**G4 - Interview Alcaldia Pereira - climate change -01-7-2022**

**Ready, so as I was telling you they are making a study on the handling of the residues, specifically from coffee and cacao, in Colombia, specifically on the coffee axis, then we are… they are going around *unintelligible* and Marisales knowing that there are also other areas in the country with production and that, in some way, all of this could be taken advantage of.**

*Unintelligible conversation*, *non-related to the question.*

**Well, taking this into account, we are making some questions from the experience of each actor. Therefore, to begin this, more than a question-and-answer interview it is like a chat, we aim for it to be more like a conversation and what I’ll do is guide with the questions that I’ll make. Then we can begin with and introduction, and introduction of you, and the area you work in, and the institution you work in.**

For it to be recorded I should repeat it.

**Yes**

My name is [name], environmental administrator, Master in environmental sciences, PhD student in environmental studies, specialized professional in climate change for the Pereida city hall from the year 2016. With experience in climate change and circular economy and also in topics related with disaster prevention management and general environmental projects. Well, that’s it.

**Now tell us about the organization, meaning…**

The City Hall?

**Yes**

The city hall of Pereida. Well, the Pereida’s city hall is the authority from the territory of the Pereida City, the Pereida City was founded in 1863 and is located in the Occidental slope from the central Alpes Cordillera, at an average height of 1400 meters above the sea level. The economy is mainly based on services and commerce, and also with a strong economical orientation towards the rural development, mainly coffee cultivation, on second place avocado cultivation, and third place banana cultivation. We are the secretary on charge of environmental, agricultural, livestock and general rural development issues. Our work framework is oriented by a land-use-plan, a Major’s development plan, and an action plan by the secretary, and we are here because we are the ones in charge on topics of solid waste and agricultural development.

**The role you play, specifically in the secretary, which one is it?**

I’m the coordinator for climate change, which is one more process in… it is one of the ten processes within the Pereida’s environmental management. Therefore I take care of the climate change topic. Diana asked me to attend the interview because we know each other from the Risaralda’s agro-climate technical board and because, well, I have experience in the solid waste topic because I worked with companies in Pereida and I worked in particular projects regarding solid wastes. That’s why it is pertinent that I’m here, and because the territorial vision is that I have.

**From your experience, speaking specifically of the agro- sector… Specifically for coffee and cacao, tell us a little about the current system or how it currently goes. What processes does the secretary have and…**

Well, coffee is the most important crop in Colombia. It is the only crop that has been exported continuously for 100 years and generating wealth. We are in a place, Chiva, in Colombia where coffee has left the mark of development, where the roads, the infrastructure, the cleaning of aqueducts, of sewerage, education, has been impacted by the coffee development. Therefore it is the most important crop for the coffee axis… from the 100 municipalities within the coffee axis, more than 80% the first place in their rural economy is coffee. Then, coffee is very important and based on that importance, the secretary works with the cooperative. We visit plots, I particularly visit coffee plots, to see how are their environmental practices in terms of adaptation and mitigation towards climate change. I, regarding cacao farming, know very little. I know that it can be stronger in other municipalities of the coffee axis and Risaralda, but I know very little about cacao cultivation. I know it is a crop that has the capability to capture green-house gases through the tree biomass but I don’t know further details nor statistics to know how much nor how, and well, that’s as much as I can go with cacao. I do know coffee better.

**You mentioned you work on one of the ten sections of work in the secretary that is …**

From environmental management in general for the municipality

**For the general environmental management for the municipality and you are in charge of climate change. There are some methods you perform… What methods or what are the basic methods you have in this specific area and which is the purpose behind these practices?**

Well, as the territory’s authority, the citizens expect follow up from our side. Therefore, If I understand the question, mainly if we were talking about a private or guild entity, for us the interests are particularly two. To achieve that agriculture has a low emission of green-house gases and for producers to adapt to climate change. Part of that adaptation to climate change happens thanks to providing them information on the weather conditions and meteorological conditions for them to, based on that, they can take decisions. Understand if it will rain or a draught will start. Let’s say that the municipality, in a process that goes beyond the agricultural part, delivers supplies, delivers technical support, helps to certify in good agricultural practices, GAP’s, and particularly I go a lot to the plots to do educational and sensibilization processes, and identification of good and bad practices they’re doing in order to give recommendations. That regarding climate change in a very punctual way, Daniel and Chio.

**Ok. From these basic activities, what are the main challenges, what are the main struggles with the current sector’s situation.**

The main challenge is to be able to transcend the simple technical visit and the information delivery, which is intangible, and to deliver them elements that are more… more… something that they can touch. Meaning, give them fertilizers, give them seeds. I don’t know, provide pluviometers for the to measure how much it is raining at their plot. I think the challenge is a little… what they expect is not for you to go and get a signature for an attendance list to legalize your work but for them to feel that you’re providing them plants, follow-up, connection with other groups that could buy their coffee at a better price. I’ve seen that the coffee producer in Pereida, particularly, is trying to get involved in more… in more… let’s say in more processes of the production chain. Not only to commercialize it but to get people to the plots to make tourism, like trying to finally generate more income. Which is what all producers seek. The producers seek to earn more money and sometimes production is not sufficient. It is a challenge because people will always expect for the municipality to solve problems and give away things and one as a simple contractor doesn’t have the capability further than simply visiting and provide information. There are no possibilities to provide more elements or to go and tell them “Here, take this” but only to tell them “Sign here”. Then that’s a big challenge because at the end they say “well, they’re visiting from the municipality. They provided information and made me sign, and left. And they don’t come back until the next month of the month after that”. It is a big challenge.

**A question that is tied to that, I think this is more regarding the personal intention and such; what improvements… what would you change or what would you improve if you…**

Personally?

**Yes**

I think that for the farmer it will always be very important to arrive with something. Always, always. To at least arrive with a bag of fertilizer, organic. That was reused, that made a reutilization of the carbon cycle and it is not the NPK, the triple 15, that when you are going to apply it, it won’t have nitrous oxide emissions, which is a green-house gas. That I think would be great, to help them a lot to reduce their dependence to fertilizers and agrochemical supplies. Through that way we are mitigating climate change and we are teaching them process in which they understand that the plot itself has the possibility to generate supplies in a sustainable way for the agricultural production. When you visit them right now, they’re all saying that the prices for all the agrochemicals went up. The bag was worth 80 and now it is worth 120. Then, it is great to tell them, look, if you make use of your residues, if you make composting processes, then you it is a good thing environmentally and you’ll also save money. That’s a winning formula right there. And if one can go and tell them, look here is a bag of an organic one, I don’t know, I brought you gloves, machetes. This sort of things is very important to them without leaving on the side that training them and giving them information is too, but sometimes what can be touched by them is very important.

**And following the same line, which is perfect the way it is presenting itself, we are going into the topic of sustainability. And there is a first perception there, regarding sustainability and the sector, coffee which is one of the you know the most. What are the challenges towards sustainability in the sector?**

There are many. I think… I would start by the social one and it is the generational turnover. In the fields people is getting old and there are few young people that are staying the plots. And that something that has been tackled by the secretary. For the young ones to stay at the plots. That’s the first challenge. The second one is the topic of specialty coffees that have been gaining interest. And it is that to the extent that your coffee gets a better cup score then they’ll pay better for it. Instead of selling the *pasilla* coffee or *ripiado* coffee. Thirdly, and this is a very climate change related one, we’ve been having 2 years of rain excess and that rain excess lowers the quality of coffee grains and in many cases, it is also causing production loss and reducing the efficiency. The rains are impacting a lot the coffee cultivation because the coffee cultivation requires of a hydric stress of at least three weeks or a month, when it doesn’t rain, for the grain to bud. Given that it is not happening, then that is impacting coffee cultivation a lot. And well, finally, coffee has a particularity. It is that it has a very strong guild institutionalization behind it that other producers, other agricultural sectors don’t have. Therefore, that strong institutionalization of coffee, well, helps them to have better adaptation processes because it allows them to access to technology exchange and to acquire experience from plots that are achieving through grafts or through coffee species that are more tolerant to rain, to resist against the climate changes.

**From the municipality, are there activities that promote the sustainability in the sector? Specifically from the secretary…**

Yes, yes, yes. With the certification of good agricultural practices, and as in all the topics of innocuity and hygienic crop handling, I think that’s where it is the most. Let’s see, let me think. I think that it will be that. The follow up through the certifications they have to do, sometimes some other certifications for fair trade, the secretary follows up there, but I think it is most by the coffee cooperative and the coffee committee. I think that there it is important to have communication with the coffee cooperative because they’re very involved in the topic of fair trade. There are many stamps that right now I can’t remember their name, that follow the farmer accomplishes the required standards to be able to say “look, my coffee complies with one, two, three standards” and then they can get paid more.

**Yes, we are following all the path…**

There I have a friend works on the environmental part within the cooperative, in case you need the contact information. I mean, having in mind to respond that question about sustainability.

**Ok. Well, getting more into the topic of the project that Siban and Susan are developing, which is the topic of energy production, have you managed or have you worked with… have you had experience with bioenergy projects? From the…**

Bioenergy projects?

**Yes, in the secretary.**

No. Unfortunately, not. And well, we are going to get ahead. I’m going to get ahead. The truth is that the topic of utilization of organic residues, biomass, energy generation, has been very little, very little. Here, it is more likely regarding biodigesters but for excrement. But for organic residues, no. There is a very low rate of utilization of organic residues. And I think that one of the things you’ll encounter about the utilization of organic residues are going to be very focalized by ranches or punctual experiences but regarding if there is a chain of producers that organize to do and utilize residues… no, no, no. And here there also aren’t things on renewable energies nor on bio… nor on biofuels. No, very little. And from the municipally, even less... Nothing on renewable energies.

**Here comes a combined question, based on the experience you have, and it is why this situation presents itself plus what are the challenges, if there are any, around this.**

Let’s see. What’s being made in terms of renewable energy, is being made by the Pereida’s energy company. The Pereida’s energy company belongs 51% to the municipality and 49% to privates. And they have the largest solar farm on mountains slopes in Colombia. And the bets on renewable energies are on that solar farm that provides the 5% of the city’s energy, and on electric mobility. That’s the only thing you will see at a city scale. Why? Because, and this is hard to say, but unfortunately, we are still lacking in applying or having a more ambitious vision for environmental management at the city levels. It is an expensive topic for which there are not resources and that is seen as something important but that in practice is not being advanced on. Therefore, Pereida still has to advance in the utilization of its wastes for the generation of energy and such. Then, I don’t know if it is a lack of vision but it is at least a lack of resources. And actually, in the 10 processes for environmental management that I have mentioned before, renewable energies is a topic that doesn’t show up much yet. Then, the topic of climate change is a topic that has positioned itself from the year 2016 until now. Until two years ago it was only me. From two years ago to now I have a work team. I have a coworker here and two others in planning. I think that it will to jump forward but for now we are in diapers.

**I’m going to show you this graph. This is the project that Siba and Susan are presenting. They’re called Biohubs, which is a win-win project. We will understand this green area as the producers, or the rural area, and that‘s where the biomass, which will be used or taken advantage from for the processing and production of bioenergy, would come from. Now, there are two key stakeholders that are the producers and the biorefineries. Ahead I will ask about biorefineries. But then, the biomass would be collected in a biorefinery, from the process being promoted in this study by Siban and Susan, which is thermochemical. It is a thermochemical process where biomass is subjected to temperature and pressure, and the result from this process are four elements: gas, water, carbon, and crude, where the gas is energy, the carbon is energy, the water is used for the thermochemical process itself, and the crude is the main objective, would be used for other elements. Specifically, for this case, would be use as biofuel for the naval sector. This has some significant challenges on quantities, on logistics, among other things, but this is a large-scale map on the project that Siban and Susan are developing. Now, regarding to your experience and this broad radiography… Firstly, can you imagine a new value chain with the utilization of cacao and coffee residues in this case, for this purpose?**

Yes, yes. That it is not being made, doesn’t mean it is not viable. I think that, yes, I think that there is a great potential, and I think that the logistic chains in our region are strong. Pereida sits in a triangle. Bogota, Cali, Medellin, Pereida. And there are ways, there are highways, there is culture, network work between institutions, then I see this as very pertinent and, since we are economies with a strong rural component, very forestall, all the supplies required are there. I think that we are missing to assemble many elements from that system. But I see it super pertinent, super necessary, on top of that. Because this would help us do climate change management. Then, my vision on this is that it is super necessary. And it has been done it doesn’t mean that it doesn’t work. What I think is that it has failed by making it at the macro level. But at the micro level there are a lot of experiences of people who are taking the advantage from biomass and I know of people who… I mean, this is seen but only on the small scare. Obviously not for biofuels for the naval sector, yet. But I do feel that this, with a very structured vision, would be a reality and would be, I mean, we have to go towards this. I don’t know if we’ll do it in one, ten or 50 years but we’ll get here at some point. All our economy, all of our territorial configurations allow for this.

**There is an additional question conformed by three elements and it is. If this system was to exist, of if this system emerges, what are the challenges for this system. What are the benefits and the wrongs?**

Challenges… The challenge is, I would say, the institutions. To align the institutions is the first challenge. And when aligning the institutions to align the guilds, farmers and private ones. If we manage to align those two actors, it’s done. The benefits… Social benefits, environmental benefits that you know as well as I do. Environmental ones on the reduction on the emission of green-house gases, the reduction of residues that end up in landfills. On the social aspects the employment that could derive from this and economical, of course the money that would come from this and would move the economy. What was the other?

**The wrongs.**

The wrongs. Well, I think it is more related to the administration of this, who it will end up benefiting but if it is done correctly, I don’t think there it would have many wrongs.

**To understand the… and I quote of the challenges you mentioned, to align the institutions, do you envision the role that the secretary and the municipality would have in this?**

Yes. Our role in this would be to connect the agriculture with the universities or with the companies that decide to take on this project. The municipality, we are a bridge. We are a bridge because, at the end, the municipality does not produce cacao, does not produce coffee. Therefore we are like a connector. Come together 1000 producers, get united, and give a path. Give a path by well, we will get involved in this, we need to make these changes, present these reforms. Present the residues in this way…The logistics, the day’s count… Here is this other company. Our thing is to connect. I’m not at the municipality at the end of the day receiving the money, or anything. To connect. To connect. To help generating the network. And also providing the political context. Since it is of interest for the municipality for this to happen, we are going to provide these resources to connect the producers so that your residues end up here in the way required to be used in the project. That’s the rtole I see for the municipality.

**And on that line, what are the benefits that the institution would get, in this case the municipality, from this project?**

We come back a little to the same thing. Social ones in terms of the producers, well, we’ll have to see if the producer will receive something from providing his waste or if the benefit is on the fact that the producer stops paying for someone to collect his waste and now just hands it in. I think that the major benefit is the environmental one. Because if the municipality is able to demonstrate that it is improving the handling of solid waste and the improvement on the management of climate change and also to show that it is advancing in topics of renewable energies, which we don’t do now… The biggest benefit for the municipality is on the environmental topic. Particularly for this secretary. Maybe another secretary will be able to say that it is moving the economy, it is producing this much money, but for us the benefit is environmental because we are going to reduce the disposal of solid waste, either in the inadequate way or as landfill.

**Here is a scalable question and it talks about what stops the institution from developing, I mean the secretary and the municipality, what stops it from developing a project from this?**

It is stopped by the fact that it is not in the development plan. If these things are not in a development plan, which is like the major’s roadmap there is an impediment in terms of the vision for the development of the territory and therefore in the canalization of specific resources for this purpose.

**I’m going to retake a little that situation around the impediments for the realization of this project. If this project, a project like this, enters in the development plan from the municipality, what could harm that plan or that intention to develop a project like this. What factors might affect for it to be done?**

If this was included in a development plan, it forces the municipality to direct resources for it, and after it is in a development plan the municipality has the obligation to reach a goal. What could damage it? Corruption on the allocation of resources or the lack of unity in the professionals that develop this type of projects. Those are the two most punctual things. Which both of them are very possible here or in any other part of Colombia.

**In that case, keeping on this line, in that case… In a hypothetical case, there is a question which is more… I insist, in the hypothetical case, that situations that affect the development of such a project would harm… Or how could the relationships between sectors break up if these impediments show up?**

Well… At the technical level, I didn’t mention it, at the technical level something that would impact is that the presentation of the residues wouldn’t be the adequate one, because that is one the difficulties in the topic on the utilization of organic residues. Because you might have a pile of residues but if this other residue ended up in that pile, the pile is damaged. That makes it, in technical levels, hard. And there is a culture on the separation of the sources that is very important to internalize. What would harm this? I think that the conflicts between the directors of the institutions. There are institutions that have directors with a very… lets see… very… towards the self-protagonistic, ego-oriented political agenda. What I’ve seen during my work in other regions of the country and what I compare to this region is that you can feel that a director of regional corporation, a governor, and a major can sit down, put their differences aside and delegate on their technical teams for the projects to advance. Something that sometimes you can’t see in other regions of the country. What could make that difficult? That they couldn’t put those differences to the side and that at the end a director or a mayor might want to shine and therefore, overshadow another institution. That’s where I might see some limitations that could harm that kind of project. But in general, these projects are very well received because, at the end, it is useful for every institution to show itself and say “look, we are cooperating in an international project doing this nice thing’. I think the risk is not too high but at the end all of this translates into an issue of resources. If this has resources, we say “if there is silver for this” them the mayor, the governor, the director of the coffee committee and everyone are happy. “Ah there is silver for this, where do I sign? How do I take my picture?” and that’s it. But that’s my vision on the topic. At the end it is a thing about resources. There we have to mention, like I mentioned at the beginning, *Biorganicos del Otún. Biorganicos del Otún* was an international cooperation project with European resources, very ambitious, very positive, but why did it fail? Because of a technical issue. A technical issue related to the issue that the residues that arrive to the processed didn’t arrive clean. And by not arriving clean, technically, the process fell down. Therefore, the technical part is very important in this because I think that the institutions are very open to this kind of projects and there is an institutional and political context very favorable for these projects to take place. But if the technical part is can’t guarantee for things to work, at the end they will fall apart.

**In that same parenthesis on *Biorganicos (del Otún),* what residues did they handle? What size did they have? During what time, meaning during what year?**

Only organics. Big. That was around the year 2005, 2006, and the issue was that it was like a plan where the dump truck would arrive to unload the residues and as I told you, when downloading the residues, they didn’t calculate the amounts correctly and when they arrive, firstly, they weren’t capable of processing it and, secondly, they didn’t guarantee that they were clean. When they realized that they had a contaminated dump truck, then it was like “who will take it away? No, put it there. Who will take that away? There is nowhere to take it”. By not guaranteeing the ideality of that raw material of residues, that’s where it all started to fail. And at the end, they weren’t capable of correctly realizing the role of every actor in the process. Biorganicos del Otún was a project with all of the potentiality, I would recommend you to look further into that. My recommendation for you is to seek talking with someone who was directly involved with Biorganicos del Octún. I know someone who worked in that, I can recommend him to you, too; because it is an experience that you have to uptake. It something that was already done with millions of Euros and didn’t work. And it is very important to understand what to take, and what not to take for this, and that is very important because that was already tried and it failed. And why did it fail? My vision is that it failed because of the technical aspect. But someone with more intervention might have more ideas as to why that didn’t work here in Pereida. That is something very important to take into account.

**Ok. To continue, I’m going to show you this grid. In this grid are the actors that intervene in the coffee sector. There are also the ones for the cacao. They’re the same just one for the coffee, one for the cacao. And it shows how is the interest-power relation and what is the positions and the roles that they play in the sector. Within these sectors there is the whole government part, national, regional, municipal. Indeed, the producers, when the topic on transport is discussed, this transport is whether from the rural area to the biorefineries or from the biorefineries to the… and the disposition of the biomass. Meaning all the logistics side that involves the processing of the biomass or the later developed product. Reviewing these positions which are a hypothesis, first question: What authors are missing or you think should be included in this grid?**

I think that if it fits, the civil sector, the society in here. I don’t know if it is pertinent because I see different levels of public actors, of private actors or guild actors, actors from the academy, but I don’t see actors from the civil sector. But I don’t know if that is because you haven’t considered them or because they don’t fit. I don’t know if, for example, when we speak about cooperatives are we talking about… The coffee cooperative… For example, we follow up a group called *Haz café*, which is a group of coffee producing women. Then… I think that here there are some topics that we, as men, sometimes we don’t realize, but I’ve seen it in projects I’ve taken part in. The gender topic is every time more important. There is a group of… Here there are two groups, *Entre verdes* and *Haz café*, which are groups of female coffee producers. I’m saying this taking the risk of it not being pertinent. You might say “well, that’s not pertinent, that doesn’t apply” but well, I’m… To add something that I don’t see here. And truth is that women, in environmental topics are very important, because women are more self-conscious regarding the topic of the correct disposal of solid wastes, and have more sensibility towards environmental issues. Is the only thing that is see is not missing there… That is missing, I mean. The rest is ok. I don’t see what other actors could be missing there.

Well… I don’t know up to what point… I’ll tell you something, you can later decide if it is pertinent or not and it is, control entities. Why? Because when you include a control entity, attorneys, accounting, a control entity is telling the municipalities or the governments “hey, the law, any of the environmental samples say you should be doing this. Show me what have you been doing” “oh, no, I haven’t done anything”. Therefore that is where the control entities often push the governmental entities. For example, in my case, the attorneys tell the municipality “Hey, on climate change, what are you doing on global change?” “No, nothing” “Oh well”. A different thing would be for it to say “Oh look, I’m doing a project for biomass extraction and this will help me to reduce my green-house gases emission”, “ah well, ok”. This kind things, if they work, then a municipality show to the attorneys, “look, this is what I’m doing” and they will say “Oh, ok, we’ll leave them alone”. Or “oh, they’re not doing anything. I’ll start an investigation”. Therefore, that’s an actor that often, by the hard way, it pushes the work of the municipalities.

**Ok. Now, regarding this disposition of the positions. First question, is the consideration of these positions correct or not, and which ones would you change? Which of these actors would you move regarding power and interest?**

I like it, yes. Let’s see, let’s see. I would say that… What are the communication platforms? What do you understand by that? Press or what? What do you understand by communication platforms?

**Within the idea and development project they have is the cluster, ok? And the cluster communication within all of the different actors. Where it includes, of course, the press and the different actors.**

And the biomass collectors, who are they? Like a logistical operator collecting?

**Exactly.**

I don’t know up to where they could have more power and interest. Because the biomass collector is fundamental in all of this. I think that the biomass collectors could have more interest and more power. If they do their work incorrectly everything else falls down. That’s my perspective. I see they are very low in both matrixes. Well, quadrants.

**And the rest are…**

Yes, they’re ok.

**Is the position of the government ok?**

What about the position of the government?

**If it is ok.**

I think it is even more important for the regional and local governments than for the national one. Obviously, if a national government injects money… The power is ok but I think the municipalities you could move them more towards here, because they have the interest. They might have less power but more interest. The local governments. The regional governments… Look, I’ll tell you something. The governorates have almost no money. The governorates don’t. I would put the governorates lower and let’s say, these two I would put them more towards here but I would also lower them a little more. And they, and the national government high power but low interest. It is true there are many projects that we don’t do because there is no money. Here, look, parenthesis. I participated in an analysis of pre-viability for a waste-to-energy here in Pereida and the idea is that the residues are transformed into energy with the waste-to-energy process that you might be familiar with. It is a project that is worth 250 million dollars. A municipality will never have the money to do that. If a national government doesn’t help it, to connect it with financing sources, a municipality will never have the money to make a waste-to-energy plant. Here, the largest infrastructure project in the history of the city is the waste water treatment plant and it is worth around 90 million dollars. And that is a project humongous. The largest project in all of the history of the city of Pereida. Therefore, a waste-to-energy plant, which is a very good thing, there is no way to do it. And that can only be made with resources from international cooperation such as the green climate fund or something huge like that, where the international community gives you money because you know that it will reduce green-house gases by the bunch. Then my recommendation is less power but more interest and the rest is ok. And that’s it. I think that the biomass collectors could have more interest and more power. That’s my vision.

**Unintelligible comment/question from the English speaker. I think something about *Semicafe.***

It might be more power and less interest. Well, semicafe… Semicafe is research, so I don’t know up to where they have resources. Fedecafé is *unintelligible* from the coffee producers’ federation. I think that regarding them… They don’t have the sufficient environmental consciousness. Here the economic matters the most. If this gives money, good. If not, let’s not people to vote *caspa*, like we say here about that.

**Do you think that the positions, that these positions change depending on the departments? Or it could be…**

No, it is the same, it is the same. The institutional system is the same, the resources are very similar. I see it similar for Quindio and Risaralda.

**One question, from the secretary and the municipality, with which of these… Well, you’re here with which actors do you relate and how is that relationship?**

With this one, with this one. With this one. With all of them… Let’s say, not with this one, nor with biomass collectors. Neither with biomass refineries. Let’s see, our relationships are with other public actors at different scales and with the production guilds. And they’re good relationships. They’re good relationships but they are weak economical relationships. The municipality makes agreements with Fedecafé, and gives more money to Fedecafé to do more things with the producers but, surely, it is not sufficient resources. We come back to the same thing; it is an issue of money. Like he said, he said “ah from the 100% we do 15”. That’s why, because there is no money.

**Unintelligible person speaking in English away from the microphone, followed by: Here is my question, does good relationships mean that whatever they propose a project they will participate?**

If these relationships are maintained further than the project, is that what he is asking?

**If they propose a project, they will immediately participate or they will be like “no, I need some money, or…?**

I do think it changes. Let’s see, one thing is if these relationships emerge for projects of productivity reconvertion… If these relationships will emergence for topics… Let’s see, for very economical topics, or very environmental topics, they can change. Because, in reality, the environmental is still not that of a priority for the decisions makers. So if we are gathering these people because we are going to make a big coffee processing center or we are going to focus all this people to produce specialty coffees, the relationship is of one type. But if we are gathering these people to do residues utilization, it is possible for the relationships to change a little, it is true. If the project is economical, all of this people is in. If it is an environmental project, some might say “yes, kind of. I have two pesos”. So yeah, it would change.

**There is another question I didn’t ask before and it is about experiences or knowledge around biorefineries. Do you have, do you know, from the municipality? From the personal level?**

No, nothing. About biorefineries, not here. When I worked at the university, I learned about a process on pelletization for guadua pellets, for energy generation. But that was from the university. From here? No. From the municipality, nothing. Zero. Nothing, nothing.

**Do they have any specific policies for green-house gas emissions (*unintelligible because of car horn*) centers or agricultural practices. Do they have any specific policies on that?**

If they have special policies for the reduction of green-house gases?

**Specific ones. In the agricultural sector.**

Let’s see. How to say it. No. Colombia signed the Paris agreement and like all the countries, it has the CND. The National Determinate Contributions. And every city has its input to the national determined contributions but for Pereida there are four. There are four main initiatives on that matter. Smart public lightning. Waste water treatment bus. Megabus… I mean, megacable and mega bicycle. It means, transportation, sanitation, and energy. But not for the rural sector. In Pereida there is nothing like that. I mean, there are policies but not for the rural sector. In Pereida. In Quindio I think there are.

**And for, let’s say, your honest opinion. If this is the project we are proposing, which actors would be supporters and what, who would be toughest to make participants?**

About this project being rejected at the local level?

**No, more than that, being very honest, if this project was to be presented, who would support it? Who wouldn’t support it? How would they support it? Who would be the…**

At the local level?

**At the national level. Both. Oh ok, at the local and national levels.**

I think that here there are three ministries. The ministry of the environment, from the climate change. The ministry of housing, regarding the residues and the ministry of agriculture. Here who would help it? I think that none. Because it is about putting money in. It is about money and there is no money. There is no money for that. There is no money. The success for this is to get into a development plan. If this makes it into a development plan, we have to put money into it. If not… It won’t further than meetings, unfortunately. And it is very hard to say it, working on an entity like this and saying that but, look, four years ago I participated in a project called something like *CompostPereida* and the idea was to make compost from the trimming residues and from the ornaments of the city. Making a compost from green residues, let’s say. From everything generated from trimming trees, grass. Which is supposed to be a clean residue. And as such the project was economically feasible. For this project to work there has to be a will. National, for the resources, and an international follow up, obviously. And for the municipalities to include it in their development plans and for them to say “this is important and we are going to direct some resources for it”. Otherwise, no. I would expect that with the next government, the next president that has a big bet on climate change, this might have more relevance. But if you ask me who might support this today, they would support it by word and time but there is no money for that, unfortunately. It is very honest, raw, but real. And sad.

**Unintelligible English conversation. When they start a project, what are the biggest challenges or obstacles when doing a project? Is it the mindset of the people, is it the interest or is it the last of interest. Because let’s say, you discuss in a table and they say “yeah, I’m *unintelligible”* but then in reality they don’t or something changes. Is it the mindset?**

I think it is the income. Because he is saying “lack of ingress”. This at the end is an economical issue. The *toganes?* know this is something important, that we have to do it. That if this is made and it works it will be marvelous but everything has to go through the economical area. Unfortunately everything the economical aspect for the environmental things is very little. Both at the national and regional level. The environmental budget of a municipality, I think not. It doesn’t go further than the 5 – 10%, for the environmental issues. That’s why this requires of leverage and requires cooperation derived resources. Because when these things have leverage, I think that there even is political will and the institutions are available but this is and economical issue. Because there is no economic activity, no income that supports the kickoff. There is nothing.

**Unintelligible English conversation. It is a compound question. From the projects you have worked on. Who have invested in those projects? And who would be a potential investor?**

For me, the potential investors would be the operators from the cleaning services. The people who right now have the trash or the solid waste business who are currently the providers of the cleaning service, would be potential investors. In Marisales, the cleaning operators are called Peolia. Peolia is a French company with operations in more than 70 countries. In Pereida the service operator is called Interaseo, which is also a multinational but smaller. In like central America and south America. Here there is a very deep issue and it is that the Colombian norms on solid residues makes it cheaper to bury than to take advantage of it. And logistically it is easier for these operators to take the residues to landfills than to have the logistics to take advantage of it. But that is slowly changing but there is still a lot missing on that. I think that if these people, who have money, could see an opportunity to get involved, they would be the potential investors. As private agents that could say “this is a business and since I’m in the trash business I could get involved”. I can see them there. But from the rest, I see no one. From the public sector, it is likely that the investment you could get is very low. For me the investors… For me, who we should get the attention from are the operators of the cleaning services because they already have the logistics… They could be the biomass collectors. They have everything to be the biomass collectors but, well, for now they are not interested in this. It is not logistically attractive for them.

**From your experience as an environmental administrator, the work experience and the experience on projects using residues, and that perception you have about burying the waste as being cheaper than transforming it, and understanding too that there is potential, there is a lot of potential on the transformation of residues, not only economical but also social, environmental, meaning the impact is very powerful, what is missing for these powerful companies such as Peolia or Interaseo to get into this?**

What are they missing? The will to do it. The will to understand that there is a business equal or bigger to what they are already involved. Peolia is more… I think Peolia has a better will for that, but not Interaseo. I think it is the management vision these companies might have. That’s what they’re missing. They might say it is not their core. That their core is to bury the trash and taking care of this kind of residues and that’s it. Urban residues and that’s it. Which is what gets them money. Maybe these companies, with some support, they might be able to see that these types of residues are a good business for them but otherwise they will stay like that.

**Ok, to finish. They have graphic where they have the coffee grounds, the pulp, the coffee hood, the waste from the trimming and the shells; in a biorefinery they would produce these four elements that I mentioned before. Water, gas, carbon and crude, which are energy, the water would be reused in this process and the crude, which is the element they are specifically interested in would be taken by the naval fuel sector and for the aeronautic sector. Additionally, other sectors could be impacted such as the bioplastic one, adhesives, the makeup, aesthetic, cosmetic, fertilizers like you mentioned. Textiles, wheels. The applications of this crude are broad but first we have to achieve the recollection of this biomass to achieve its transformation. This is the main issue which is what we have been discussing for a while. That’s what they want to achieve with Biohubs.**

To generate that.

**Exactly.**

This can get to this.

**Exactly.**

That could ideal. That would be circular economy.

**Like you mentioned, there has been some shy projects to try to achieve something like this but they have been frustrated on the way by one reason or the other. Still, the proposal or the intention is to achieve it and to interconnect all of the sectors for a larger benefit. To finish, the 28th of July, there will be a fist analysis made on the results obtained in the process and you are invited by means of Diana. You will receive all the information required for you to participate. It will be in a workshop setting, it will be a joint effort with institutions, producers, to see how far it has reached and what is being made. And nothing, thank you for the space, for the time, for the answers and if you want to add something else.**

What would I add? That this, not this… The utilization of residues is being made in a very local way or particular, or punctual. But this system, making a cluster for everything to work, this hasn’t been done yet. Is it necessary? It is very necessary. Is it important? It is very important? Should we do it? We should do it now. If I was a decision maker I would but the bet on it because, well look, it has everything that could work. How something that is residue could transform into that. And well, my view is clear and important but the problem is that the ones who make the decisions don’t have the environmental education and don’t have an ambitious nor clear, nor urgent vision that all of this will help us to face climate change. And this also has been proved to work. The problem is that organizing this is not something easy. Then I think what you’re doing is something very important and hopefully this will have a good outcome and at the end, the ones who make the decisions see it as something very important because the truth is that this is a very good project, I love it, with all pleasure however I could help, if I can connect you to anyone. From my side there is complete disposition to give you follow up on whatever I can. Thank you very much to you.