers. It has been two years now, but they come since the time the departed this place. When you give something to people, you need to follow up; and when you receive a complaint, you suppose act accordingly. It`s surprising that they didn’t follow up; they were suppose to come back – we even fail to understand why they didn’t come.

**Interviewer**: Why did they project implementers did not come? What do you think?

**Interviewee**: I cannot think of a reason why they didn’t come; I don’t understand even today why they did follow up.

**Interviewer**: If you have designed your own waste or energy intervention, what would you have chosen instead?

**Interviewee**: I hear people talking using solar panels for cooking and lighting. Apart from that, I do not have any other option.

**Interviewer**: Why solar panels?

**Interviewee**: Because it can be used as electricity.

**Interviewer**: Then people should just bring electricity, not solar

**Interviewee**: (laughs) no.

**Interviewer**: Do you have electric lines here?

**Interviewee**: We do not. What you saw are transmission lines.

**Interviewer**: Okay

**Interviewee**: We can also still want biogas, but we need directly supported from project implementers. Or, even phone conversations can work; we can just be telling them our issues and get advice from them. Some of us have skills so I am sure we can be fixing the issues with just advice from a phone call. But, we can do this with support from project implementer. I believe if we can be handling issues on our own with advice from them, we can be making the problems even worse as we do not fully understand it. So, we don’t need their physical presence, we just need communication.

**Interviewer**: Last question, in the beginning we said you think you got this because you have skills a different people different places and skill. Now, you are telling me the same, only that this time you think it could have helped you to maintain and save it. What skills do you have?

**Interviewee**: I have a lot of talent and skills – A lot.

**Interviewer**: What skills?

**Interviewee**: I fix motorcycles, maize mills.

**Interviewer**: Oh, that is impressive

**Interviewee**: Yeah, I am a mechanic. I can fix diesel powered maize meals.

**Interviewer**: Where did you learn this?

**Interviewee**: I learnt this from my brother who stays in Chamtulo.

**Interviewer**: Then if they could have trained you, I believe you would have managed it. I mean, If you are able to fix a diesel engine, this could have been easy peasy for you.

**Interviewee**: Yeah

**Interviewer**: Let us just say they were not serious. That`s the end of our interview. Thanks for interview.

**Interviewee**: You are most welcome.