**BIOGAS ASSESSMENT PROJECT**

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**Interviewer**: Where did the digester originate from?

**Interviewee**: It came from ministry of energy.

**Interviewer**: Okay, okay. Who designed it?

**Interviewee**: I think it’s the same people from Ministry of Energy. But, I’m not quite sure about that.

**Interviewer**: Who funded it?

**Interviewee**: It was funded by UNDP.

**Interviewer**: What was your role as Nankumba EPA (Extension Planning Area)?

**Interviewee**: As an office, we were trained as change agents to take the initiative to the community. So our role wasto make the people appreciate and adopt biogas technology. Around that time, a number of technologies were discussed, and promoted that time. The notable ones, the one that uses animal dung, but we also learned in theory about digester that use pit latrines. We were told this type of digester was installed at Mangochi prison. But at the end of the day, they implemented digesters that use cow manure as feedstock.

**Interviewer**: I think yesterday, I was there. I saw that it. Tell me about demand; did you manage to create demand as expected?

**Interviewee**: Aah, after seeing one beneficiary using it for two or three days, I can say there was interest from the people to own digesters. People thought that these things were admirable because it was making use of things they normally throw away for cooking. So there was interest from the people to have this type of technology in their homes, but its efficiency is what put people off.

**Interviewer**: What do you mean efficiency?

**Interviewee**: Like people saw that it didn’t work in other people’s houses; like it wasn’t producing gas as they would have liked.

**Interviewer**: How were you selected as a beneficiary?

**Interviewee**: It’s because we are responsible for overseeing energy and agriculture activities in the community, so they thought it was a good thing promote it while we had as well.

**Interviewer**: Apart from that, is there anything else you think why you were selected as a beneficiary?

**Interviewee**: The other important thing was that we had the potential to run it. First, we had and we still have a cow house within. Secondly, all of our stuff which where there around that time were trained in biogas. As a result, it’s operation and maintenance was easy because most of the people had the technical know how of what it all was about.

**Interviewer**: How many cows did you have the time?

**Interviewee**: By then we had nine cows.

**Interviewer**: I can only see one (laughs)

**Interviewee**: (Laughs) they have gone for grazing.

**Interviewer**: So when the installers and the people from ministry of energy came, what did they tell you to expect from this?

**Interviewer**: Our biggest expectation was concentrated on the end result. We expected that if the digesters worked, then we would protect and maintain trees within the community, which are being cut carelessly to meet energy needs. So our vision was to make people usethis type of renewable source of energy, rather than cut down trees. And you know it takes a very long time for a tree to regenerate, so trees are special and must be taken care of whatever the cost. They also told us that the technology is kind of sustainable because people and even cows always produce manure, so it will always be around. So, we anticipated people to use digestate for purposes of fertilizer. Therefore, the technology was expected to help people in cooking as well farming by simply taking the digestate to their farms. Thus, you can see that we had high expectations,

**Interviewer**: What was UNDP’s expectation? I imagine they had the same vision.

**Interviewee**: Yeah, I think to them it was about saving the environment.

**Interviewer**: What kind of training did you receive?

**Interviewee**: Of course, we had training as extension workers. I think 75% of extension workers were trained. But, as for the beneficiaries, I don’t think or remember them receiving any training. If they received, I don’t think I participated in the training.

**Interviewer**: Tell me about the training itself? What was it about? Like how many people were there? What did you do? What did they say and all that?

**Interviewee**: eeh, the training itself was participated by agriculture extension workers together with other stakeholders such as community development assistants (CDAs), Health surveillance assistants, and if I’m not mistaken, teachers were there as well. The training was conducted here at Nankumba EPA. We had people from Mbwadzulu EPA who came to take part in the training. The training itself took a week, 5 days. The training was both theory and practical. During the training, we also learned about solar installation, and at the end of the training, we installed one solar panel within the community.

**Interviewer**: Is the solar system working?

**Interviewee**: No.

**Interviewer**: Why? What happened?

**Interviewer**: You know it’s a challenge to use and maintain development aid things in Africa. There were some disagreements within the school management committee. Some members wanted to use the solar system for charging phones to generate revenue. Some did not want that. So, when the solar system battery failed, they failed to replace it. Of course, schools get funds from the government but there is no provision for procuring of electrical services or products and the like. So at the end of day, it failed. I was part of the group, and I was following up everything that was happening regarding the solar system, but then it started get to my nerve so I just stopped following the whole thing.

**Interviewee**: In your opinion, why does development aid fail in Malawi or Africa? For example, we are now here talking about two failures; one is regarding the solar system and the other concerning biogas digesters, why does it fail?

**Interviewer**: Some work, some don't depending on how it was introduced or initiated. If you give a person something that he did not want or envision to have, it's hard for that person to maintain that thing. Whereas, if you give a person something that he or she wants, chances are high that that person is going to maintain that thing. I mean, who wants something, must know what and how to handle the thing. So, there is always a problem with top to down approaches, because it ends up giving beneficiaries things they didn’t imagine having. For example, if you can give me a car today, I’m sure I would crush in an accident today, because it’s not something I want in my heart. But, if I want a car and work towards that goal, I would work hard to take care of it. Thus, if the heart wants something and gets it, you are obliged to take good care of it because you think of the struggle that was involved.

**Interviewer**: When it`s your car, when you see bump, you avoid it (laughs)

**Interviewee**: Yeah, when you see a bump you avoid it. You even wish to coming out of the car to flatten the bump (laughs)

**Interviewer**: (Right) why did you choose to have this digester here?

**Interviewee**: First, we did consider the movement of waters. As you can see, this is a high ground, so it’s easy for water to travel, and to avoid water stagnation. Secondly, we considered the movement of the sun in this area. Of course, now it’s cool because of the shadow, but around 2 to 3 PM, the sun is on that side, so there's plenty of sunlight here. Thirdly, we installed it here for security purposes. Around here, we have full time security personnel who guard the offices. As you can see also, stuff houses are in the proximity, so was hard for someone to steal the digester because people always looking here. So, that’s why it was installed at this particular place.

**Interviewer**: How did you use the gas?

**Interviewee**: It’s main purpose was for cooking... This place being a center of different functions, for example, sometimes we do have cooking demonstrations with farmer. So, we thought it wise that it was going to be easy to tell people that it's possible to cook using cow manure while they were actually seeing the whole thing. In this way, it’s easier to create interest in people, and it's an effective way of teaching people regarding biogas. You know there are some things that are different to understand. For example, you cannot just tell a person that it’s possible to cook using cow manure; you need the person to see what you are talking about. So, this being a center of the community, which hosts a lot of people through meetings, it was only wise and easy to sell the idea of biogas to them.

**Interviewer**: So how did you use the gas? Was it strictly for demonstration purposes as you have mentioned? Or, you were also using it for making tea in your office and alike?

**Interviewee**: No, it was made for cooking demonstrations and alike just like I mentioned. Also, there are certain times we receive visitors and you want to cook things fast and this was the solution.

**Interviewer**: What times in particular talking? And, which visitors?

**Interviewee**: I`m think of office meetings… I remember one time; ACB (Anti-Corruption Bureau) came here to sensitize people on corruption. So, people do come here to do for various functions and they even cook during those functions. So, they need energy for cooking. So, instead of them using firewood, it would have been easy to tell them about biogas after using it.

**Interviewer**: What do people use now for cooking during cooking demonstrations and other meetings?

**Interviewee**: It’s mostly firewood and charcoal.

**Interviewer**: Okay, do they buy firewood or charcoal?

**Interviewee**: People do bring firewood and charcoal. Sometimes, they do buy. But, it all depends on the size of the function.

**Interviewer**: How much feedstock did you use to start it up?

**Interviewee**: Mmh, I have forgotten; 2016 is way far back. So, if I answer that I may give you wrong information.

**Interviewer**: (laughs) yeah, it’s been long. Did you ever use it for cooking i.e. for any cooking demonstration alike?

**Interviewer**: No, our digester never worked even once. I think the digester was installed for trial and error purposes because of the way it was made. The digester bag was simply made of ordinary plastic paper and two pipes, which were connected on either side acting as an outlet and inlet. Also, the pipes were made of ordinary PVC pipes, which were joined to the plastic bags by a rubber. The basic idea was to feed the bag with feedstock to produce fire for cooking. We were told then that, in the bags, new feedstock was going to push out old feedstock, as it is heavier. And whatever was to come out was fertilizer. Unfortunately, the first digester was made of simple and basic material and didn’t work. After some time, that's when they brought new digesters made of more durable plastic digesters bags. The digesters had also an outlet and inlet like the first ones. Nonetheless, the second digesters were only given to the people. Some worked; some didn’t. But, as for us, we were not given the second digesters.

**Interviewer**: Why weren’t you given the second digesters?

**Interviewee**: I would be a liar to say I know reason why we were not given the second digesters.

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

**Interviewee**: Cow dung.

**Interviewer**: Did you ever feed it?

**Interviewee**: Yeah

**Interviewer**: For how long, and in what quantities?

**Interviewee**: We fed it when we were learning about biogas. We also fed it another time after a certain period.

**Interviewer**: Uumh.

**Interviewee**: Because after the training, they came again and it was around that time that we fed again. But, it never worked out.

**Interviewer**: How long after the training?

**Interviewee**: Maybe a week or two.

**Interviewer**: How much did you feed it?

**Interviewee**: Mmh, I have forgotten as well.

**Interviewer**: Okay, who was responsible for feeding it? Was it you or you employed some people?

**Interviewee**: Everybody who received training was responsible for feeding it.

**Interviewer**: How was it like? Didn’t people complain about it?

**Interviewee**: No, they spent money on us in terms of training allowances, so it was time for us to pay back (laughs)

**Interviewer**: (laughs) yeah, yeah, I see. What were the maintenance requirements?

**Interviewee**: There were no major issues pertaining to maintenance. We were simply told to take good care of the digester bags which itself was easy because the plastic digester bags was made of two layers of plastic. In regards to repairing and fixing it, I don’t remember them telling us who were responsible or anything like that. If they did, I might have missed it. This is how they constructed it [takes phone to show pictures of the digester]; you can see it was just a bag joined with two pipes that were tied to it.

**Interviewer**: I think I need these pictures. Please send me on when you are able

**Interviewee**: Okay [then stop to answer a phone call]

**Interviewer**: Okay, what challenges did you encounter?

**Interviewee**: The concept of the new technology of biogas was good. But, the fact that it did not work was disheartening; the idea of cooking without firewood was a good idea, but the fact that we had to sweat and put in effort without gaining anything out of it was horrible - it was a major drawback. Also, the beneficiaries expected us to provide information and support to them in all issues regarding operation and maintenance because they saw that we had received training. But in truth, we were blank. We didn’t have knowledge and information to pass to them. We did not know what to tell them or what they supposed to doing case of a break down. So, that was also a major challenge. Of course, we were trained and they reported the problems to us; but there was nothing we could have done to support them. And, it was funny that we had more challenges with our digesters than the beneficiaries themselves; so that was a major problem. Eventually, people realized that it was not viable, so some removed the materials, and some used the materials for other purposes like roofing. So that's how it was. Another thing is that the project implementers didn’t follow up after installing the digesters. Of course, they came once and never came again. They only came this other time with equipment for making briquettes. They told us that they were going to give our office the equipment, but have not brought it and it’s been years now; it was chaos, confusion. The same people come again, and they said they were coming with a project of MAREP [Malawi Rural Electrification Programme]… So, the major challenge was lack of follow up. Secondly, there was knowledge gap. It was big and I shouldn’t make try to downplay it. There was a huge, huge knowledge gap among the beneficiaries and extension worker who were trained. I also feel there was a deficit in the approach itself. I think there was a problem with multi-sector approach that they used. I’m saying this because some of the people who were part of the training did not fully comprehend the whole concept of biogas, and cared less because they felt that it was mainly the responsibility of the agriculture extension workers. So, they pulled out and left the whole thing to one person [to me].

**Interviewer**: Why do you think this project failed? I mean, how did UNDP implement such a big project, and eventually fail? I’m sure the follow-ups must have been in the scope of the project. What happened?

**Interviewee**: It’s possible to fail.This was a technical project. Projects that are technical in nature are difficult to implement. The problem wasn’t UNDP. There are so many projects that have failed but they are never reported, so you think things are working. But, in truth we just hear about the projects are successful and working.

**Interviewer**: You said that this project was try and error. Why do you think this biogas project was in quote “trial and error”?

**Interviewee**: I cannot explicitly say so, because I don’t have the evidence to back it up. But, I can fully say this project did not work – it failed. Even then, regardless if it was trial and error, they should have produced a report with proper recommendations based on the findings. With this project, there was no report and there was no follow up. They did not come to explain the whole thing to us. I remember when they came they said similar projects were being implemented in districts like Nkhatabay Salima, Machinga and Mangochi. I think they were implementing this project in lakeshore areas where the temperature is high because all the districts I have mentioned are hot places. So, if it did not work here in Mangochi, do you expect it to work in Salima? What about Nkhatabay? What happened in those areas? Did they fail as we failed? I think it would have been better if they came to explain how the digesters in those areas worked. Then, we could have a picture of this innovation. But, nothing came up; even a mere report of how things were going or how things transpired here.

**Interviewer**: So as an office, did you reach out do UNDP, or installers, or the Ministry of energy itself?

**Interviewer**: We don’t know the donor on the communication level. Secondly, I don't know whether it was a project or a programme. They didn't tell us much about that. I’m sure if it was a project then things would have been better, because we could have had a focal person, a coordinator. What I know is the people from Ministry of energy were running the program and are the ones who were coming. They people were just coming to do their thing and then go. It was like that all the times. But as far as I’m concerned, I cannot explicitly say if it was a project or not. Or, if it was a project or programme, who was funding it, and how much money was involved. If I say I know all that then I would be a liar because I only heard that but it wasn’t official communication.

**Interviewer**: Did you reach out to the people from the ministry that you failed?

**Interviewer**: They were coming so they knew that they had failed.

**Interviewer**: Calling a shade a spade, why do you think caused this digester and the whole project to fail.

**Interviewer**: It’s hard for me to say why this thing failed. I would be a liar to say I know why. But one major problem was that, we learnt so many things within a very short time. Like I said we had a five-day training session, but within that time frame, we learnt about biogas, solar installation, and all that. I think the training about biogas itself needed ample time to allow people to become conversant with the technology especially its maintenance. Learning about maintenance of biogas is not easy thing, and it’s very involving. It needs time. The installers should have concentrated more on maintenance. So, I feel they just installed the digester for the sake of it; they made it too simple; they just wanted to fulfill their obligation of installing the digester rather than making it work. overall, I can’t point out the specific causes for its failure; it`s just complicated.

**Interviewee**: How do you manage feedstock now?

**Interviewer**: Mostly, we use cow manure as fertilizer in our plots. Some of the manure is also picked by people for farming purposes.

**Interviewer**: Do you sell?

**Interviewee**: No, I don’t.

**Interviewer**: So, if someone wants to get manure from your office, what’s the procedure?

**Interviewee**: We feel like it’s a community thing. So they just need to come and ask for it. If we don't need it, we let them have it.

**Interviewer**: We are going towards the end of the interview. How much did the reactor cost?

**Interviewee**: I don’t know. We just saw them bringing the pipes, the bags and all the equipment. So, this is the team, which brought the things [takes phone]. The person in blue is [name redacted] from Ministry of Energy, I remember him.

**Interviewer**: Did you or your organization anything in kind?

**Interviewee**: No, not even a glass of water! (Laughs)

**Interviewer**: (Laughs) how much labour was involved?

**Interviewee**: There was a lot of labour. Let me see how many people are there in this picture. More than eight people. We were many!

**Interviewer**: How many came from the Installation company or ministry? And how many were you from agricultural office?

**Interviewee**: I think we were five, if not six people from the office. Two or three people came from the ministry.

**Interviewer**: Who did the digging work?

**Interviewee**: It was our ground labourer. He was one; the hole was shallow.

**Interviewer**: Was there any masonry work?

**Interviewee**: Oh no… I think yeah. The hole was lined with a brick wall.

**Interviewer**: Who did that?

**Interviewee**: I can’t remember.

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

**Interviewer**: Yeah, looks like all the things are from Malawi. Looking at this plastic bag (points to the picture on the phone). It looks like from it’s from Malawi. Maybe, I don’t know. Maybe, they got that from another country, I don’tknow.

**Interviewee**: We are remaining with two questions. What is your opinion of biogas?

**Interviewer**: In general, I can say it’s good. It’s renewable energy. It’s user friendly. It produces strong fire and it’s fast; and, it's smoke free.

**Interviewee**: Our study is basically looking at biogas failures, and I must say the failures are enormous. If I can bring the question to you, why do you think biogas digesters are failing in Malawi?

**Interviewer**: Why? Maybe because it works well in hot weather so it’s activities are affected by weather by design – Maybe that's why it's failing. It could also be the people we think are expert are not necessarily experts. They too need and have a lot to learn about biogas. Or, maybe because people are just doing it for academy research, so once they defending their papers or dissertation they just let the whole thing go - so, that could be another issue - People are just doing it for the sake of school. Once they get a paper, or after getting a master’s in renewable energy, then that’s the end of it. So, that’s another key issue. People are more eager and focused on getting a paper rather than making a change or on the technology itself to get tangible results on the ground. You know these days everyone can defend a project paper or dissertation, provided there is money. So we are failing because people are more focused on producing a paper instead of making this technology work and helping the people on the ground. So, I think that’s the main issue. Personally, I do believe it’s possible to implement biogas technology. It seems feasible, tangible and it can work… Maybe, we are doing things too fast in terms of doing things to implement these things to impress others. But, the main issue is that people are doing it to get papers, and not to help people. If you look at our project, you may even be surprised to find out that maybe some student got funding to UNDP to work on biogas, so after getting the his masters it is over.

**Interviewer**: (laughs) okay, if you would have designed your waste or energy intervention, what could you have choice instead of biogas?

**Interviewee**: Including solar?

**Interviewer**: Yeah, even solar!

**Interviewee**: It’s the same thing, and nothing else! But, it just needs proper input and output. As you know, input affects quality of a product or service. So, for this to work, we just need to change or correct our thinking, and the way we use our things. So biogas is good and feasible. This is to the gas people buy from market (LPG gas). So, even for people to accept and start using LPG it took time. So, biogas needs a good research to make it work and sustainable. But if we keep doing things in haste, it can’t work. So, it needs a comprehensive research to make it work better. We can do this….. Imagine, a person in Likuni is making diesel fuel out of papers, so this can also be done…. But, that person needs the government through Ministry of Energy to support him. The government should look into his ideas and provide support when necessary. So, he just needs support from government to make him better. But, the problem with Malawi is it doesn’t appreciate talent. We are always after papers, so if a person doesn’t have papers, it’s impossible to get support from the government - and that's why we're not developing as a country…. People who are educated need to go to that person and learn from him and government need to give him the equipment to realize his dream….. You know paper is everywhere, so if we can manage to get paper and use it for fuel it could be a good thing, and it’s long term. It can also help many people to get jobs. But, the problem is that here in Malawi we don’t supporting one another.

**Interviewer**: Who is this person? I have never heard of him.

**Interviewee**: Really? Are you here in Malawi? People are doing great things here. Serious, there is a person in Lilongwe who is making diesel fuel using plastic paper. He is even challenging people that his product is good and can’t break down a car. But, because we always pull each other down, you will start hearing that it’s against policies and that if he continues he will damage people’s cars. They will even put him in jail if he continues. But, I have heard the South African government is trying to help him; they have brought in some caterpillars to help to clear the land to open his plant. The Malawi government can’t help him because he is from the ghetto. But, if it was some rich kid, you could have heard that the government that is willing to support him.

**Interviewee**: Interesting. I will try to look for the story. Yeah, this is the end of the interview. Thanks for the interview, [name redacted]!

**Interviewer**: Cheers!