**K2 - Interview - SENA - 7-7-2022**

**Specialties/difficulties:**

* **Extensionista: as with a previous translation, I still don´t know the proper translation for this word, which someone who promotes development**

**You already gave an introduction about SENA, could you introduce yourself?**

My name is [name], I am an instructor from the Agroindustrial Center at the Quindio Regional SENA. I was delegated by the subdirector of the center as the dynamizer from the Escuela Nacional de la Calidad de Café.

**How many years have you been working here?**

10 years

**So, you talked about the Escuela Nacional de Café and you said there´s free courses for producers. How many producers come here for those courses?**

SENA has the characteristic that its trainings are totally free. They are there for businesspeople and any other person can come and train in certified professional training programs or for complementary short courses. Monthly, around 600 people are trained here, that is talking about daily attendance. We have 3 training times: morning, the afternoon, and the evening. Even on weekends, so the training is very open and made so that anybody, even if they work during the day, they can come take a course during the night or during the weekends.

**How much time does a course take?**

There´s 2 ways: certified programs, those are technical courses and take 18 months. There are short courses, very specific ones, that take 40 hours. Those hours can be distributed in 2 months.

**How do the producers know what can be done here? How do they get to SENA?**

First, SENA was born in 1958, it is a very old institution in the state that people already know. We have 3 buildings: one at downtown – which is the commerce one -, this one is the agro-industrial one that we share with the Building Center in a single place. So going to the centers, because people already know where SENA is, people go there and are informed about what is offered regarding trainings at each center.

But also, there´s the SENA website and a platform called SOFIA, in which people who knows about that kind of stuff can access the courses.

The other way is institutional social media, that each regional management has, where periodically information about the offers is posted.

So, we have those 3 ways of making information available to the general public about which are the courses that we have.

**You also work with associations, cooperatives?**

Yes, SENA has a program called “SENA Emprende Rural”. That program reaches the rural zone from Quindio municipality. It is a nationwide program. That program is the one in most direct contact with the associations on the municipalities. Those associations are then involved in trainings with that program and when they have specific needs, they send them to us for training.

**For those courses, the producers come here for the training? Or you also go to the farms?**

Both. They can come here get the training, but we also have a mobile laboratory. Mobile classroom. With this classroom we reach all the municipalities. Inside it has all the methods and everything that is required for the trainings. Instructors go to those municipalities. Previously we have already made the offer; we go to the municipality and tell them, “Look we are going to be there with the mobile laboratory for a month, pre-enroll the people that you want them to take a course and tell us which course”. When we get there, we have the people ready, and the instructor trains them in the specific course that they require.

**What are the main challenges in the coffee sector?**

According to me? First to achieve that the business is appealing enough so that the sons/daughters of the current coffee landowners can continue. For me that´s the main challenge because, what is happening right now the way I see it? Land in the Quindio department is very expensive, so if I were to inherit the farm, I do a very simple economic exercise, I would say, “If I stay in this farm to produce a crop that maybe won´t give me enough to live well, it´s better that I offer the farm for selling and I will get a lot of money” - because land is worth a lot due to the touristic aspect of the place and its small size –. That person has the option to sell it or say “It´s best to switch the coffee growing and instead put an agritourist hotel”. So, to me that´s the main challenge: more than the technical part, which is also important, to me the challenge is to get young Colombians to continue with the coffee tradition. That´s one of the main challenges.

Regarding the technical aspects, we have a lot of things to work on. One of them is climate change because of what I said about how the temperature increase in all the coffee regions has displaced all the crops to a higher thermal floor, avoiding plague such as the coffee borer beetle and blight, which is a fungus that affects a lot mostly on susceptible materials. Adding value is also a challenge. Coffee grower´s culture is very basic. Coffee growers still use processes from 100 years ago and hasn´t changed precisely because their culture level has not allowed them to evolve. What we need is that the culture level of the owners increases, but also that they stay. Because coffee has provided enough for the sons and daughters to get an education. So, if I´m the coffee-farmer father, I provided enough for my children to go to university, to Bogotá, Medellín, Cali, he/she studied engineering and now has a different vision. When they come back to the farm they say, “This is not profitable for me, I´ll continue with engineering and I´ll sell the farm”. So, that´s what is happening. What do we have to do? That when they come back to the farm, they see that coffee can be a good business not under the traditional vision, but as a business with an international reach, selling coffee to other markets, being the own manager of their product. Do not sell it under the traditional perspective. So, the challenge is to increase the culture level of the coffee growers, but at the same time make the business attractive enough so that the professional stays here. We have to work on that from a lot of fronts: commercialization, supply chain, adding value, all those aspects.

**What is necessary for the young people to stay? What do they need?**

I would say that it is important to contribute for young people that are from marginal coffee zones that are far away can get education in careers related to the sector. First is for them to get in, because a lot of the young people in the field do not get in, they stay there as collectors and that´s it. The idea is that those young people have enough support to come all the way over here, get an education in a career such as the ones we have here, and then they can return to the farms to apply that knowledge. We need support not to access, but to facilitate moving around. Right now, there´s NGO of Colombian businesspeople that live in the USA, and they called me and said, “Diego, we want to, somehow, return the success we have as coffee growers here in the US by supporting the young people that are there”. Here there are young people that get into a technical career, if they are 30 only 10 finishes. There´s a dropout rate of about 60-70%, people that begin but do not finish.

What are the main factors on this? A lot of them are economic in nature. If I live in a town or municipality like Calarcá or Pijao, I would have to come all the way here, pay for transport, eat, pay for my way back. That routine for almost 2 years, they cannot take it. As soon as something starts going bad or they lose a competition, they dropout. I think we have a good number of young people that want to study, but there are transport-related difficulties. In here transport is not free, we must pay. Even if education is free, transport is what is an obstacle for young people to get their education here.

That´s for the ones who come here, there are some others who don´t even come. They are in the farms, and I was telling unintelligible, “Let´s go there to check out how the rurality is organized, or even the people from the municipality, and show them the options that they have to come study here”. So the options are not only saying like, “Go there that you have free education” but more like “Let´s see how we can help you with transport, so that you come and go, with food as well”. I worked as an extensionista for the Federation for 4 years and I realized that parents said, “You are here to help me in the farm, if you want to study go ahead, but I cannot support you because with what I produce here is enough”. Then the son says, “How will I go there without any kind of support?”. If those support models worked, the generational replacement could happen in a better way. That´s what I think about all this.

**So the courses are free but there are still obstacles for people to participate.**

Especially to them, kids from the field, because if they go from the farm to the town, they have to pay transport, from the town to Armenia – which is the capital city – another one, and from Armenia downtown all the way to here you pay a third one. And that is times 2 because they must go back, so six. Add to that food. To the ones in the certified courses, we ask to wear a uniform, a shirt, some trousers. We are a bit like traditional professors. SENA tries to discipline a bit the students because they come from a 1 or 2 stratum, so we need to focus on rules, that they obey the rules. That we have some guidelines. It is not like in university where one can go as one pleases. Here we know that they come from harsh backgrounds, so we train them using rules. That involves using a uniform, which also involves a cost.

Here there is a department of “Bienestar al Aprendiz” and from the different groups we identify students with the greatest economic problems. We give them a stipend and we give them food, but that is not enough because the number of students is very high; in a single day we can have in the whole place 2000 apprentices. That´s a lot of people and we do not have enough for everyone. There´s always some that are excluded and perhaps they are the ones that end up dropping out.

**Do you also receive the parents of these young people here to take courses?**

Yes

**That older generation.**

SENA has no age restriction. People can come here since they are 14 years old up until 80 years old. There are no barriers. That´s for short courses. For the long ones also, but they must have at least until 9th grade of high school, they need at the minimum high school to be able to get in. So, there are no limits, none.

**Are there a lot of people from that generation that come here? What´s the percentage?**

It depends, in long courses, I would say that 90% are young people around 17-18 years old up until 25 years old, and some 30–40-year-olds, very few. In short courses unintelligible, made more for businesspeople, around 40-50 is the range. So, for short courses there are adult people, for the long ones, young people.

**How is it done? Because perhaps there´s a difference in their level. Perhaps there´s a person who only studied until elementary school and there´s another who may be studied a bit more. How do you handle that in the courses?**

Yes, that´s part of the challenges that we, the instructors, have. There are learning styles and paces, as well a previous knowledge. As instructors, what we do on the first day is to make a diagnostic about what is the level of knowledge on a specific topic of each one of the students. The least number of apprentices there is, the easier it is to get everyone to the same level. Nevertheless, in large groups, that ends up being a bit harder. That ends up generating segregation, the people who come with little knowledge will have a harder time, but that is solved with the desire that the person has. Here we are very open and say, “If someone is having trouble; study more or ask me for extra hours to get you to the same level”. So, that´s what normally happens: the people who really want to get the education and get the competencies will achieve it thanks to our flexibility. In here it is not like university where they enter at 8 and leave at 12. Here the students will say, “Professor I have some trouble with roasting curves” so we make an extra space for them and teach them how to generate that curve. Besides that, the evaluation method at SENA is different than the one from university: here they get competencies and in university they pass with a grade. In here, until the students are not competent, I will not certify them; they either pass or not pass. So, when the trimester is over, in their evaluation it´ll appear as “Not passed”, so they will know that they haven´t got the competency. So, with the instructor they propose a plan to get that competency. Until they don´t get it, they don´t pass. There are many chances that allow students with a lower level to get the competency. That´s how it works.

**Before you´ve said that you worked as an extensionista of Fedecafe, what is the difference between this and their information, and SENA?**

It is totally different. The rural “extension” is more of a whole concept. When doing “extension”, the technical part is the last part. The first thing is to know how the family is conformed, how do they live, what is their socioeconomic level; it is more about understanding the family and the community´s logic and at the end, one introduces the technology that the Federation established. For example, back then it was about rejuvenate coffee plantations, so I first understood the family and when I understood them, I said, “This person will not rejuvenate, they lived to the max and don´t have money to do it”. So, when I proposed, “Do you want to rejuvenate” he told me everything he has already told me before, so I knew that they would not rejuvenate the coffee plantations. But from that difficult scenario, I proposed different alternatives, “There are some lines of credit, some incentives”, they thought about about it, some said yes some said know and we achieved that conversion. So, that´s the way of visiting farms with the “extension”. In here it is not. Here it is not only technical – because we also work with the “being” - we care about where they come from, their formation process, their personal presentation, soft skills, behavioral and the rest is the technical part. But if it´s something aimed at generating competencies, because that is the goal of the student: they come to SENA for me to help them train in this career. Extension is more integral.

**Do you also work with things related to sustainability in these courses?**

Yes, this center has an agro-industrial, environmental, and quality vocation. So, regarding the environment we have courses on environmental control, in ecologic agriculture and in the integrated management systems – which is other of our programs– there are 3 components: quality, environment, and safety and health in the workplace. I am an instructor of the environmental part; I teach environmental legislation. So, the center is focused on that the education have implicitly the environmental component. We are totally convinced that if we do not stop this, with the crazy production system that we have, we will collapse. So, all the institutions are in on the logic of protecting the environment. And the competencies as well, they have environmental elements in them. With coffee we know how to make the ecologic processing, handling the waste in the threshing and the roastings. This center has been characterized for its certifications, we like to get certified, because those certifications put us to the level of compliance with the environmental and quality norms. That´s a way within the administration to manage ourselves on things about the environment and quality

**Regarding waste, what do you do with them right now?**

Coffee waste normally is the pericarp, the peel. What we do is compost it, one part we take it to the vermiculture to get hummus and use it in the grass, coffee, and bananas plantations and in other vegetables that we have. The other part we just put it on the crops with no other processes, only use it as compost. The threshing husk, that “cuticula” is used for silage for livestock, it´s being crushed for silage. More in this time that the global situation due to the war has made the agricultural supplies very expensive and that has limited us a lot regarding fertilization, so we are looking for options to mitigate the deficit that we have on agricultural supplies. The strikes and social protests that we have had, and the pandemic restricted the transport of concentrates, forced us to change the logic of food consumption for animals, we have some animals here. So, what we did was to, for example, move the cows into the roads of the coffee plantation. That had never been done, it has other problems such as soil compaction, but during a specific time it got us out of trouble. The administrator, Cesar whom you said hello downstairs, he is very active and would be good for you to talk to him because he likes a lot to look for alternatives to the traditional production methods. unintelligible, but in the territory he doesn´t understand that there are other ways of working, so he detaches himself a bit from that technology and looks for alternatives.

**Is that also a topic in the courses here? The sub-products or how to handle them?**

No, we do not focus on those topics, because the way I see it the Colombian conscience or culture is very basic when it comes to that. People who understand it very well is because they have a cultural level a bit higher. So, it’s a bit subjective, but the students are interested in the technical part, so when they see that the instructor focuses a lot on those topics about conservation, they are like, “I´m here to learn about production and not those things about conservation”. Students that are studying the programs for environmental control see it very clearly and worry about that. But the ones that are on production, it´s only producing for them and that becomes something alternative but not a really important concept within their formation.

**What is the percentage of men and women that study here?**

That come here? Good question. It depends, I would say… In the long courses I would say 50/50 of the young people. And in the short courses I would say 70% men and 30% women.

Shor courses are preferred more by men than by women, but everyday more women want to get the capacitation.

**Are there topics in which women are more interested or involved than men?**

No, I would say that it is leveled. You can see women who are baristas, women who do the roasting. In the process of formation, it is already leveled. In the productive sector there are more men than women, there is a gap that we haven´t been able to close yet, that´s how I see it: in the formation it´s the same but in the productive sector there´s a preference for men over women, it is a bit sexist in that aspect.

**Do you want to do a school for cacao? Like the one for coffee**

Yes, parting from the experience that we have had with coffee, which has been good. This school has become the nationwide referent regarding training processes in coffee quality. That recognition and the accreditations that we have, adding to the fact that in the department the hectares where cacao is being planted are growing, gave us the perfect mix to think about why not apply the same logic for coffee quality to cacao quality taking advantage that the crops are growing across the whole country, and particularly in Quindio

So, with the subdirector and the director we thought last year in proposing a project and they asked me to formulate the project, the project is called Escuela Nacional de la Calidad del Cacao. For which we already have this render, the blueprints, we already have the resources, the project was approved. We are going to install it here at this school. Out of this room there is a hallway, there´s another laboratory to the right; there is where the school will be. It´s going to be smaller but that´s where it´s going to be located. What we want is, not making chocolate, but to analyze the quality of cacao, to inform the new producers, because cacao is totally new for us in Quindio. In Colombia they have a cacao tradition at Santander or Antioquia but in Quindio it is new

So, we prepared this project, it´s going to have this distribution. This is the hallway, here we receive the cacao samples, here we document it: who brought it, which farm, what height, what quantity, what variety, which clones, everything. We submit it to the process established by the norm, there´s a norm for cacao, for quality analysis. We determine humidity, we document the whole process and then we move it to this aree where the machines that will do the transformation will be: roasting, peeling, unintelligible, the mill that will extract the cacao liquor which is the one that goes into the tasting. Until this part we extract the liquor, after extracting it we have 5 tasters who will do the sensory profile analysis of that cacao. You see here that they are locked in, through a software they will feed into it and at the end here in the screen the producer, the taster and an agricultural engineer will see results, which is the last part of the process of quality analysis. So, if for example there´s a warning that there´s a defect like on the fermentation or of an excess in the use of agrochemicals in the field, the taster and the engineer will warn the cacao farmer that he is making mistakes and the engineer will go with the farmer to correct the defect on field. That´s one thing.

Then there´s the identification of potential exotic sensory profiles or of attributes that were unknown. What we wanted to avoid is that what happened with coffee for so many years happens here. This was that the producer just picks up the coffee and delivered it so that a company would buy it and take a lot of advantage out of it. So, what we want is to tell the cacao grower, “This is the cacao, this is the sensory profile. It is an outstanding profile. Look at the market that you can reach, don´t take it to the cooperative because they will pay you less and you will lose the opportunity to commercialize your cacao better and have better income. So, this is the school.

I´m going to show you a presentation about how was the step-by-step to build the school.

**I have here an image of the concept that we are working with, which is called the BioHub. The idea is that in this green area there are communities that produce the biomass that is not used, it is transported into a biorefinery where it can be transformed into another product such as, in this case, biocuro to produce biofuels but at the same time biocarbon is produced, which can be used as a fertilizer in the farms or for water filtration. Biogas is also produced and water that can be used at the plant.**

**What we want to understand is if it is possible to generate a system like this here, parting from waste and what are the opportunities and also the challenges to do something here.**

You are analyzing 3 materials, coffee, cacao and what other one?

**Here in Colombia, the waste from coffee and cacao. We are also looking into what other waste are generated to get a big volume.**

We were at the cacao farm around 1 month ago. The biggest cacao farm I would say that in Colombia. It is from a person called Diego Montoya. He is the uncle of Juan Pablo Montoya, a Formula 1 driver, Colombian. He has a lot of money, by himself he has 85 hectares of cacao here at Quindio. When I went there, I was surprised. I have a very environmental profile. I´m a lawyer, with course on Environmental Law. I am a teacher here and at the university, so those environmental topics are my passion and I like them. Every time that I see something that doesn´t… I wonder about it but I cannot do anything about it. When I went there, I saw that he produces a lot, he sells a to Ferrero Rocher, exports all the cacao but throws away the cacao pods. So, I asked him “Don Diego, what do you do with the pod?” and he said, “That gets degraded there”, so the leachates that contaminate the water… That unintelligible me and I said “Here there´s an important control factor that they are doing” because, I insist, we just have 700 hectares but the cultivation growth rate is very high. In little time there will be a lot and still don´t have the technology to handle that waste here. It doesn´t exist. It´s important to develop it.

unintelligible

This is the project. This is the CENOA line, which is our research program. This comes from the need to solve the things about cocoa quality. The problem is a technology deficit in the unintelligible processes. We are aware that regarding quality we have neither knowledge nor the technology. So, we need to bring the technology and study the system. So, we thought about a school. The objective is to strengthen the technological capabilities that contribute to the competitivity of the cocoa sector through the adaptation of the equipment at the school. We think that we are going to add to the nascent productive cocoa sector with quality analysis and for that we need the equipment. So, the objectives are to equip the school, do the processes and this one is very important, the fact that we don´t cocoa documentation in Colombia. What we know about cocoa we bring it from Peru or Ecuador, but Colombia hasn´t been a country that has been concerned about documentation, so that´s one of the challenges.

The project has 4 phases, right now we are in the 1st one and beginning the second one: interinstitutional consolidation. Success of projects that we have formulated here is thanks to the fact that we have not done them alone, we say “Who knows about cocoa?” and It was Fedecacao, so we went all the way to Fedecacao. We told them about the project and asked them to add themselves to our project. Who else knows about cocoa? The Cocoa Growers Association from Quindio, so we went to them and invited them into the project. We then went to the government, and said “You have the cacao line, come here to the project”. That interinstitutional sum has turned out good when it comes to distributing the resources. We are in the 1st phase. This one is ready, it´s okay. We have the documents from those entities where they decide to participate. We are now in the technical part, the blueprints, and the previous studies to the unintelligible process. In that consolidation we went all the way to Santander de Chucurí. that is the best cocoa laboratory in Colombia, so I thought that that laboratory at San Vicente de Chucurí will be our starting point. Based on that one we will build our laboratory.

This is the technical chief from Fedecacao, we are in the middle of conversations with him. This one is already here, with the cocoa producers: Mr. Elí, unintelligible and all them. We told them about the project and they were happy because in some way they feel like orphans. Since it’s a new crop, they began with it and it hasn´t gone badly for them, but they feel that they don´t have the technical support. It won´t be enough but we will help, we will add.

This an expert in cocoa exports, Jaime Raul.

This one is with the government from the department Quindio, we presented to them.

And this one is the grower, Diego Montoya, here are the plantations. He is the one that has 85 hectares of cocoa, sells to Ferrero Rocher but takes the cocoa pods and throw it away. His farm is an hour and a half away from here.

Here is the building schematic of the school: CENOA, government, national association, local association are the main ones to conform the cocoa school.

This is the letter, the compromises of everyone, what everyone is promising to do for the project, like what the government promises to do.

And here the technical phase begins, like how will the spaces look like, infrastructure, technology. In this second phase of the project, I have a dream to design a software that will allow us to have the map of Colombia and every time a cocoa producer gets here and we do the cocoa profile analysis, I can anchor it. And that in 2-3 years we have a huge number of analyses and that somebody can use that information to take market-level decisions. Like “The Netherlands is asking for cocoa with a smooth sensory profile but with flower aromas. Where is that cocoa?” so the software can be used to determine market trends. That´s just a dream.

And well, there´s the norms that we are going to apply from ICO, which is the International Cacao Organization, I already told you it´s something about quality. The services that we will have there, basically the same as with coffee: formation, technology services and applied research. Each one of them has their components such as certified formation and complementary, long and short courses. Which courses? These ones here, SENA has already created these courses, they have it in other regions, but they have them. Technology services is to come make a physical and sensory analysis of their cocoa. Innovation for the production is to get involved with Fedecacao to applied research. In which topics? In things related to quality and documentation, because there´s no documentation and we need to begin doing so. That´s the projection for the cocoa school that we have. Very focused on the coffee´s logic, which is quality, not chocolate. For chocolate there are other centers at Santander where they are experts. We want to be very specific in the service we want to offer.

**So, you´ve seen this person that produces a huge volume of cocoa and does nothing with the cocoa pods. Why here are subproducts not used? What are the factors?**

First is that this is a new crop for us. Secondly, in Colombia cocoa has been a mountain crop and very traditional. If you go to Santander, which is another region, the farmer will be a 60-year-old man. So, from him I cannot expect certain logic, he is very basic, he only produces: he takes out the pod and doesn´t care about the rest, his cultural level is not enough. Don Diego is 70 years old, what matters to him? Money. One could say that they are not at fault with that kind of thought because they were never thought as children to think differently. So, the generational replacement is essential. As long as young people take control of their processes, that they have in their DNA environmental conservation, that will have another style. There´s a lot of people eager to learn about the pod´s transformation.

Cesar, I insist that you should talk to him, he is doing something with that pod. Look how active he is. Here we do not have cocoa, so he goes alone in his car to where cocoa is produced, brings those raw materials, transforms it in the machines that we have here and feeds livestock with it. All by himself. You should talk to him. He is the husband of unintelligible, she is right now in Canada. He is very intelligent and active on this kind of thing. He is seen around here as a crazy man, but no, I understand him, he is very aware of environmental protection. Here he doesn´t use agrochemicals. Here we have a problem with an ant, and there´s a product called Regent, it´s fipronil, an organochlorine compound and he doesn´t use it. So what are we going to do with the ants? He looks for alternatives but does not use that.

**He is very** unintelligible

**Do you think that SENA could play a role in that system?**

Yes, because this is an agro-industrial center. I put myself on the perspective of the new president and he has said that Colombia must be a life power and that we have to begin from the agro-industrial transformation. We must let go a bit fossil fuels and petroleum. From now on, I can say that, since SENA is part of the Ministry which is by the side of the president: whatever the president decides, will begin to trickle down so surely, we will get the policies to strengthen the agro-industrial sector as an alternative to the replacement of the use of fossil fuels. That´s way off in the future because this cannot be replaced now, but we have to begin to think that that has to happen. So, for me, all the unintelligible

What should be done? Formalize it with unintelligible, but keep trying. More in this school where we have the coffee, we have the subproduct, and you have the technology so you can tell us how to make biofuels with the coffee pulp that has lot of sugars and stuff that you know about, and we are not taking advantage of that.

**Yes, a challenge that we see is how we can reach those older producers. How can we include them? Do you think that SENA can have a role there?**

For us to be able to do something, we must frame it within the law. The law 11994 says what is SENA´s mission. The mission states that SENA is in Colombia to train the talent that businesspeople need, that´s one thing. If businesspeople demand some kind of training in those aspects, of course we are obligated to do so. But there are some programs that are environmental in nature. Those programs have competencies where this could fit. For example, for the environmental engineer who is the one who teaches a competency, the competency is the basis and the engineer through his/her professional criteria will introduces the academic content that will be provided to the student so that this student gets the competency. Within those topics, it is possible the engineer will include this kind of technology.

The other thing would be to look up at SOFIA the design of the short courses and study which ones… In the software you can see the name of the course and the competencies, then you can see the contents of the competencies. What kind of content and which course could fit? I know that with the long courses this is possible because there is, for example, technology of environmental control, it takes 2 years, in there you can introduce this kind of knowledge. But in the short courses, which have very specific designs, it should be analyzed how we could… First to see if the course exists and in which ones this new technologies could be introduced. These centers are the ones called to apply this sort of thing, because we are an agro-industrial center, we must transform not only the product of the unintelligible but also the subproduct.

**Which challenges or obstacles do you see to implement something like this?**

A challenge would be to generate the link between SENA and the university. There are 2 ways to go about it: one is to generate it and the other one to not generate it. If we do not generate it, the impact would be way smaller because I would give you a space here for your experts to come to tell our agricultural production, industrial and environmental instructors what this is about. Information would be then “socialized” and they surely would be able to apply it because they have the necessary things to do so. But the impact would be very specific, and SENA has around 1000 places in the whole country. Now, if the link were to be institutional through Bogotá, Delft University linked with SENA, then things would be different because there would be a whole project in which the technology that you have is applied in the centers, and this could be institutionalized across the whole country. Those are the 2 ways: one with a low impact and another with a higher impact. At the national level, SENA has an internationalization office, through which we have already worked projects such as unintelligible with Japan, Sur Sur where people from Africa come here and we send people to Africa. We have made agreements with France, we have had French here and we have send Colombians to France. With Italy we have some agreements on coffee, with unintelligible. So there is an office of international cooperation from SENA and through that it can be formalized.

**Finally we want to understand the role that stakeholders have in the coffee sector and stakeholders that could have a role in a new value chain. We want to understand their relationship with each other and their position regarding the power that they have in the sector if its high or low, and regarding their interest if it´s high or low. I would like to ask you what do you think about the stakeholders and their position? Should we change something or are they fine?**

Regarding coffee?

**Yes**

Interest and power. For me Fedecafe, regarding coffee, is well located: it has high power and obviously high interest.

**Also regarding subproducts?**

With the subproducts I wouldn´t put it that high, I would put Fedecafe lower. Cenicafe, high interest, power… yes, it´s subordinated to Fedecafe, so there I don´t…

Coffee Growers, they are well located in interest. Regarding power I think they… They are also subordinated to Fedecafe policies, because we could say that these ones belong to these ones. Because these ones are the association representation, but for this to exist they need these ones, who are the ones who make up the association. It is a democratic association; they have a voice and a vote and they make up the Federation. So, I would understand that these coffee growers are not referring to the ones integrating the departmental committees, but rather referring to the producers. So, for me they are well located.

Academia, high interest and low power. I would put it higher to these levels.

**Higher power.**

A bit, because academia is participating in the clusters. Those were the non-existent spaces. Since the existence of coffee clusters, academia plays an important role in the decisions made there. They are very low, they don´t have enough power but they have been under the spotlight thanks to their participation in the clusters.

Cooperatives I think have a lower place than they should. For me cooperatives end up being fundamental, since they are the ones managing a big part of coffee commercialization, they are the ones who end up paying the product.

**So, their position would be?**

A bit higher on power.

Technology providers. I would put them lower on power and put them higher on interest, because what kind of power do technology providers have over coffee? I would say not that much because they commercialize their developments, but they are not fundamental when it comes to decision making. I would put them on higher interest but lower them a bit on power.

Biorefineries are beyond me. I don´t know about the subject, so I could not tell you about… Because Colombia has not been strong on these subjects, you are the ones who know more.

Maritime industry is important, because through them is how big volumes of coffee are commercialized.

Regional government. Look, this location is how it should be. But I would put it lower on power.

**Yes?**

Yes, because in the end … Do you know who you are missing here? The clusters. You are missing the clusters because, for example right now there´s a strong women coffee growers movement. Those women coffee growers are born from the cluster´s leadership.

I would put Fedecafe a bit higher and would lower the government. I would put almost at the same level, because regarding coffee, the regional government used to… But normally the regional government has been subordinated to Fedecafe. unintelligible.

Within decentralization through collaboration, Fedecafe is here. Why is Fedecafe within the government´s structure? This is a particular association with their farm, they managed to form Fedecafe, they got all together and formed the Federation. Why within the state? Why is Fedecafe within the state? Because Fedecafe has a Fiscal account called the “Fondo Nacional del Café”. This account unintelligible, which is the coffee contribution. So, the association itself is private, but the coffee contribution is a fiscal account that belongs to the state. This fact, that they are the ones who historically have had this fiscal account, has had the regional government subordinated to the Federation and I will explain to you why. It turns out that the municipalities´ roads were built by Fedecafe, not by the government. Rural phone services were built by Fedecafe, not by the government. Schools were built by Fedecafe, not by the government. Where did the money come from? From the fund, from the fiscal account. So, Fedecafe has had a huge importance and to me the regional government has not been fundamental. Moreover, the regional development came from coffee and the government was subordinated.

**Is it still like this or has it changed?**

It has changed. The contributions have been reduced a lot because there´s no longer a coffee pact, income is less. The association considered that the discount percentages were not that big, so that has changed. That´s why I would put them at the same level.

Maritime industry, communication platforms, in here there´s still a deficit because the rurality in Colombia has no connectivity. This government stole the money. A minister disappeared the money that we had to connect rural zones to the internet, all the money went with corruption.

**So in rural areas there is no internet access?**

Not in most of them. There are zones that do. Quindio is very privileged, this is a department where you easily find services, but we are the exception: Quindio represents the 0.1% of the national territory. We are very small. In fact I wrote a book called “Principio de Proporcionalidad”. So, these communication platforms are essential when it comes to commercialization, to know the prices, manage and more, but we don´t have total connectivity in Colombia, generally speaking.

Biomass collectors, does that refer to companies that work on managing that waste?

**Yes, and that they collect the biomass at the farms and take it to the biorefineries, for example.**

I would put it there in the lowest part of power. Regarding interest, we have to see it from 2 angles: there would be a high interest, but know the economic alternatives are not known. I know there´s a lot of people that would say “We should manage that”, that´s high interest. But what are the economic alternatives that allow me to position myself in high power places? The interest I would put it in the middle because it does exist, but power there in that low level is fine.

Liquid transport/storage companies.

**Yes, here.**

No, here I would put it lower because here in Colombia we have huge problems of rural infrastructure, which is where the raw materials that you need is produced. Here there are zones where you go in by mule. The Coffee Growers Federation symbol is a mule. But it´s not that with pavement this will be solved, because our topography is very difficult, and coffee grows on mountains. So, there we have a challenge that within this productive process costs on that aspect become too expensive. It´s a challenge. It´s not the same as in Europe. In here it´s a crazy here.

I worked at Genova. Genova is the most mountainous part of Quindio. I got to the school by motorcycle. From there on I put on my boots, bag pack, a hat and walked 2 hours up there, and there are families there. I asked them “How do you bring food here?” and they said, “With the mules”. And those were big farms. They used mules for everything. It is not the same to transport the raw materials to commercialize a product than for a subproduct, talking about costs. But that’s part of the challenges. Although not all farms are that isolated.

So, the national government is where it should be, it has the most power, but interest has been … one could say that it depends on the government on turn. Some governments have supported coffee and others that not so much. People understand that the national government should subsidize coffee on time of low prices or when the dollar exchange rate is lower. To that, the government participation with coffee has always been associated. The government, on my mind, has not influenced enough on Fedecafe´s decisions. It´s only an association, but the national government never generated alternatives. The only thing that has been done is this, which breaks a bit with Fedecafe´s logic of unintelligible raw material, because this is from the government, it´s a government entity. So, when they break up with that raw materials logic, the government then is moving a bit towards the right side. It will have all the power, that´s undisputable. The challenge is to move this position towards the right. That what I think about your matrix

**What about SENA? What is its position?**

Regarding coffee, I would put SENA… In power we are subordinated to the national government. I would put it in this zone: high interest and middle power, subordinated to national government. Because we have a lot of interest in coffee, we understand that coffee has historically been an important productive system and we need more knowledge and strengthen our capabilities and competencies. Regarding power, we might have some because we are present in all municipalities. Through trainings we can generate change. But those changes are always subordinated to the national government, so for me it would be there around that area.

**A stakeholder that is missing, you said it was clusters?**

Clusters

**Where would you put them?**

Special coffee clusters. Their power right now would be somewhere in the middle, parallel to SENA because they have a lot of interest on coffee´s development but with limits. Even when they make decisions – because in here government, academia, transport and everyone else participates – but they end up taking into account everyone´s opinion. It´s something eclectic.

For the stakeholders, if we get an average depending on their intention will end up being somewhere over here, because national government doesn´t participate, only the regional government. Academia unintelligible, between ones or the others, that would be their power. But interest would be very high.

**Any other stakeholders that are missing? That play an important role in new value chain.**

I’ve always have had a complaint, and that´s the buying countries. For me the ones that consume environmental goods and services, or service production, have been historically not paying attention to what might occur at the origin, “I drink coffee but I do not care what happens there”, or “I use my cellphone but I do not care about where the raw materials where obtained”. So, the final consumer ends up being part because we are part of a globalized world, and we cannot be separating people. This concerns everyone, it is the same as with drugs, they say that we produce it, which is true but we do not even consume 5% of what is produced. And it’s the same with the environment, we have the Amazon and its being destroyed but we do not have the capacity to control it. But the Amazon is not Colombian, Brazilian or Ecuadorian, it´s from the world, so countries should have a direct implication there. I would say final consumers should be there somehow involved in the matrix.

**Thank you so much! Is there something else you would like to add?**

I hope that this can be achieved, that you can give us some training, that is vital to us because we have sometimes only the basics, very conventional and conditioned by these two people. We want to take out from here what is useful, but we need to think that development could be more sustainable. We need alternatives, that is vital, as long as we have alternatives to conventional production of fossil fuels, that is wonderful. How I see it is that it is very welcome.

I think that in here you´ll find a good place to work, with the new president profile, besides political opinions, I am convinced that the government is the one who must be very well informed about climate change. In the future, the main criteria will be that one. It maybe will not be up to us but there will be a generation that will prioritize those criteria when electing governments.

You are very far ahead, you are very advanced in those topics precisely because of the small size of your territory. It´s very small and maybe not you but Italy, France, Spain very pressed. In 2008 I saw in my building old people die. There was a summer so hot, that ambulances came to pick them up. That´s something that I have always thought about. But how can the sun do that? Well, of course, they were old people and with those high temperatures… Because in here we do not get those temperatures, one must be all the way over there to live a summer like the ones at the South of Spain, France, or Italy, very strong. So, that will become worse unless we do something about it. That´s what I think

And congratulations for the project! Hopefully you´ll come here and do some participative research! That´s fundamental.

**Thanks a lot!**