**G1 - CARDER - 24-6-2022**

**Specialties/difficulties:**

* **“Ganar altitud”: this phrase was used a lot near the end of the interview. Its literal translation would be to “get/win altitude”, however in this context I believe it refers more to the action of growing in some aspect.**
* **Ganaderia (min 02:05): animal breeding**
* **Extensionista: is someone who promotes the development of a specific practice by providing training. Possibly could be translated as “extension agent”**
* **Cacao: I left is as cacao but could also be cocoa**
* **Bocatoma (min 19:54): The term refers to the structure that takes water from a source such as a river. The literal translation is “intake”, but it didn´t sound appropriate in the context of this interview.**

**First can you tell me a bit about what you do in CARDER.** unintelligible

CARDER is the environmental authority from the department. We oversee managing natural resources for human beings. Because the resources are managed for the people. So, we are the point of contact for the people from Risaralda to control, promote, take care, and everything related to managing natural resources. More specifically, my role is in the Subdirection of Territorial Environmental Management. We manage, I do not do control. I manage things to promote taking care, to bring projects, to innovate, educate. Specifically, my role is in climate change. I´m the one in charge of generating the departmental strategies of mitigation and adaptation to climate change.

**You work in all sectors, not only coffee or banana?**

As a corporation, we are not “extensionistas” , which are those who give direct advisory on productive systems, whether it´s coffee, banana, avocado or yucca; we do not give that kind of service. What we do, is to see that the productive systems comply with the environmental part; that they do not cut down a forest to grow coffee. For animal breeding, we promote that they plant trees alongside taking care of the livestock; that they respect the protective margin from the river.

That’s more like the role that we have as an environmental authority; that the processes of coffee transformation have treatment plants and septic tanks to avoid water pollution. Always from the environmental perspective, but not in the productive system itself. We have an approach, called Green Business, they promote and advise not necessarily businesses, but farmers, associations. Highlighting the importance for them to “be organic”, that they have biodegradable packages or environmentally friendly packaging. They are given a label called “Negocios Verdes”. They are given advise for the marketing, differentiated from the traditional one.

**What do you think are the main challenges or impact to the environment?**

One of the main challenges is conservation, which is very different from most of the country, which is restoration. Why? In Risaralda, the corporation bought land a lot of years ago, more than 30 years ago. Today they are protected reserves, they are huge forests. 55% of the department´s territory has a forest; we have a lot of forests and as you said, we are a very green city.

What does that entail? Different management. Conservation management. Nowadays, if we want to do a reforestation, to plant trees with a business, for us that´s a challenge. Because there´s no space to plant. It´s a problem to find where to plant. What challenges do we have right now? The water resources. We have identified it by the Plan Integral de Gestion de Cambio Climático, as the most vulnerable system to climate change, the most vulnerable for us. How do we evidence it? If you go walk around Risaralda you´ll see that we have a lot of water, every 200 meters you´ll find water, but at the same time that is vulnerable. Why? Because we depend on a few sources for our needs. When the phenomenon “El Niño” or “La Niña” are here, all the systems are affected, and we end up not having enough, we have 3 rivers declared as depleted, you´ll see water but you cannot do anything about it. So, the biggest challenge today is the water resources management, because the city keeps growing, roads are being built, infrastructure is expanding. We are in a part of the country where everybody wants to come. You cannot imagine the amount of foreigners and even people from Colombia that want to come live here in Pereira, because of the calmness, the weather -which is amazing -, it´s cheap. Living here is very cheap compared to other cities, in here we move around in 20-30 minutes. In 10 minutes I come from very far away. That is very liked but what does that entail? A very high pressure on the resources, with them being finite. So for me, the biggest stress is on the water resources through animal breeding, monoculture of avocado - right now coffee and animal breeding are being replaced by avocado - and infrastructure.

**Do you know why a lot of people are replacing coffee for avocado?**

Producing coffee nowadays is on a loss, because of the price of the dollar, the price of agrochemicals, the workforce. Since it´s very cheap to collect coffee, it´s very badly paid, a lot of people say, “I prefer to go sell minutes, for the phone, there at Plaza Bolivar than to go collect coffee”.

For those who grow coffee under a traditional system - which is everything that comes in a green package of agrochemicals for a monoculture - if they have a relatively small farm, it is not being profitable. Sadly no. Compared to avocado, for avocado right now there´s support for import and the kilo is very well paid. So that´s why a lot of people are switching from coffee.

**And that has an impact on the environment.**

Of course

**It has a negative impact.**

Any change in how the soil is used, will have an impact. But the thing is that avocado crops are permanent, it could be beneficial on the long term. What is the problem? Bad practices. Like cleaning the ground between trees, leaving it naked and completely exposed, that is a bad practice.

If avocado cultivation is done in an environmental way, with environmental concepts, it would be very good. But sadly, they come here with traditions of how it is done in other parts of the world and want to do it the same way in here. That´s when we begin to have some problems.

An example:

Not long ago, there are 2 municipalities that started to throw flying fireworks into the clouds. Here, at very specific moments there are hailstorms. We know that that is normal; 1,2 or 3 times a year there´s going to be a hailstorm. The people who came here to plant avocado didn´t know, and they have heard that in other parts of the world people throw flying fireworks into the clouds to avoid hail formation. So, they come here and want to do the same. Later I demonstrated to them that they were wasting their money, that the way they were doing it doesn´t work. In other parts of the world, they do it, but with more advanced technology. With fireworks with the required size, that can get very high. But here they do it with normal fireworks that are used in December in Christmas, and that one didn´t do the trick. So I demonstrated to them how they were wasting their money. That has an impact on birds, with the explosion, it produces stress, it damages their eardrums. This is a place for migratory birds, here we have a lot of birds, so there´s an impact in there.

**For the people who want to replace coffee with avocado, do they need a permit from CARDER?**

No, each person is owner of their farm. They can grow whatever they want. If you want to grow coffee, avocado, yucca, bananas, you can do it without asking for permission to anybody.

**We have a focus on the coffee and cacao sector. Could you explain a little bit more about the environemental risks on them?**

Cacao is not traditional from this part. In here the weather is a bit mild, close to cold, not even cold, it is mild with temperatures around 18-19 degrees. For us that is cold. When it´s around 16 degrees Celsius, that´s very cold. For you that might be great.

**It´s normal.**

Not for us. Our crops feel it. We have a huge variety of crops. Cacao was one that didn´t grow across the whole department. It grew only in some municipalities. I invite you to look up the thermal floors from Risaralda, we have a great variety and that’s only an example. We have perpetual snow, at 5000 meters above sea level and around here, La Virginia municipality, is at 900 meters above sea level. All that is very close. We have a number of very varied thermal floors. We are also in between 2 mountain ranges, each one of them has a different type of floor, because they were formed in very different times. So around here are the Central Ranges, which is the oldest from the continent. On the other side, when looking to the front, are the Western Ranges which is the newest in the continent with young floors. So, we will find variety. In both, cacao wasn´t that common through the department. Something that we are observing now is that with climate change, with the few degrees that the planet has increased – because the uninteligible, there has been an increase of around 1 degree in the last 30 years - , some municipalities have been able to start working with cacao, and cacao is starting to be one of the most important productive systems in the department, while coffee with its current management is losing space. The space can be recovered through differentiated management. I´ll tell you a bit about Colombian History: years ago, coffee crops were mixed, it was not a monoculture. Do you know what a monoculture is?

**Yes**

It wasn´t monoculture, it was polyculture. In between the coffee, there were trees, avocado, guava trees, oranges, shade trees. Around 30-40 years ago, the Coffee Growers Committee told every coffee grower, “Cut down all the trees and let´s turn this into monoculture” and they brought a new seed called “Variedad Colombia” and they said it was more resistant and that they wouldn´t need trees, only coffee.

**Who said that?**

The Coffee Growers Committee. That’s the main association from Colombia, they give the advisory and the “extension”. It would also be good if you contacted them, they have a whole research line. Very strong.

**That´s different from Fedecafe?**

Yes. So, in there, there was a change in how things were done, and this new way of farming was called traditional, which is monoculture-based, and everything is sold. But since uninteligible was created, it is possible to have coffee under the shade again. If we start doing that, coffee under the shade mixed with other systems, we can begin to recover the space that is being lost nowadays. That´s one option, as a solution. The thing is that sometimes not everyone is willing to do it.

**How are you working regarding those topics? Are you doing projects to recover that system?**

Not necessarily, because that depends on each person. In here we can find some “lineas”. Something that has come up in the last few years, with the growth that coffee has had, is special coffees. You´ve heard about traditional coffee and special coffee. Why are they special? Because they are managed differently. They are worked with organic principles, cleaner production, or they do something different compared to the traditional. Nowadays the special coffee growers are having greater profitability than the traditional ones. But there is also a difference in the profession of the person or in their knowledge. The traditional coffee growers, most of them, are old farmers that didn´t study, they learned empirically, and they have a bit of trouble moving out of their comfort zone. When we see the people working with special coffee, they are people that are academics or professional, they understand and adapt themselves. The thing is to offer people knowledge, and capabilities and technology transfer.

**You´ve said that you think that the cacao sector will grow this year?**

Yes

**Do you think that it will also replace coffee?**

Maybe not replace it, but take a very good space, economically speaking, in the department. Here we have a lot of variety, a variety of around 50 crops. Those are the main ones, the most seen, but we have a lot.

**In both sectors what are the risks to the environment? Pollution? Are there any challenges?**

From the productive system? The transformation? With coffee, the way it was managed in all its process, first, it´s been a while since this was common practice: the extension of the farming zone. People cut down forests to grow coffee, also for cacao. During the cultivation some people use a lot of chemicals, or do bad practices such as weed everything out, leaving the soil completely naked because they think that the weeds compete with the coffee plant, so they want to take them out and they do so with chemicals.

Our territory is comprised of mountains, it has a lot of slopes and there will always be river and we have a lot of shared aqueducts, a lot of water systems. A lot of them are upstream from the “bocatoma”, so imagine: a crop upstream the “bocatoma” using some sort of agrochemical. A lot of times that gets to the river: when water analyses are done, trace amounts of the chemical are found. Then they go to the “bocatoma” of an aqueduct. That´s one thing.

We could also have, during the transformation process, when cleaning. Nowadays from the corporation we ask them to have some wells for water to rest, to ferment and that they not go directly to a river or a ravine because before, cleaning was done and that immediately started fermenting, started smelling and was thrown directly into the river. And downstream there is always going to be some people. That would be it.

**What about the cacao sector?**

Cacao is a bit newer. I believe cacao has less impact than coffee. It doesn´t generate that much waste

**Is CARDER working on the waste?**

Yes

**How?**

We promote circular economy. We try to promote it so that a product, whatever happens to it at the end, can reincorporate into some process. However, we do not have the capability to give technical advice, we just promote. We show other examples and promote how it can be done, but we can´t go help them do the analysis of the product and see how to reincorporate it into the system.

I said it before with the sugar cane, because with it we have helped in some processes, in some projects for boiler improvement.

**Boilers?**

Yes. Sugar cane is used mainly to obtain panela. Do you know panela?

**Yes**

In that process, sugar cane, a coworker of mine Beatriz Silva tells me that it is the only system that she knows that is 100% reutilized. Because you take the sugar cane, you take the juice out - which is taken to a boiler to boil - but what is used to generate heat is the sugar cane bagasse. So everything is reutilized, nothing is lost. In that process, the boilers were not very efficient, energetically speaking. So, they started doing other things such as burning tires, burning other types of wood, cut down trees to burn. With the CARDER we have made a process of boiler improvement. They have had some help, not always, but they have had help sometimes. When the boiler is improved, it becomes more efficient, so the process is more efficient as well. It is not the same as with coffee or cacao.

**So, in the region, waste use is only done with sugar cane? Or are there others?**

No, there are others. Because, for example, right now there is something new. With the coffee peels, they are doing desserts, those are other kind of processes but that are still not industrialized or big, the amount that they use is very low. I´ve also seen some experiences that, when coffee is filtered in a household or a business, the remaining is mixed with some chemicals to form a mass and that is moldable, so they can generate some products.

With coffee, when the plant is cut, that stick is timber-yielding, it can be burned, it can be used as a fuel for the boilers for the sugar cane. Most of the time for the sugar cane or it can also be used for the household. In here wood stoves are still used a lot. To improve things, CARDER also builds for the farmers stoves that are called efficient wood stoves.

**A lot of farmers use wood stoves then**

Yes. CARDER builds for them stoves that are efficient with the goal of decreasing stress over the native trees, trees from the forest, and so that they use what they already have. So, it´s better to reutilize, wood from the coffee plants is used, it is burned. Also, it is burned to make carbon. That´s very bad for the health, normally people who still do that have an impact on their lungs, because it involves breathing the smoke from the carbon directly and that’s the worst, it´s very bad. They sell the carbon here in the city for a lot of uses, mainly for the barbecues.

**So, there are projects and initiatives to reutilize or improve the use of waste**

Yes, because for example, the efficient stoves are to improve the burning of waste from the coffee plants. That´s one. There´s also the one I told you about the coffee peels, also the one from the waste after the coffee is filtered. Which other one? I can´t remember if there´s another one.

**Are there specific regulations for waste disposal?**

I don´t know if they are regulations… More than a regulation telling us how to dispose certain waste, it is more from the perspective of avoiding contamination of another resource, like water in this case. Like for people to not take this whole amount of coffee peels and throw it in the river, it´s better for them to put it in their crops so it works as a fertilizer. But there´s no norm about how things should be done, it´s more about good practices. What is punished is for polluting the river, not for the final waste disposal.

**Here I have an image about the concept we are working with in this project. It is called a BioHub, like a cluster of different organizations. The idea is to have here in the green part different communities that produce biomass that does not compete with food, so the waste, like from the forest or invasive species. That biomass can be taken to a biorefinery where it can be transformed into a product. In this project, we are specifically looking to produce biofuel which can be used for the maritime sector, because this sector needs to switch towards a more sustainable system, and they are looking for more sustainable sources. We are looking into the biomass that is not being used right now, how it can be used to produce that product. The idea is that this is a win-win system, the final consumer wins but also the biomass producing part. We want to understand how it can be organized in this region in Colombia. It also brings with it environmental and social benefits. That´s a bit about it.**

That biomass is organic waste?

**Yes**

Would manure work?

**No, we are looking into lignocellulosic waste.**

The thing is that manure is mostly dry grass. The other day I saw that in Africa they use the manure, they leave it to dry and then they burn it to heat up stoves in Africa. Here we do not do that since we have a lot of wood, that other thing is not useful, we are not interested on it. The whole process of collecting the manure, dry it to then burn it when we have… We have a lot of wood, so that’s not an option, but a lot of manure is generated, mainly from cows.

**Here in this zone, there are also a lot of cows?**

Of course.

**Our focus right now is on the coffee and cacao sectors but there are opportunities in other waste from this zone that can be used.**

If that´s the angle, for example with sugar cane. All the waste from sugar cane is reutilized and you´ll see that at the Ingenio Risaralda. Huge factory. They put in all the waste. Energetically they are self-efficient. They are apart from the system, they sell energy to the system, because they are totally efficient.

In that sense, why cacao? Because I don´t see a lot of waste from it. The cacao tree lasts for a long time, it is not being cut down every year or every 2 years.

**What we are interested on in cacao is the peel**

Ah the peel.

**Yes, right now is has become kind of like compost, but there´s no other use. Also, we are interested in coffee pulp.**

The pulp

**Yes**

And the pulp here is not used at all. Yeah, the pulp is huge pollutant for our soil and rivers, it would be a perfect solution.

**Ah okay, because right now it is a problem.**

Totally.

**From your experience, what opportunities could a system like this bring to the region?**

What benefits? A lot, because it turns the coffee system into a more productive one, it involves fostering it so that the tradition is not lost, more important because we are at the heart of the coffee cultural landscape. It would mean another income for the coffee growers because the waste is being lost everywhere.

Social, economic, and environmental benefit. It would be very efficient, very good.

**Do you see any challenges if we try to implement a system like this?**

The only one that I can think is about how would the logistics be for the recollection of the waste? Because it is very dispersed, from the perspective of our roads. Our roads are from mountains and are not paved, they are dirt roads. Sometimes even for the farmers to take out their products is a huge deal. A big problem. So, thinking about the collection, because it would be a big volume, I think it is complicated but not impossible. It is not impossible because there have been some other cases, for example the one with Campo Limpio. They pick up the agrochemical containers, they have recollection systems through the whole department.

**What is their name?**

Campo Limpio. They pick up agrochemical containers, uninteligible thinking from the logistics point of view to pick up the containers.

**They go to the people to pick up the containers?**

They go every so often to pick them up. What would that involve for the waste? That the farmers should have a storage system for all the pulp. How would that be? It should not generate problems related to rodents, vectors – mainly mosquitoes -, and with bad odors. Because the stored pulp will begin to ferment and will begin to smell. If it is not handled properly, it will generate a culture shock, and the farmers would not like it. They a bit harsh about it.

But they could also have as an ally all the coffee transformation plants, there are different ones in the municipalities, from the Coffee Growers Committee or some others from special coffee, that they already have a plant where they dry and roast coffee, and even pack it. They could prepare a space for pulp storage. Thinking about it from the logistics point of view.

**The mentality changes or practice change; if we want to implement a system like this, we have to change the way producers do things. What do you think about this?**

One thing that should be changed is that pulping now is a wet process, with water, a lot of water. I don´t know how convenient that might be for the biomass system.

**Yeah, we are looking into a system that requires biomass...**

Dry

**No, with a lot of water.**

A lot of water? Ah then it´s perfect. The only inconvenience is how to take out that heavy volume because when it´s wet, it´s going to be heavier: how will the farmers take it out of their farms?

**So, the logistics?**

Yes

**But what about the change on doing things? Do you think producers are open to that?**

Yes, of course, because it is a waste that they are not using. It is waste that lot of times makes them pay for another worker, paying for a whole day or various days to go and disperse the waste.

**So, it represents a cost for…?**

Yes, it can have a cost. The only problem that I see is the logistics, because for a lot of the farmers it is not easy to take out even dry coffee. Now, to take out a container with wet pulp, which is what I was telling you about logistics, they will have to see how to solve it.

**What about in the cacao sector? Do you think the same thing?**

In the cacao sector, I don´t really know it. I consume it, but do not know about its process that much.

**About creating a new value chain and installing a new plant, what would be required permits or regulations that must be complied with?**

Land use permits. You must see that you have water availability where you are going to put the plant, that is given by an aqueduct. Also take it into account regarding what I was telling you about earlier: water resource availability. That comes with the water disposal, disposal permits. It is not that complicated

What is also something regarding logistics is that Risaralda is at the heart of the coffee axis, it is a logistics power because we are at the same distance from some of the main coffee-producing cities: Caldas, Quindío, Risaralda, Tolima is also very close, Norte del Valle is also close, so it would be at the same distance to all of them, at least from this region. Because there is another coffee-producing region but that one is very far away from here. More to the side of unintelligible

**Risaralda or Pereira could be close place then**

Yes

**Do you think that it could also damage or interrupt an already-existing system? Could it have a negative impact?**

With the few things that I know, no. Every industrial system has a negative impact. Only by breathing we are creating a negative impact; we are generating carbon dioxide which is a greenhouse gas. The thing is to analyze each thing with detail.

**I am interested because I also heard that the climate impact is also a problem for the coffee growers because they must increase their production.**

With the climate change, coffee is a challenge. A lot of times there´s a negative vision: “This is going to end because it´s losing ground”, because of the climate. But there´s also a win, there are 2 visions. The ones who are very low at around 1200-1300, will have temperature increase and they have other challenges, like the one they have one. They must begin to face challenges such as mixing with other crops that provide a shade, then they could keep existing, they would not disappear. What does this entail? A change in how they handle their crops.

There are others who will grow. Some municipalities that could not produce - because of their climatic conditions, like it was a bit cold or due to humidity – nowadays are growing.

**They are starting to grow coffee then.**

Yes, and they are very tasty special coffees. Because they come from soil where no coffee growing was done before. That is giving very particular flavors to coffee.

**It is a good opportunity to begin with good practices from the beginning.**

Yes

**Where are these zones?**

In the mountainous part. There are some municipalities, for example at Quinchía, Quinchia comes particularly to my mind. Quinchia is one of the biggest municipalities from Risaralda and it has its thermal floors from 900 all the way to around 2000. It is very particular, but also Pereira. For example, in Pereira, when you begin to come close to this area, coffee disappears. But if you go up here, coffee appears. What happens then with climate change? Towards this zone, Florida, over there there´s almost no coffee. It will grow as an area to plant coffee. And this zone right here, which was for coffee growing, is losing ground. With good practices, mixing trees for shade, it could grow again. Also, this soil is more degraded and exploited because they have been used for 30-40 years. Soils over there are less exploited soils, or at least they have some different crops, so it has more nutrients. It is about how crops are handled. In some things they lose or win, but there are options to unintelligible them.

**That´s an interesting perspective**

Yes, the thing is that not everything is negative. With climate change not everything is negative, even when there might be a pessimistic and catastrophic view. From the adaptation perspective, which is the focus we have here at Risaralda; adaptation to climate change not mitigation because we do not generate that many greenhouse gases, what we need is to adapt. That why we analyze it a bit differently: to see where we win and where we lose.

**I read on your website that you are also working on working conditions or stuff like that, like labor conditions for workers. Is that something that you are also working on or is it more on stuff related to the environment?**

The environment.

**How does access to water work here in the area and in rural zones? Drinking water. Does everyone have access?**

They have access to a relatively good quality. Let´s put it this way: some people have very good quality; others have moderate quality and others have regular quality. It would require looking case by case, but in general, it is of good quality. There´s continuity; there´s water almost the whole year. There´s also quantity.

What is happening? About the pressure we were talking about in the beginning; when El Niño or La Niña phenomenon gets here, the impact is seen rapidly. So, the CARDER gets in with a proposal that has been growing a lot, which is to improve the aqueduct systems, because sadly there´s a huge loss in the aqueducts. In rural aqueducts there´s a 60% loss, which is huge. When El Niño get here, any decrease where 60% is lost is too much. Also there must be a priority for human consumption, but the shared aqueducts normally do not do it, which is a problem, because if a person comes and cleans coffee will use the water for the whole day. They go in shock.

As a corporation we are trying to assess them on how to implement a program for efficient water use and a differentiated system: a human one and another for cleaning or treatment of some waste. There is a whole process of water treatment, of making It drinking water, putting chlorine into it to be able to use it to clean coffee. To achieve this differentiated system would be even beneficial to coffee, because getting chlorinated water is also not convenient to coffee.

We have been told that when there´s a harvest, the aqueduct stops making the water drinkable with chlorine, so that the coffee is not altered. What does that entail? Impact on health.

**Finally, we would like to understand all the stakeholders involved, how is their relation within themselves, and what is their position regarding power and interest on new projects like these ones. Here you can see high and low power, and here high and low interest. I would like to ask you about what do you think about these stakeholders and what do you think about their position regarding power and interest? Maybe we need to change some positions. Are they good?**

I have a question. This would be a biofuel, right?

**Yes.**

Everything would go to maritime systems, right?

**Yes, well it´s a proposal. From this process a basic biofuel can be obtained for maritime or aviation industries, but also you can produce bioplastics or other things.**

Yeah, I ask because in Colombia there are several biofuels: from beetroots, sugar cane, and there may be another 2 or 3, I can´t remember. Sadly, something that I do not support, at a national level, they do not allow that those biofuels are used 100%. In the national market, they only have a space of around 5% of the national production, it cannot go higher. It is a great limiting factor. You could analyze that; that that national policy won´t represent a problem for the process.

That is if it is thought for internal use in the country, but you´ve said that it is to be used in the maritime industry, I don´t think there should a problem, but it would be good to analyze it.

**Thank you! What do you think about the position of the stakeholders in the matrix? For example, coffee growers?**

Cenicafe has more power than you imagine.

**Yeah? Why?**

Cenicafe is the research line from the Coffee Growers Committee. Within the committee, with whom you could find more help could be with Cenicafe. I would give it a bit more, not all the power but a bit more. More because it is a research line.

**What about Fedecafe?**

I think it should be the same as for the Coffee Growers Committee

**They have a lot of power then.**

They are the ones who unintelligible. What I don´t see is another stakeholder, which is all the coffee growers that are not associated with the coffee growers committee, with Fedecafe. The ones who are apart.

**The independent ones.**

The independent ones, that they decided not to work with the Committee. They are different stakeholders.

**What would be their position? Do they have power?**

They don´t have that much power but they do have interest.

**A lot of interest but low power?**

Yes, because they are a minority, and they are separated.

**What about the individual coffee growers that are organized? What would be their position regarding** unintelligible**?**

Very little.

**And the cooperatives?**

Like the cooperatives, yes. unintelligible

**Does the national and regional government have an interest in projects like this?**

Yes. They are very open to this kind of proposals, very open. The only thing is that since it changes every 4 years, there´s going to be a different position. But the ones today, they are all very close to the agro-sector, both the regional and the national. This kind of proposals are well received.

I think yes.

**Do you know where we can find information about the amount of waste that is generated?**

With Cenicafe. They could have that information. Maybe they do not have it very detailed, but they´ll have something, because here I don´t think that there is a study, unless it´s a thesis from a university. That could also be. It is a more unintelligible work to go look for it.

**Thank you so much! Is there anything else that you would like to share?**

I think the initiative is excellent, I hope it comes through. It would be very good. It would be perfect in here.

**Another product that is generated is biochar, as biocarbon which can also be used for example as compost.**

As compost?

**Yes, it is possible.**

Then it would not be biocarbon, it would be bio… With biocarbon I thought for its use for burning, like fuel to burn in other processes.

**It´s something like this. It can be used in the soil, but also water can be filtered with it.**

In here we use a lot of carbon barbecues.

**Also, maybe you could…**

Have you tried the arepas?

**Yeah! I liked them a lot!**

They are done using carbon.

Well, thank you a lot for coming.

**Thank you so much!**

You are very welcome here in the corporation when you need the space whenever you want.

**Thank you so much!**