CP1 - Interview Charcoal Producer Charcoal Association CAON Otjiwarongo 1-2-2023

All I have to say, we need to look at the smoke which is produced, producing carbonizing charcoal. We are also busy with huge projects now where we introduced, we call it smoke competences. It's a device you put on the kiln and it doesn't matter which killer you use. Old new doesn't work with reports, unfortunately. The good new technology report is supposed to be clean, which is not clean. I promise you we've done these tests. It's usually what you don't see that's poisonous. What you see is not always poisonous. People always say, oh, this is smoke. It's bad, huh? But the smoke you don't see is worse, and it's really. And if you see it, you see this. How can I see this haziness? You know, like when water goes and that's a dangerous problem. We've done a study on reports and everything. We are currently not very keen on reports unless you got the big, big industrial retorts that you'll probably see when you go to calling the Nickies plant and you will go there. Yeah, yeah. And our challenge is in Namibia. Again, people buy the technology. We don't have the experts keep that in mind for all the projects now. People need to start investing beforehand and getting professionals, even if they come to the country for two to three years, to train the people and be handsome, do not train and go away. False flat, false flat. We've seen it. I've been in agricultural training while I was working for Agra for five years. We worked together with the Jaika team from Japan, brilliant people as well. We were in the four hours where we had a farm with 50 farms around it. We called this the demo farm. And we were training the techniques they did it while we were there when we were finished after three years, because that was a three-year. project. They did nothing wrong. And this is what I want to say. We need to follow through that you get locals that are actually that you sign off, tick off. They are experts. We need this in the country. Because people said they wanted to bring this very expensive equipment, I think it was in Sweden or Norway somewhere there here outside of tooronga for activated carbon and all that. And they said, yeah, but they'll sign in via the computer button, guys. One, our cellular network is not that hot now. We have a crisis like every Monday. You couldn't swipe your cards. I've travelled back from the factory. Luckily, we had cash, money. No, there's nothing. We need to keep this in mind. Although this doesn't happen every day. And then I'm not thought to save all the occasions. But in the rainy seasons, it happens more often, like a lesser problem here and we need to actually train people. Under these severe. What do we do? Plan B. Namibia will always need a Plan B. This is why we actually went back to the old technology, good charcoal and said let's take this. Everybody got something from this? No money. The steel price. You know, it's terrible, man. So people use. Their console with the pockets to the device. For you it will work. That old equipment usually lasts for 15 years. A report doesn't last for two or three. Years and God.

And that's millions. You split now. And that is a problem. We've seen it and Andreas, one will tell you probably also horrific stories. Were you there already? Did you see the report system? That they have inside. But they don't use it anymore. They're comps. The maintenance, they have nobody, the spare parts must come from Europe, you know, I don't know away from Europe. They can't afford it. So this this is really the challenge. Whatever you do there was the article the other day from an independent economist to say the hydrogen in Namibia will not work will not work. Then I'll tell you why it can work. No, it can work. It can work.

But Namibia, as a country does not have the money. You cannot afford and this is. I had a long chat with Johannes Lauss from the Jazz as well. Do you want coffee? No, but it is not healthy. There's one coffee missing. Andreas, you want to talk? Ohh, he said. OK, that's.

OK. Two more reading. Two more. So you're getting your coffee as well. Andreas, you're getting freeze it anyway. It's easy. If I've got a brilliant report system.

Because of that system, it's it's like other naturally thinner. Then two years ago. I think it was two years ago. Stopped because I couldn't get spare parts, was too expensive, and then they came to me and I don't know what they do now. Because they're not our members. Who's the team and the one of? The guys he hates. The top US, I don't know. I don't know why. I don't know why but. They do. Topple and they do Choco so. The pictures when the guy came to. Me and said it to him and you understood. And I showed him, you know, these are the next generation kernels which I can, but I don't. Know what I'm doing? Now doing that now using that, yeah, yeah. So what what we've done, let's do what is affordable to the people, it's a social upbringin, we always forget that in Namibia there most people are poor and they're dependent on money from external resource to buy something and the problem is if you put expensive stuff they can't fix it front maintain stats. So I'll say keep it simple. Whatever we do and if we do other things from technology side, we need the experts trained in Namibia and that's what we're doing from Kay on our side now on next week. We have a new advanced method of chocolate production which we bring in between information day. There's an hour on the 24th and then we incorporate that in our training. We train on the facts, so please test results. We have the top of the links. Now we train manager supervisor, the information base and they're massive groups now, but we prefer to go to a farm to train with the equipment, with the types of vegetation that they have in the circumstances that have because the farms are different areas. And that's a better lesson we learned. People think we're going to build the training center. They tried it , in fact, it totally failed and that's why we said we're not going to get involved in the, we do training on the phones. We have people that speak the local languages. We build them up as trainers. And then in their language, they speak explain, we train them. I trained them in that our contract and I just go back and do questions and check. Now I do six months down the line. I do sample assessments and the sample assessments they are usually given the wrong thing and they need to argue off. That's the quickest ever. Look at it. And then I said. But that's wrong. Yes, that's wrong. But that's how you taste and don't give them the right answer, man. It's just something I adopted from Namibia. Tell them the wrong story and they must tell it. That's not right then you know that they have looked. On the charcoal side, not each bush is ideal for charcoal. Don't ask me now the botanical name, but the heel. Now the yellow wood is not good.

It's not good. It's soft, it's very good for biochar because, remember, a big drive for us is biochar as well. We're busy with Belgium. We've seen our first Test Day voucher but what we do, we look at the bush and that's my message. We will have a talk next year. I'm sure the rain will go down again because we will have had three good years that we just have from the fourth years down, down, down. People need to prepare, we teach them, you know, like this size is your bush feet. Those costs? So I'm asking them do they do the training? We just teach them the awareness. We don't teach them how to do that because that's their job now. Then I say this size is biochar and they do we do, we do a lot of training and everything bigger than that is charcoal people go for the big trees, which is the worst quality, worst quality. Because you know, and that's part of our training program. If you take the big piece and small pieces together, the small pieces are actually by the time that other one is covered. So we teach them. It takes a while, it’s very difficult. We still go to farms or the farmers. Growth, but they're putting the big pieces on top. Of it and look at the pamphlet I gave you as a farmer. This is clearly these smaller pieces on top back from thick to small, and that everything carbonizes at the same time. The other rules as well. How we do it. But that's one of the important principles, and they will just go back and a big, big problem in Namibia. That's the problem. Challenge is people from Korea. They introduced the wrong methods on charcoal. And two, because what they did, they are the best workers. They're the best workers now. If you get them to do the right thing, you can't get better workers now. But they because they chop, sorry for my language and a hell of a lot of wood in one day. Three times what Namibians do three times, sometimes even after four times Now. We get good Namibians as well.

But the majority don't want to do that. They don't want to. They want to do the nice things. So there is, that's where the top one is. This for both is something, but the hard work is done. 80% ongoing is in the chocolate industry on the FOX now to train them. It's taken us not two years now after two years slowly they're coming in OK. They've seen the light because they think in their mind a lot of wood will give me a lot of charcoal and they burned for three days. And we stopped that for pollution because we also this year are working with forestry, we're bringing new regulation. You're not allowed to burn during the night if you burn during the night, you must have the smoke extractor or because of the smoke and the danger, the snow fellt fires. We saw this year as the first year in history. That we have known the fires reported due to charcoal in Namibia. Who's supporting your regulations now? All the farms, the Father 6, the machines. Who knows what's now. So this was a big, big plus for money. And then and that's why we leaving the regulation loss, we're just adding to it now for the smoke and what we do have is a terrible method which they call the earth method. Now on the Earth method is a method that is traditional, 2000-3000 years ago, that's when we put the charcoal like that and it came through the ages. Very good charcoal. Very good, but not good for their mind. So we don't support it. The Paris climate change agreement doesn't forbid it, but it's the people need to improve. That's how they do these things it's not good for the environment. OK, it's not as bad as cause and you know those things, but it's in certain areas, especially in Namibia, it's not good for us because they use soil to produce the the charcoal and through that heat the silica.

We've got a lot of silica in our soil because of the heating curve. So the pores are not fine anymore, so we need raise the water just runs away immediately. So and you want more little mixture in your soil with clay and low salt. So the only time as well are the very mixture and in the areas where they use there. So grass will grow because there's a lot of fine chopines lift which go into the soil, look bigger is much better than that. But at least that helps with spill of nitrogen back to the soil, but you damage the soil a little bit. Wouldn't be able in times of drought, nothing will grow there. Now, that's good. Rainy season grows, grass grows it's really good. But so we need to think of that in Namibia, they don't all do the proper correct methods, so the quality is bad, which gives our charcoal a bad name. Internationally, we've just built up a good reputation for amongst the best charcoal in the shops in Europe and all over. It sells itself, and when people use our charcoals, they're not, we're not going to buy anything else now because there's aroma and that's due to the technology we use. If we go to the report technology that's gone, it's gone. Yeah, because the volatiles opened off. Takes aroma away. The Nice taste of it, everything. So we've always said we need to actually have two types of charcoal, normal and report charcoal because report charcoal is brilliant. Charcoal from a carbon point of view. There's more fixed carbon in it now. And but it's lighter and you know the European standards. You know, it's 5 pages, especially in Germany. If there is 480 in it. They rejected. Yeah, there's the tolerance that they give. I think it's five Grade 5 or 10 grams tolerance. Not more than that. And there's a problem why people can't use the same bag for the report. So the report documents will be the bank to fill up exactly 5 kilos, and from a shipping perspective shipping is bad for us.

We sit. I got e-mail yesterday that I want to classify. Charcoal is dangerous. Good enough. If they do that, we can stop it will stop because it's too expensive then? So we've done so much. Both on there. No, to do. We've been bringing in new things for the weathering of charcoal in Namibia, over the last two years, we had three containers that burned, but not on a ship: before it, and that's usually what happens now because people didn't waiver. So we brought in stricter rules and we're getting another rule where we're doing a double certification on the charcoal. We will probably do that in March. We will sit with all the shipping. And playing with them. They have funny things. Like what? They call that thing. Where you put the top hole in your sleeve and you pull out the A and you see does it. But I think it's not. They believe in it, so it's fine. And so it people probably have to do that afterwards. Now it's a slip and you need experts again to do that because you need to pull the air out. They say you can't get all the air out, but at least if the fire should have been contained. So there are things. Because we that's why we hang our wood vinegar. The wood will forever do charcoal in Namibia will sell the wood vinegar, which will get more money for and you'll probably out of the charcoal made briquettes there now.

**Are they less? Flammable or just?**

They're not and they still want to do this. I will explain to you. All the kids are made. You take the vines or the bigger pieces. They are, grind it, then you mix it with water and starch. And for the European market, we have to use starch. You can't use chemicals and manipulate those chemicals. So what's quality? You have very dangerous briquettes that they're selling natural. They're cheaper, 12 smokes pizza, but all walking and mixing them with the water takes them out. All the all the flammable things, and then they are then mixed. It's their pop. With the starch and the water and then it's left to dry in three or sometimes 2 weeks 3 weeks. They can't self combust. It's impossible, no. You need to put literally a fire there. Then they'll burn and they kinda burning yourself.

**And the retort charcoal is it also produced in the fields or is it a bigger somewhere?**

No, we we tried to mobile reports and failed terribly in Namibia because they were too expensive. The problem was with the heat and with the torch you had to contend. Just explain to you the different types normal BBQ charcoal has a maximum temperature of 450, ideal 400 degrees to produce it. Then a biochar must go to 750, cause more volatiles and activated carbon which we use for human use. Medicine. At least 950. That's where the reports coming. They're brilliant for that. You can also use it for on the biochar. But again, they do expensive, so we're introducing the Contiki killings. They work very, very well because you quench it with water. And also count bird count self combust because they quench with water. They allow it to dry. They mix with stuff. You can use it in all sorts of things. The only dangerous one is charcoal. If it does not wear that long. The thing is, we've seen, especially when the rainy season started and people have sand and ash, which is sifted out of the charcoal and a little bit of. Then the rain comes suddenly that starts burning. It's a chemical reaction in the sand and the ash. The sand in the ash is our worst. That's well, if it's sifted. Properly and you've got the bigger pieces. It can't just burn unless it's only a week old and you pack it together and the friction and moisture and that's why it can burn and seal. Just because of it, moisture and. The moisture comes in.

**And what percentage of your Members is FSC certified, just say?**

Can I say this? Let's look at the tonnage that leaves Namibia and maybe let's just talk about our members. Write it down there. Easier because I need to work it back quickly. I'm busy with the report at the moment for last year and I'm seeing it out today still. So I saw in our signs but. We have formula that many people that are not members. There are about 20% that are not members and their direct exports. As well, which we don't see. So we have a formula which we use which is very accurate. When you look at the final figures out of numbers there, 230,000 was exported last year or white? Which is the increase on the previous year 20,000 tons more. So after our 100 and 600 you have the breakdown years ago of this. 160.000 roughly 110,000 was FSC.

The bulk, the bulk is epicene and we saw that change when we started non efficiency was high. It has always been 80% versus 20 percent, 80% for South Africa and the UK markets 20% was Europe, all the other countries this has changed. Not dramatically. This is an UK is known as well predominantly. So we now see to say Africa is about 30% only 30%. And then of this which this thing is missing of this part here it is roughly 20,000 tons that are non FSC. So you can safely say that to be on the safe side. 60% is FSC that goes up. I am doing it on so I need to do the final. Figures and then I will now push it. But my gut feels like last year I can compare it to about 60-40. Yeah, because there's a lot of there's also going to the Arab countries, it's produced as FSC but sold as non FSC. Because remember when you produce this FSC you have two pockets non FSC and FCS. If you don't get buyers, it often happens that soil doesn't notice. So I'm talking strictly produced as you can see, you know, soil is not everything might be a little tired, but it's used produced using efficient practices.

**Why would someone sell an ESP product as a non FSC product?**

Because it's not market. If you can't sell it now you we must remember where we get here to November, December. Traditionally, workers, when we get home than to be pay. It, and they all fall. And then they sell it, they. Just sell it price drops and. People complain they have paid and in the end who suffers. The workers come in and they want to go home for Christmas. It's traditionally December runs people on wine now this year they won't come back. Now, they'll probably come back in February and March. It's a quasi seasonal thing if it's a drought they are here the whole year. Then they just keep on producing. Because of the weather. We always have a period of three months. Usually you cannot, but a lot of people do their harvest because it's ideal time to harvest and let the wood lie because it's cool and also. And then when once it's dry and the roads are fine, they bring it to central points because that you also introduce that you cannot do the governorisation in the field anymore because you have no control. Over what they put in those pots. Big pieces. You don't see a protected species. Because it's it's who goes and inspects all time now. But when they go to the central point. And that's why many farmers, although I hate it, that we brought it in two years ago, people screamed at me at the phone. I said guys just bear with it and. It goes off. The petrol price and the fuel price is going up because now they have to bring everything to that central point. But as it is, you bring it in. You would have had to collect it in any case. Yeah, but then it's already charcoal. So with lots of places. So worth it. So the farmers actually told me now, after two years, actually save money. Because you've got all the controls better quality, they can immediately see more. Charcoal is produced because they can check the whole time because it's one central point, OK. By law, we call it clusters and central, and you can have clusters also in the field, but they have to clear 30 meter around those clusters and needs to be fired. And also, so many farmers have maybe two or three areas on the farm. The points now which we then call classes not same and it works for you when I told them they should start using donkey cards again in Armenia they must. We've done it for years and years. Cost you nothing. Now bring in the wood now, I said charcoal. Now, Andreas, why don't they do it. They all have donkeys on their farm. Yeah, we're lazy. We are lazy. I always say mean it's not lazy we like back, yeah.

**Yeah. And how many members?**

We have just over 1400, but they're not all active. You must understand in charcoal how our system works. You are a member when you pay lease, you report your talents to the office and you pay levies all the where you sell it, they report on their behalf and it happens that people, for all you decide this, you're not doing charcoal, but they still no member database. Two years from the start. We know it's a little bit down now of the 1400 active ones are roughly 800 are active, but when the drug comes spikes again though, and you do not lose your membership. So we do not like and that model worked very well in Namibia. It was to tell somebody you have to pay 200 Namibian dollar every month. Oh, it's too much money that I want to every month. But we put the levy. They pay $12.00 per tonne of charcoal. And that is our membership money and that is fine because the factories they deducted. So it's not something they don't even see that it's off they they just know it's deducted for us and it's and they paid over to us because all the factories do not pay any levies. Because they do the admin for us automatically make this.

**OK. And what would you say are the main challenges?**

If I don't know the numbers, then it's annoying when people call and tell them it ticks and then they don't. Like their voice notes. He's sitting in meeting arguments. They're driving the. Cars on the phone. But we not as bad. Sorry as Cape Town. I saw now in Cape Town. Everybody that walk in. The street just watching the phone, you'll soon see accidents happening. They don't look around. Them in the shopping centres they or I think it's free Wi-Fi, they don't shop, they all sit there just on their phones. I was it. It really stopped me when I saw that. Is it durable to a like thing?

**Not these stores I. You think people are walking around?**

So that there's a ban now on biking and so that was necessary repair as usual. Your feinstone voice. Just or not, the Dutch. Dutch don't send one.

**No, they don't say voice messages. So much.**

Just move to your country, OK?

**What are the main challenges that charcoal produces?**

The main challenges are our shipping containers. Just to give you an overview of what happened the past years, 2019. There weren't so many producers, not, FSC really started on 2016 when we reformed this our association. It was the reform 26 in April. Then it started going and then with the support of seem how we brought them in. We there was projects where we helped them to bring more efficient to the country. It's a project we did together with, for, for them and FC Southern Africa as well. In the book. So even 2019, we didn't have so many Members yet because that was the end of the drought. But as on 2019, it just accelerated because we had enough containers. Then came the first thing COVID came, which did not have impact on us. Whose farmers would still produce, which was seen as essential services and farmers goods we had a week long hiccup in this country and then sorted out. Now going to the Ministry of Trade and we got this, it's for the farmers. Everything was sorted. Then the biggest biggest challenge came when we had unrest in South Africa. And that was 2020. There was on the harvest and Namibia is a small country, all the ships stopped in South Africa. And then if there's space on the ship, they stop in South and Namibia and charcoal is a low commodity. That sometimes will be had at least two or three ships every month. We had every three months on ship was very bad for a period of 3-4 months. So we took a dip but still not below previous years, we still grew1-2%.

Which was amazing. It was just that period because the demand is growing. We couldn't supply enough for the demand because of that bottleneck. So when that story was solved in the Cape Town harbours. The fresh fruit and all that got preference because that had to go to immediately. And once that bottleneck was gone, started and then came China with the containers. Not enough contents to left and he doesn't. So we had. Now you can save nearly three years of bad luck due to shipping. Now it's fine. Containers are freely. We've got a new shipping line. Nurse came. And now I wanted to change this. So the next challenge is now, which we have to address. But as I said, we produced 2:30 to three to 10 before it was just over 200. So it's this year we had a good spike or, last year and a good.

**Spike again, right? Yeah. Good.**

In spite of all these challenges, so people. Really, really made a play. There was a time we had a container that burned in the harbour and the shipping lines stopped. All charcoal and on and on top of all these other nonsense that went on. So we got into the car, we went to office by. We had a meeting with them. Next time we would step in from the Chopper Association with the new process oversee and it was just a month where everything was stopped and they immediately stopped and they supported us. So now we work very closely with them. I would send them stay away from this person and this job is. Not good quality. Any sort of thing. So we talk a lot and we will have a big conference. In March, with the two day conference and we will also address the dangerous goods. So what can we do? How can we overcome this? Where we I have some ideas what we can do? With the double certificate on the weathering process, a problem now to address that and then close it. OK, sorry. You know, maybe if it rains, we'll get excited in Europe.

They hate it. We love it so. In spite of everything, I think we do overcome these challenges. Our other challenge is from government side. Every now and then around November, December and girls are illegal in the country, the illegal and then we go to the police, we go to Ministry of Trade to home. If we start fighting with them again, the problem is again them agents. Who are lazy? They can apply for green card when they cross the border. There's a special deal made with Angola is because we know we are dependent on on the governments. So lastly I started November already sending all all communication. Remember give your worker letter when he goes back to Angola. When he comes back, he goes via three places where they can go to.

It's close to the border. Police kicks your green card. How many have done it 30%? So when they complain, they don't talk to me because now it's going to cost the money. Because now that we need to put them on a taxi to the areas and come back. So because they usually stay for for the for the year there and you know what is so amazing from a social point of view on those and governments are dependent on them. They come when they come. Now they skinny, skinny, skinny, you know they come and they just eat enough to to be healthy. All the other money is safe in that carbonless in that for the families.

Million number will do exactly the same slot, but meaning they don't. Know then when they go back nice and healthy. You know, after after a year when they come back like this. It is sad to see that because in Angola you've got small minority it's very, very rich. 80% of the people are poor, poorer, poorer, in spite of all that, all everything. It's so sad. And these workers? They really want to work. We do get the element of criminals, we do . We do. But then that's that's not meaning. That's really we have a huge criminal element in Namibians. There's so many scams and this is for charcoal farmers that you know what they do. And farmers are they feel sorry when you as a worker come to the farm, you have no shoes, you have nothing. Just your clothes on they will give you a job. And we, but this is now the scale that they have to come to the for more that nothing to eat, nothing farmer feel sorry symposium with they need they buy on account with it and have money or they study. It acts everything overnight will disappear with all that stuff that is for many on that builds up. We sit in the middle prostration during the workers and the fullness, and this is not just in the travel industry. But people understand that when people are hungry, they will steal. Understand it. Now we have to fix revolution. You can't have greatly cut. Let's see. And it is like. That if it really. But I think there are enough opportunities now. We don't have to employ them governments.

But if we don't, then there's no production. Then the other are the positive side is in in the charcoal industry. If you go to the factories. If you go to Macara for example, 90% of the workers are Namibian females.

**Yeah, we yeah, we visited.**

Yeah. Did you see that Macallan? Yeah, yeah, yeah. Only if you. I think the five million. Yeah, that's actually 95 percent 95. Woman and that's some if you go to jumbo, you get about 80%. Yeah. All I need is a position we have started in the charcoal industry also promoting women's a little bit more difficult. But the woman produce better quality, the more responsible.

**It's the same. It's the same everywhere.**

And our new method you have to be at the pot the whole time and in control the heat. That's all you get good quality and not so many fines. So every half an hour you need to. Open the other holes crossover the walk in the field do, I don't know what they do. They come back and. They put food and they scamper, so it's fine. And the quality goes down to this quality. That brings with it other social problems, women and children. Their babies, and not a lot with the charcoal side. So farmers had to do, creshe their farmers. They do that somebody looks after the token, but a public transport. Maybe is bad spaces very expensive.

Something happens to somebody and I need to get them to talk, so they need to go to school. So these are the challenges we set and I say to all the groups that come out, I see so many people that come international to us but not living in needs is more decentralized places of education. When you have tin farms with the opposite tin farms, let's put on one farm school. We used to have it. Another here we used to. And when the new government came in? And closed it. So it's it's a bit which I don't understand. Our education system is going for you if you want good education, you have to go to private school. And that's for the reason. The majority can't afford it. They can't afford it. And that is one thing which was better in the past. That's the only thing. I believe education is the most important thing. If you have a good education, you've got a good country. And we don't have it here. So I do believe the time is now to start that because then at least the next generation will be good, pulled up the country, but there are no signs for that now. And the good children leave the country. Believe all the ministers take children in private schools. They study in UK and many for all over, not here. And it said no. Although we've got a very good university in us both. Good, good institutions, very good. And good standards or schooling systems and good. Unless you're in a private school and that has the impact on everything in the country, from everything, we will not decrease. Unfortunately, we have many students also are jobless now because I don't think there's enough guidance to choose the correct direction you want to study Namibia. Because in a country like this we we evolving. Are we developing countries, some areas are developed of this developing without the world, many aspects in other aspects we first of all and I think you see that and you need to have different things there. We need teachers. Nobody wants to become a teacher. Now, if you don't have good people now, we have people from school. They go to school. And they have this distance thing. Now, how do you teach if you don't have the good background?

**And what other frustrations or challenges do you see with the workers.**

The workers that resistance to change, you need to physique and I think it's not that the ignorant to change. You have to prove to, to change. For example. And that's why my. Team is so good now they show them the first day. This is how we burn it. The second day they do their own thing, and usually the one or two that I want to follow this. That's fine. OK. Do this. So they carry on the old one. The end of the week. And that's not the way. And then you see here you had so much. Heap of wood we had a smaller heap. And I've got more charcoal. Who gets more money? And that is the difficulty and as it training education thing because they do think the bigger pieces they need to go for the big trees, which is for them and they can get I said to the farmers as well, they come with the forestry penalty system. They don't give them fines, they don't have money. So what happens is because they buy on debt and when the job comes, the debt is not clear, I said, rather take that water away. It's a bigger date. Don't hit the burner that they would. They will do it once. Some farmers are doing it now and it doesn't help to find them. Could you, as a former self that you? Know so I help both parties and that's again this, this, this subtle balance in education. How do we train? The people must also remember charcoal 80% on skill. Remember, they don't have formal school, nothing. Some of them can't read or write. We often have interpreters. That must explain that because they have to sign a contract. FSC, so it takes them a whole day to explain to them this. And they stopped. And they sign it, and then when something goes wrong, they going to labour and then label contacts as what is going on situation. Because we we have a few label cases where they come to us as well, although we are a producer association, not a worker one, they have the agricultural units where they need to sign up with. We are will never be a worker association. Then we need double the volume. Of people here, it's impossible.

**And are workers paid per volume that they produce?**

Times they they are different models.

**So do they get the persons?**

I've seen it now that many, many farmers, the workers that come back here on here, they employ them permanently now so they get like a full they treat it as permanent. They get the bonus, you get the leave, they get everything like a normal employee would get, but the majority is still in contract, they get paid per ton ton of food that they produce. It is depending. It can be anything depending on the area between 750 to 1100 per ton of charcoal. And also what what we at our guideline have you seen our guidelines? I'll quickly give you a little booklet fix old ones. We are busy updating those because we lost the already running. Hopefully this year.

If you're getting into this, we've changed the production method now. So we give out a handout for them, goes to the pharmacy as well. They're getting starters, is still the same. That will always be the harvesting. And species to be harvest is protected. There's no checks productions because we have the one day now and we brought it in to bring down the smoke because we reduce the smoke and now when we are by 60% because they're up early three days, only one days in the days between 6:00 and seven hours.

So it came on completely. Yeah, because there was a huge impact. Then here we have and I put an example here as well. They need to get at least 42%, that's on page 12. 42% of the selling price of charcoal. But it's difficult because it can vary. So what do the people put in the contract? When they start, they put the going rate now is 850 they put in. If you produce more than three ton then increase to 900. If you do consistently, many farmers leave 1000 now. Because then it's it's a bit production driven and that's for unskilled labour. So if the goldens on average get between 8:00 and 10,000 in union, yeah, because they work harder. The Namibians average between 3 and 4000 per month per month. Unskilled labour go to a cashier, ask them what they earn. 1400 minimum wages for farmers 1/4. So the charcoal industry is really if you do your bit, you get your money. So still exists.

**Here it says 1800, so the processor based that much for.**

I used it as an example.

**So that's for paying the farmer.**

Right. The farmer gets it from the from the processer. The factory who buys it?

**And then the farmer will allocate this 42% to farm worker 50-40.**

Yes, I must. Quickly show you the sad story about charcoal man. And I'll make use on to make it easier outside because the average price of FSC's 2000-2300 and for the non FSC the highest will probably is 19 depending on the $1,000,000. And we'll always get more.

This could be. So let's say the farmer gets 2000 Namobian dollar. That means the Walker can get right up to 1000 depending. Let's say it's 900. So the farmer gets 1100. This is to cover his fuel, its cost, his transport, the food and everything. And and they do. We we've seen the farmer makes about 20% profit, only 20% of that. The risk goes in. But now this is bought by the factory. Let's let's say that's my car up, I said to the farmer. Then Macara sells to later DHG Germany. To the middle, Mandy. They they then get from them 5000. So it's quite more bite they package. They've got this. You saw the factory. And they have all that in there and. There's good money. They've also for them. This DHG sells to, let's say all those people and they sell it at Namibian dollar compared to let's say to 12,000 per ton.

Can you see? How it goes more and more and more. Because air transport they have big warehouses that are very costly, they're changing their model now because they have no warehouse in in office space. So they split their now. Yeah, but then you go to the shop. It costs anything between 18,000 and 20,000 Namibian dollar in the shop every month. Yeah, you can look up yourself. It's now some places, one EUR 24 kilogram of topo work times 20. That's what you find and look here. The worker got 900, the farmer got 2000, he got 1100 thousand. And still we have to do it because the added benefit is livestock. So my arrangement improves so I can have more more arrangement. I can produce other things now. My grass is green back. I can have a variety of game on the farm again. So it's it's really a big story from an environment pulling behind it as well. Yeah, one must never forget the environment park.

**From that money that receives, they need to pay also the food and the housing for the deducted from the seller.**

Yeah. No, no, no. No, no food that they buy on account the worker needs to pay for his own. But the housing, the showers, the water, everything and the safety gear, all that the farmer has to buy the boots that they're wearing, the overalls, the farmer has to buy, according to Namibian law, they have to. So his expenses per worker, you need to think as well aside. But the food that's. From that money 900. Only prices. Yeah, only food. And that's why I say 900 per ton if he does his three ton 934 ton 3000 a month now and with that by saying to to the, you must also remember that the charcoal work in Namibia, it's probably 7 from Golan has at least 10 people behind him. To the office center, yeah. Because they seemed at home, the grandmothers are looking after the children. The sad story mamabear the parents work in the cities and the small general after the left of the grandparents very often. And I've always said if I would win the Euro Lotto or whatever, you know the billions for Namibians have to create decent creshes in the northern areas with us too. To start the first five years of your life are so important. And that I think if we just do that in Namibia. We will be well aware. When you go to school, a different story, but if you have that foundation. This is not. For for decent crisis where we can get. Teachers to help the grandparents. Now Andreas, it won't work. And I don't see that government doesn't do that. They we unfortunately spent so much money, vocational training. It's not wrong vocational training. What did we do, Namibia? We took the German model, but you know the German model. You have two schooling types. Non prime source are fine. And then suddenly you can split out, but everybody's on the same level. Then you go to the more practical side or the one where you get to orbit to. Yeah.

**University events.**

For university. So you have the choice, but the foundation is there. And now we have this big vocation that they don't have the foundation. Now we're doing the vocational training centres, the success the the IS success, but it's so low. We had electricians now who invented from the municipity , had to be flown to South Africa. Now there was an explosion. They say it's not the part they worked on. But I can tell you not because. People won't train properly. It's a lack. If you do not have the basic numeracy and literacy skills. And this to teach them how to think as they think of your hands and your brain. The same be practical. And the first five years are crucial for that man. That's why when you go to creshe, you learn to make pictures. Also, we don't have that. In the rural areas. And even the learning environment it's somehow. They've got a beautiful loading under the trees. I love it, but there's nothing worth it. Nah, there's certain equipment under the trees. The type of educational. Toys and things now. That they can. And and they teach it to. Teach them how to use them. When when you drive from the north, you often see the glass sitting under tree thing that's beautiful.

Or in the school uniforms and anything that looks nice. Yeah, so people want to look, no, make no mistake, people want to. But I I feel that I'm happier now without declaring the government needs to see to it for education. From one year old already needs to come. If we want to make a difference, then make me president. I'll put that in. It's the basis of any any community education anywhere.

**How do you address the? How do you? How does transport comes into play?**

Yeah, OK, very often marcara, if it's a certain distance. Now let's say it's 200 kilometer to the phone they provide the transport. If it's more than that, and that's why they only pay 2000 many people that pay 2300, the farmer has to pay transport costs. So there there's different models now also depends on the distance. So all the big processes have their own transport, yeah.

**And among your 1400 Members, how many are processes?**

No, no, none of them. None of. Our Members are the producers processes currently are 26. On and on our website, so we're busy updating the game. Yeah, it will be updated. We will remove one or two recently and we're adding new ones on which is growing as well. When we started 2016, there only only I think 12. Yeah, and one said we were 30, but we kicked off a few because we don't allow funny things happening as well, man then we kick them off. Then they're not associated with us because it's a free voluntary association.

**Yeah. So we would. Like to we would like to. Show this called. Census, where we're working on. We've heard that. You've seen that before. So the idea is that so in the green area, those are like the farmers or biomass suppliers that provide biomass to buy refinery. And we are investigating a technology that can produce four different outputs. The main one is bio oil that's in the end can be used in the shipping industry, but also.**

Yeah, we have local body which uses energy generation, water treatment to us now. Soil management, funding, equipment, employment, water, energy, infrastructure, education. Or pretty good bikes, or bio oil income from selling biomass. OK, let's can I ask a few questions just so I understand it a little bit better now. OK, your your biomass extraction, you've seen a bit like a small little factory. Is that what is that wrong? The biomass extraction. Because you've got the picture of little factory there.

So is, is, is it a, a place within machinery or what is it?

**It's a big let's say it's a big plant.**

A plant? It's a plant. It's a big plant like we have all. Charcoal plants, yeah.

Than that. No, no, but it's it's a concept and it's a concept like that. OK. And that you want in the rural areas, where would that be anyway that big plant will be when one of the big cities like motivar been through Spain really OK. I'll tell you, not on why. I said really OK. Alright, now how do I get my the biomass extraction to that plant?

**So let's say each community has one storage place or a shipping place or sockets process.**

OK. So you you have a shipper and you have no matter how they do it, yeah, they gather in. A specific format. Yeah, the wood. Yeah, yeah, yeah. Of the biomass. And that is then transported to this place. OK. Then at that place you have biochar and bio oil output, OK, and biochar is showing going back. Is it for credits or for what is that?

**Biochar is going back for, based on the property of the biochar, it can be used for all the three, one of the three purposes based on the local context. Let's say for example, the local people do not have clean water access. It can be used as an activated xxx. You can still treat it as an act to become activated carbon for. Water treatment you don't have.**

But then it. Must be very high net over 900 degrees.

**Yes, exactly. Yeah.**

I want to come back and this is something I've told the big guys as well. We make a distinction between biochar and activated carbon. Yeah, very. Because if you will be surprised or biochar, which is just going to be used for animals already in the animal feed. I've got such success stories here with go to rural areas. We have the spoiled, the poisonous plants, September, October, Namibia, especially the Konini area. And you have to start in July feeding your kettle. With the bio char. Falls out the immune system and it extracts the poison as well. So instead of losing 20 kettle, I might use one or two. So that's what I have personally from the municipality he does it really like every year I give him power shot and he takes it that time of the year and he comes back and reports back only knows to kettle instead of previously 20 that's normal biochar. They also use the biochar sometimes for humans which? They shouldn't do what they do. But it's not actually fit for human use. Coming back to the water I just want to mention that activated carbon is the best for water cleaning, but we've seen now. In Toronto, here on the on the they've got some settlement areas, the residential areas where you can't use fringe drains, it's forbidden Namibia for new houses. You know the French drain system? The French drain system is all over Africa from the toilet. And the sewage is getting too big and the coal were brought and everything in and it's ciphers into that. You know the problem is if that goes into rivers and you get equally in all those bacteria like since Africa now. So what they did, all the new houses need to have a new system to clean up under the houses now. And if you pull. It's still not clean, still not fit for human consumption. So what the tests we've done, we took more charcoal. So what they need to put it into points through just before the doll pond with charcoal. And then there's an overflow in the area method. Water tested. You can't. Please don’t buy charcoal activated, which people say keep absolutely clean fit for human consumption now. So we tested here Nam Water and that that's why I like this area because that's huge in Africa. Water in Namibia is more precious than fuel or whatever you know, because without water you can't do anything you know, so it it. It is a bit of a challenge now. OK, so you say you take this back to the. And then you have possible uses soil amendment, energy generation water treatment. And then you have the big thing at the bio oil. Just explain to me. The bio oil. How you want to to see that happening?

**So it's like a crude crude oil and oil instead of fossil crude, you have bio.**

OK. How much wood do you need to create, let's say one liter. Of oil crude.

**So usually people have, based on the technology which we are investigating, people have not done any experiments with, OK.**

The first thing is that, but based on other type of woods and those kind of things, we are looking at a yield of 20 to 30%. 20 or 30%, yes. Remember, our woods are hardwood. It's not the soft woods of Europe. People always get a shock when they see it because we do not have that water retention. Now it's that's why it's hardwood and that's why it's always good for the other things. Yeah, we've seen that and people always ask me because I don't know because I have not seen any research on that as well. We do see when we burn charcoal, the first hour of this moisture, then it stops, the colour changes and this is usually when you put up the thing to get the result. Contains it, so it's sometimes half an hour. In the winter months, it goes a little bit quicker because the wood dries out a little bit. But they stop in the middle of winter when you chop wood it still draws water from underneath here. And we've also seen the test done on the biochar. We actually have the best biochar for Europe and Europe, which is the best biochar of Namibia. Unfortunately, no way not the reason being because our hardwood has lots of minerals, the quality of our voucher is better than the European voucher. But the moisture retention of biochar fall in the fields. The European one is better because it's a softer wood. We, but even as we've done tests on on 4/4 farmers where we did 3 fields 1.12 feet and two where we use biotron, there's nothing, no fertilizer, nothing. We also took photos of something we did for the GI. And we did not water this one field, and when we watered it, we did exactly for 5 minutes because you couldn't measure them up with the 555. And then it's the equal amount of water. And it was amazing how the barbershop stuff grew and you saw the difference now. And that's why the even the European. Thought I would even do better here. But what we have is good enough as well.They must go to a Sakaki plant like this.

**You're sure?**

I think it will be very difficult to transport.

That's not a problem. But we need it. We the people are actually doing it now for transport routes now. People always do this service and say what's wrong. I live here. I must tell you from talking or talking. Is the areal stuff has to be. These railway everything there for transport. This more bush that grows quicker, the rainfall is higher. And remember, you want to do it over 20 years now, at least now. Look around the areas here. We'll have harvested those great growth is not that quick. And then all the studies if people.

I believe they will. The thickest near the most dense and most quickest, and the varieties. That you have there. But you're also looking for varieties. You would you would know. But there you've got the. People push for all the other other pushes falling up. Which you would probably need this for. People always very rocky there, I said. No, it's not true. We've got areas. Here we've can’t even walk. It's more sandy soils here and in sandy soils the quality of your trees is not as good as in the low meat clay salt is the more minerals. Especially for looking at biochar all day, yeah.

**And this technology it's it needs weight materials, right?**

There's a lot of weight, so you cut and it needs to go through immediately.

**So The thing is we it's basically in a simple manner terms to understand. It's like you put biomass, you put water, high pressure, high pressure, high temperature.**

Ohh, looked at, I've looked at. Yeah, yeah. You'll need to get 44 components basically out. So that's why yeah, water will definitely be one of the you have to you need lots of water. That's in the know. What's wrong with us? The hands. But if you go up north, where's all the rain now? They've got, as I said, for the cyclone here this week. They had over 300 millimeter in January already, but for longer we had roughly 102. And so when one needs to look at this thing and it types of drought, they're less prone to suffering here. One needs to look over a period of 10 years of the different situations and the water there. The levels are a little bit higher there as well the groundwater.

You will see. It clearly when you drive, you see the trees. Just look at the trees. Now they're gone.

**So yeah, so high pressure, high temperature, you get bio oil and biochar as the major components. So bio , crude or bio oil, what we call as it still needs some refinement to be used for ship fuels. So that's the plan.**

I have another question and that is especially on the wood vinegar side. They keep telling me that's all I want your advice now because they asked me. They're up and they also have another team from, from Sweden. They're also coming now in in March to visit. They're talking about also this very high temperature field, I said. If you have very high temperature, it destroys the quality of wood vinegar. Because with vinegar, the heat must not go above 200 degrees. Yeah. And that's why I wanted to know. They said now, but and they wanted to talk to me, I said. Well, I don't know. You tell me. My research shows the 200. That's what they say all over when you read that literature, and that's why we use at the moment all these these sort kind of things, the laser. Will we measure the smoke that comes through the pipes? That that's not exceeding 200 degrees when it condenses of all the points have fallen 50 the fire, but the smoke is colder so I'm. I'm just mentioning it. Because a lot of people ask me that question now, but I still don't know your process. So that's probably something that one has to see because that one to discuss also with Fernando has another byproduct out of that process. I don't know. You know, I'm leaving that as a thought to you because it will be valuable. As I said I wood vinegar when it is good quality. If you can get that out. And then how much do we pay the farmers for the wood?

**Yeah, that's something we I still have to do work on the economics of it, because economics depends on.**

And I'm going to give you the bad picture. Now people have come and said, no, we do your clearing free of charge because what do I do? You get rid of the Bush, the farmer said no. What do I do in drought? I rely on that. Question that that is a bad thing that you always forget when it's a rainy season. Cattle you you must know. It's only now that the Livestocks have pulled up again after the drought from 2019. Now suddenly the animals are good. They can stop producing. Again, another drought comes again a disaster. So if one has to think that people need money for the Bush, yeah. And we had, we had science here from another team. I'm not going to make something 9 now. They got money from. Who's that? The richest guy here and on Earth.

He did a nice thing and he did the competition. I think there there are 20 people who actually gave money to he gave them about three or four million U.S. dollar, I'm not sure. Might be in 5,000,000 to start projects and all that you choose three people who give 50 million once. Once they've done the great thing, they came to the country and said, OK, they're going to start doing the biochar.

It's just smoke and we don't want this. And they start and. They took pictures on their side. Look at this terrible smoke. All they, by the way, they told me after I was so. Upset, you know and. I said, and that's sort of. How can I say path to take to the our producers bone from this? That's my advice to you as partner. Don't say this is bad and you're coming with something which hasn't proven himself. Come with the benefits. Yeah, come with the benefits. Forget the other things that they do.

Just tell them this nice thing because we support it from the Charcoal Association. Why do we support this? Because our Bush is still growing 3%, here. We're not making it things into our Bush. It's getting worse and worse and worse, and in many areas that are untapped, you know, but they're not another try anymore. That's what I'm saying. They're in the north. You'll see. There's not a lot of charcoal in the tumid area. Because the Bush is so thick.

There is very little, very little. Most people sit around because it's easier to do charcoal on here. Easier to get to the Bush and do stuff now. But if you look in the same first contained so many right up to Aussie Velo. And that's also the other thing I want to mention. I want to talk to government as well.

Now that we do a project just outside Omuthiya Moto Omuthiya who said for a heavily infested sickle bushes of. And you can do so much with that. Now it's communal era. They're not allowed to do harvesting. And then we have to do it now. And there's so many people who live from from the kettle. So we said let's at least start with biochar. We can put into the fields because they got enough cattle now to walk into the fields and it's good for dry season. You don't need so much water and all that. The soil improves and all that now. That's why I like what you've done here. Going back to the community now, because that's what we need now. But they will ask how much money do. I get for. Work price don't. Let's not think that's what they laid out. Let's think the benefit you get if you do the biochar, you've got better crops. You don't lose your crops. Now you can use it in animal feed up to 30%. You save on all those costs. No, charcoal is good money. That's the sad story. So I wondered, is hard to you? I think it's a brilliant idea and we'll support it differently now. We've always these things will always support because it's for the better of the country.

**Is not a competitive competition.**

No, it is not. Everybody asked me that question. No, no. There was some that that will will stop charcoal. It's fine. Perfect. There's so many new ones coming back on. So many nights now our production increases every year. And ask Andreas how difficult. It is at any peak for the membership and all. Those things, now they're struggling. They're struggling, yeah.

**Yeah, even your membership is. Our membership is just 133. But the active ones, I think. They are not moving 50.**

50 yeah, but still, that's that's still quite improvement. Yeah, it's slow. It's very slow. I spoke to Johannes from GRZ. Yes, that's of Johannes, because the idea is to put in Beacon Canyon together and the Cannonball said no until such time that in big also has good revenue coming in. We will amalgamate. And I said. To you? Honestly, I think in three years we will amalgam and he said no. It's too difficult to predict. And I think the more we do these things and actually do it on small scale. Don't go big. Don't go big. Just stops, not cause lessons learned in. The people of The Big Bang, they're all Big Bang because the country is the people, because you have to rely on people who need to do this. We've seen in Okara area with projects 4-5 and you may sit for cooking with millions worth in Namibian dollars. I'm not doing anything, the Duckman told me the other day that they did us pellet ties has anything for the bush feed and because of top.

Yeah, the one we saw yesterday standing. They have already collecting rust, not even dust. Rust, nothing. And that that is a sad story. So I believe something like biofuel. I think the time is right. If you look at the fossil fuels, I think that's something it's playing in your cards now and biofuel is there. That's why it's got your ethanol. So we from the charcoal are pushing ethanol, so. Which is a pure form as one. We had in backups, Namibia, many farmers using wood to run tractors work the field. I don't know how they did this. I don't know. Don't ask me. You know what they did this in the in the I talked about 50 years ago. Yeah, they did. So they produce it all from. Or you don't know. No, no, they they. The the the head is funny device. In the tractor, no in. The in the tractor.

It was some time of ethanol produced thing, and really they used a lot as well. Yeah, that was in South Africa. Yeah, but it stopped because it's so much easier doing fossil fuels, right. And you must also remember Namibia, just like the Uganda, Uganda has reawakened the the the fossil fuel plants now. And now, maybe it's upcoming. And that you also need to understand from Africa, everybody puts imposes on you can't do this. You can't do this. You can't do this. Whereas Europe, America, China, other countries are developed. Fossil fuels help them to get very rich, to do lots of things. Now you come to Africa. Now we want to start and we don't want to suffer. Now with all the other things I'm just giving. It's not my viewpoint that is general viewpoint in that country. So what we have is if you give us now just five years to do it, that we can also come up to understand it. I'm glad that didn't help them. Only 20% helps, 80% are suffering. I don't think it will happen now, maybe. I don't think so. I think we're in a better. Position before hoogerheide us as well.

Yeah, although there's a lot of corruption. It's not as bad as Africa. The disaster that save them or was in our game, it's really bad. And the crime they told me and that we don't have an amibios of South Africa over the past 10 years has always been amongst the top three for most crime in the world in the world. Most murders in who led to the thin cake flesner in the world every 25 seconds. Somebody's waiting. So Africa, it's really violent, violent, violent. We do not have this in Namibia. And I think we must use that. And it's good opportunities also for foreign investors. Every now and then someone and but they also realize they can't make this state, the statements will be made, but then you see. Then they change again. And I think the next generation of leadership is that Andreas is this is 18 and the young people, they don't take nonsense anymore. Which you don't have inside figure. They are probably 2.6 million people. Just in selector there. Are more people. So the research is actually from our side very positive. All I can say is if I see this my points would be careful to open based on that start small start the plant with easily accessible where you have enough of or get enough biochar. And the transport route is quick and efficient. That is not expensive, and to prove it works to prove it works, we have not seen projects working and that is my concern. They, at see, are also. Trying that one project they. But their money that goes in there and that's what people say. It's ridiculous. It's too expensive.

If it wouldn't be foreign basis, we can't really. Namibia doesn't have the money. So you need to make sure that investors that buying into this. You can put the best plot of the Internet and this that it will fail. But I would go small and I would choose a community that's willing that's close by to communal land as well. Now that we can, I don't. I'm not into politics, but I've been to communal land and we need to help those people. They're really struggling. We need to get them out of the city, back into the to build up the and a thing like this. I've done it while I was at Agra, always saved, and that was actually my criminology last year. As it and then I spoke about at that time I pulled the charcoal hubs. We need and then are related to biomass hubs. We need them the communal areas, but small, not big that we can do. Charcoal start off with then. We start well. Their clinic will improve. A shop, will improve. Then we built donkey carts to bring the wood right. Then you will have electrical services, because now we're doing solar energy and building up. But all the projects I've seen as boom, you're putting this massive thing means it's not ready for that. That's why they moved to Sydney. Like here. They talking outside the that plant was supposed to be up in 2000 already. Nothing has happened. And then they told me another equipment is involved. The containers are there. They're waiting above the Spain. It was, you know, about that Andreas office. But that was January. That was January 2020 or 21, I'm not sure. All that money was stolen for the lie. Somebody pocketed that stuff. And there's one other thing. Yeah, that's another thing. When you get in this. Please ensure the contractual agreements. No things paid to this and that person. Things must go out on kinder posed to both the directed tear and tender. 3 quarts do not take the Chinese quads. There will be the cheapest and in the end will be the most expensive. So this, unfortunately, that's what we've learned here. We had a shopping center in rural that collapsed. Because they built it with Chinese on it. Could you got cheap. Air quality when they opened the cement factory or rhombus cement, which is really the best quality you can get, struggled to wanted to sell it. And the government said no. Luckily, the Chinese wanted to buy it, and the government said no, it's against all competition board rules and all that. No Chinese allowed to buy it. So I think they realized that it will now. Yeah, but it's, it's this really, really looks good. Official pictures of the biochar activated carbon. It leads to a lot of confusion. They call it biotronik, but we differentiate. Is it partially activated? Carbon whose activated carbon somewhat stricter and stricter rules and you know for human consumption, extra measures for sand filters a little bit lower than the certain levels, yeah. But as I said, we got away with virtually. All for cleaning.

**We've one last thing we want to understand also the different stakeholders that will be involved in a hub like this and their positions in terms of their power to make decisions or make things happen and their interest in a hub like this. And we've plotted them in these these grids.**

Yeah, I see the power low. And as he maritime up the high, OK, I I see why you say that because you want to sell it to them. Yeah, but yeah. The bio, biomass collectors are for me. Are actually very high, must be high. High power. Otherwise, you're not going to get it. Maybe stop that. Let's see. The government is the. Department of Forestry Waste that in here the regional government national government, they are high.

Both are high. They yeah. That is actually correct then, and then it's finally they are there because they are currently are stumbling block that we cannot do charcoal in community.

Yeah, yeah they they I could I will tell you why this happened in it was opened all years could to charcoal and then in the 2000s there was a boom for charcoal. People exploited communal land. They just it was nearly a desert. They nearly cooked a desert and after five years a minister came and went on tour until and he saw what where all the trees got. The next gate was closed and that much Apple. Production and it was closed for. Phenolate. They opened it up 2019. Government of presidency. So I was at the big meeting. I did a presentation as well about how it could work. For us to sit. We then had two years ago we had the FEC project. And which is so sad. Sorry, Andreas. You must close your. Now it was the one by they gave it to in Big Vidyas it not to us. One charcoal. How can you do this now? We are the. Experts on charcoal not in PIC now. And I forced myself into the project because I didn't it OK, we from because I want to make it the six we gave the trainers to teach them how to do charcoal. Just charcoal how to burn the charcoal properly. But it was too late. The harvesting was bad. Foresting came. And said look all. The harvesting there. Because you've got specific harvesting rules, no matter if it's chalk or whatever, it is none. You do not leave a stump like that on the field on the ground, and you need to to cut that stump as well. So we're doing that in our training. We also, in our training, our charcoal on our site, leave the big tree, let's prune the branches so that tree grows nice and bigger. Yeah, it's worth much more than cutting it big, but take some of this horrible branches off. So this is part of our existing training very difficult. Because when you turn your back, they chop the big tree down now and they. Better they do. Put it on the ground and. They even deeper and they put. The same build with it, but you can see it. There's no grass is growing, so when you're doing inspection, you stumble over it. So they are quite a few rules around it and this is where we we forestryis very good. Our biggest challenge with forestry is manpower. They do not have. They go to. All our FSC funds to do inspection, which I have told them repeatedly don't do this. Do the other farmers that are on. If you see who don't care about the workers who don't care about the environment. But they don't. Because it's easy. It's nice going to the efficiency, it's from and this is what we're aiming on this year. Tick, tick, tick tick. We we we going to force them not to do that because for us we get handed charcoal in the street you pose desert and I promise. You we don't. I'm probably the much stricter than anybody else. We have had here. Now I want to protect the trees. We need to look at, we need to leave things behind for generations to come. And we also the way we harvest in certain areas are harsh. You know, they take out all that platform. Because when the black form was very thick and the other species die off because you want them to come back again, and This is why you harvest a lot certain things. But it's and Andreas will tell us. Well, it's, it's, it's art. It's not everybody understands that now and this is why you need your forestry to go check. So when and Mr. Oxford is deputy director, when we went to that site, we walked and said we see this. Here we are stand 100 meters further out to see the next mellifera in this area in this area. Now he was very clear on that and I agreed with him. Because this is the things you can't say. Oh no, I want some meaning. You need to look at the whole vegetation and then to determine. And that's why I say the north and this is why I do not understand why all studies are charcoal. Don't believe it. Sorry, Andreas and my right.

**I know you're right, because with the whole concept of harvesting, it's all about yeah, we are talking about sustainability. And so yeah, and if you define how much you are taking and how much you are leaving. It kind of also inform you what kind of method. You should use. Yeah, because you if you for instance, you say like a Bush roller, see how big is it or a mini excavator or some manual depending on the spacing you want is influenced by that.**

I particularly like the Bush roller because you've got a big one in a small one, and what I've seen of the Bush roller, it can maneuver like this. Yeah, and it lifts the stuff. And then when it goes out across when it. Goes to the gross comes back. Yeah, just breaks it. But then you need to go back with the chainsaw. And really clear the while it's still soft. If that lies for two months, the chainsaws. I mean, it's so hard. So you need more chainsaws. And that's another concept that farmers don't understand.

You need to go the next time and. Start that subject process. So there are definitely good things that can be done. So if I look at this commercial farmers. Yeah, definitely. Yeah, yeah. Bush processes who are the push processes.

Just give me an example, shippers. Also, you're thinking of getting companies that provide shipping services or whatnot that can go do it. Yeah, because that's a that's a good thing because remember, the normal farmer does. Not have them. So you can rent that service. That's why they rent the bush rollers and the excavators and all that. OK, that's the civil society will complain. They I can tell because it's misinformation and you must see on the social media.

Yeah, and and it's. I've got no stuff from Australia now. Where we had to write a big write up to them that they're not talking about, and I sent them my guidelines as well and they were all funny things he said was bad in the past. Now that's why we're here. That's why we reformed. It now. And people are still. Stuck how it was now in the early 2000s. Now it's not like that anymore. We had a book published 2010. Namibia's black coat, but Woody Dickman and I use that as my Bible as well. It's obvious it is. It's old, but that what you wrote in that book is nNot used to be. We need to measure us against that. Are we today?

Now, I said that's why. I use it keeps me. Gives me energy to continue. So I don't know the small scale farmers, local commuters, academics coming back to the civil society. I've seen the school children and the teachers teach them the wrong things. About three years ago, we had other day here and the children little plaque. It wasn't the only campaign based campaign. So they were talking. I laughed at it because it's quite funny of the bribing of the charcoal and all that. It was true at that stage and so they picked it up probably from the parents of somebody. Now the forestry officials give me a bit of meat and I give you a permit because everything works on a permit system anyway. Then they say, yeah. And taking all the Bush and I just you know what I say to the children when it was my turn. Who, if you like eating meat? Nice beef. Nice go all their hands. I said. You guess what? You have to stop now because you're going to eat in future chicken and fish. Because if you keep on like you're talking now and leave the Bush there, there's no grass for any for any beef in this country, they were shocked. Because they're not taught this, no. You need to balance, not. And I think this is this is what what we will be there and the only thing that works to have good studies and to and to ignore 90% of the junk that's on Facebook. Now you don't get into any disputes unless somebody asks us specifically in our e-mail. Please help us with we don't phrase it from us. We give them the wording and they post it because we do not get involved.

**Yeah, yeah. In addition to that, like the series was that they, they have been sort of misunderstood. Especially like on the international communities on what is happening in Namibia with some they have always said the concept of your destroying destroying forest of which will not.**

We've got forests.

**Yeah, yeah, that's what people said to me also. Yeah, yeah.**

**Yeah, of which we we do not have forest to say. And another thing was also on our own as a nation, the government, the practice has been some sort of yeah forest related also. So when all these values since we arrived. They yeah, there was a bit of, you know, a fight. To make them understand what farmers are doing, because the rest was, it was it's all related to forest. You can cut down trees. You can. So we have to fight the.**

And we agree. With that, we agree with that you know.

I'm German, that's why quite many German tourists always talking to me when the German tourists come into the country. All your bushes are romantic is OK. I'm going to put you in bush four. And you'll see that they're only so lost.

Know what Namibia was? A country that good leather from from heights from Canada. We can't. It's not used for off cuts. They go through it with. The phones, you know, they tear it, and even that the people don't understand. So it it is bad. Now it's really bad so. Yes, we do say you. Also need a lot of. Bush, though, because kudu some kind rely on your Bush and in the dries you just when spring comes in September here you've got the sickle Bush, now it's the most protein you find in that. Bush and the grass is in low. So the the Kurdistan and even your York, even summers cattle eat it. They're nice in fat. So you cannot take out everything you have to leave this reason why it was the the one thing we do want to replicate is the preservers all over Africa. That's the issue. Right after Kenya for the office.

Because they use a lot of water. They they are the only invader Bush. The other keys are not people call encroachment. All this. That's wrong. It's so wrong. It's bush thickening and bush thinning. And the only way there is the preservers, yeah.The others are an indigenous species. And those where as if from them.

**Where is it from? Them from them?**

The preservers I think it came from Southern America. Somewhere there, and they are again bringing grass and all sorts of things from other countries now because it grows so quickly all day. They have done enough tests online now. Which we used to have the. Eucalyptus here, and especially tulips for in the mines they use, was very strongly. For underground mining. All those, those those. Forests have gone because they're very bad for underground water, and that's our challenge and maybe underground. That's fine, but if you don't get rainfall all season, then levels go you need balls for water and all that. That's also tell I saw Germany, now in summer they had problems. Even a city like Berlin, because it wasn't raining, so they had all these apps. Now it was silly. Germans are something silly they have in the parks. These trees now, so you could location you have this tree. Oh, it was watered 2 days ago. It's good. It's good thing. Yeah, but. What does it tell? Yeah. But I also see there now they're changing in their forests. They said they need a new type. Of dream for the trees are dying.

And their other trees growing now. And they said they'll need to make this in your forest. Those you need trees. And that's my set for, you know, like that's the law. Sad story the. Whole world is shouting at us. We're we genuinely have a problem with the Bush. We do not have the trees and if it's a nice filifolia grew as a massive tree, it will stay a tree. You know you have to leave it now, but our Bush is the problem. We do not have so much carbon going into the we are carbon negative in this country minus 2%. We clear the air in Namibia. And people keep them out of travelers, their guys, to be clear, because we're putting back now. So everybody is shouting is giving a number. We are climate change, we are the worst affected by climate change in Namibia. This country is really getting hot here, but we had one of the coldest winter solstice. At extreme, Weathers is cleaner. Yeah, we see it. And that's how climate change needs. But the bad thing is extreme heat. It is really bad. Although we still do so much. We don't have the industry, you know, I've always said if you if I'm always compared to German Germany very well. If you take a city like Berlin, let's say Berlin in Frankfurt with a plane. Landing they produce more CO2 on a day than we in a whole year in Namibia and people need to start realizing that now. There is an issue, not here. Yeah, we have to clean that up, but I see there's a big drive now. Just Ukrainian walls up there. But so I've changed anything on that. You know, but the Ukraine has stopped. They talk. They were big producer of child years, lots of money in foreign currency in Ukraine. Yeah, to europe. And then you've always said they found Ukraine in small containers in the lorries, the ships, the vessels, they take 200 containers along the way, but work it out. It's cheaper for me and from the Ukraine and Romania for this CO2 footprint because all complaining CO2 footprint. Ships and charcoal is there's no ship going to ship. It's carrying its act. Additionally loaded officials, if they space. So that was also a big argument in Germany on the social media with the people.

You shouldn't get upset. Some people you just can't get any sentence. Just cough.

Hey anymore that you want from me. Sorry I told you. Talk a lot.

No, just maybe just pop in again for a round up there and share some ideas as well. And I. Can tell you also will be good.

**Well, we are organizing a workshop at the end of first day, so it's probably 15 or 16 February.**