**C9 - Interview technical advisor cooperative Jaen – 16-11-2021**

**Could you introduce yourself to us?**

My name is [name], I am farmer here in [place] and the majority of the my cultivation is traditional.

**How old are you?**

36

**And you work here at the cooperative as technical advisor?**

Yes I am technical advisor at the cooperative, I am agricultural engineer. I control topics related to the field, such as pest control, treatments that are needed, for the members of the cooperative.

**Since when do you work here?**

I work here about 8 years

**How long do you work as farmer?**

Practically all my life, my family are also farmers and since I am little, I am involved in the field.

**How much hectares do you have?**

I have a family exploitation of about 150 hectares.

**With who do you work in the field?**

With how many people? There is one person who works the whole year, and does work based on what is needed. And then it depends on the work that needs to be done, we contract more people. During harvest for example, we work with 10 people and after that, during 3 months people help us out in the pruning, about 4 people.

**And what kind of services do you offer as technical advisor at the cooperative?**

The cooperative offers technical assistance, especially on the use of phytosanitary products for the treatment of the olive trees, based on what the trees need. We also assist in bureaucratic and administrative formalities. Also during the harvest period, we do studies of the parcels to see when the optimal time is to start the harvest. We also make plans for fertilizers and do inspections on the health of the trees.

**Do the members have irrigation here?**

Some members have irrigation, but not that much. About 20 percent have irrigation, about 80 percent is dry cultivation.

**Do you know the amount of water that is used in irrigation?**

I don’t know exactly, because some members have their own well, and some belong to a community of irrigation. We advise a little bit on how much they should use and when they need to cut down on water, but in the end, everyone does it the way they want to do it.

**Maybe you can say how much is used on average?**

I think about 10.000 liter water per tree per year.

**Do you know what the obstacles are for the members to have irrigation?**

Principally here, we don’t have rivers close by. So we don’t have a water source. On an individual level, people are making wells, because sometimes it is possible to find water in the subsoil, but sometimes also not. So it means that the farmer needs to make extra costs and sometimes, especially when they have small plots, they are not that interested to make extra costs for irrigation, or just to have dry cultivation.

**You also said you advise about the amount of phytosanitary products and fertilizers. What is the amount of fertilizers that is used here?**

Here they usually don’t use more than 100 units of nitrogen, also because of the costs, the costs have increased a lot. We often recommend to use more, but the farmer uses less because of the costs, because he cannot afford it. The prices have increased tremendously. So sometimes the trees are not receiving the amount of nitrogen that they need. In the best case, they should use fertilizers once a year, but now sometimes they only use it once every two years. But that also depends on the price of olive oil, when the price is good and farmers earn more money, they can also use more fertilizers, but when the price is low, like in the past years, with what they earn, they can cover the costs, not more.

**Do you have some numbers/information about the use of fertilizers that you can share with us?**

We have a warehouse here where we keep the fertilizers and where the members can buy it. But not everyone buys it here, there are also members that buy it somewhere else, so I don’t know exactly. We don’t have that information.

**Do you know the amount of energy that is used in the field, for example for the machinery?**

That depends on the *cuadrilla* (team of 4 workers). For example, a tractor can have a tank of 100 liters of gasoline. Maybe they are working 3 or 4 days to transport the olives from the field to the mills. Then they also use hand vibrators, that uses about 5 or 10 liters of gasoline per day. But it depends on the *cuadrilla*. Some use a vibrator, some use bigger machines, depending on the size of the plots. In our plot, we use a tractor with a big gripper. We use for example about 25 to 30 liters of gasoline per day. So if you have a tank of 100 liters, you need to refuel every 3 or 4 days.

**How much days are you harvesting?**

In my case I take about 50 days.

**50 days for 150 hectares**

Yes, more or less.

The smaller farmers often use a car with a trailer behind. They can take about 1000 kilo of olives per day. If they are working with family members, they work with 3 or 4 people, they fill the trailer with about 1000 kilos of olives and they take it to the mill. Some of them might also use hand vibrators to help the olives fall down. Practically, they have the costs of the car and the vibrator. And sometimes they use a blower to collect the olives. The blower has similar costs as the vibrator. They use about 5 to 10 liters of gasoline per day.

**How do they do the pruning here?**

Here in the traditional olive cultivation, they use a chainsaw and sometimes a hand saw. One person is doing the pruning and one person walks behind him and separates the bigger trunks and branches from the smaller part. The smaller parts they usually pile up between the olive trees and they chip this. The bigger branches and trunks are cut in pieces. Currently, we have a project here, where they bring this wood here to the cooperative and we sell it.

**Are there companies that are doing that?**

Normally there are companies that chip it, because for farmers it is not viable to buy the machine themselves to work just 6 days a year. So there are service companies, as we call them, they have the machines and they do the chipping.

**Do you maybe have the name for us of one of these service companies?**

I wouldn’t know, but I could ask.

**And these companies do this, chipping of pruning rests, do they also do other things?**

Well, these agricultural service companies offer all the activities that need to be done in the field. These companies have people that work in the field. For example, I have a plot of land but I am not working myself on it, then I will contract this company, that has workers that can do the work.

**What do you do with the pruning rests?**

I chip it and the bigger branches and trunks I cut in smaller pieces and take it to the cooperative to sell. In that way, I can obtain a little bit of extra income.

**What is the price of that wood?**

About 6 to 7 cents per kilo.

**Do you take it yourself to the cooperative?**

Yes, I take it to the cooperative. We take the wood in a trailer, we empty it here in the cooperative, we weigh it and then the cooperative pays for it. Then a big truck comes to pick it up and sell it. And it will be about 6 or 7 cents per kilo of wood.

**Do you have space here to store the wood?**

Yes, we have a patio here where we store the wood, we make a big pile. Then a truck comes to pick it up.

**Does every member do this?**

There are every time more members that do it. But there are also members, especially with smaller plots, that use the wood for their own consumption, to heat their houses in the winter. And also for hot water. But those members with larger plots and those that don’t use the wood, they bring it to the cooperative.

**Would you also be interested to sell the smaller pruning rests that you now leave in the field?**

The smaller biomass, we normally chip and leave on the soil, also because it is contributing to organic material in the soil. But I know that there is a company that does that, they take the biomass and make energy, but I don’t know the name of the company. I have seen that in other provinces, but not here, here the majority is chipped. There are also areas where the machine cannot come, there they burn it.

**But here they don’t do that?**

Here I think about 90% chips it, and 10% in more complicated areas, they burn it.

***Showing and explaining the Biohub concept***

Here another byproduct that we use is the olive pits, we also use that to heat, also here in the cooperative. We also sell the olive pits, some farmers have heaters based on olive pits.

**Ok, so the olive pits are already used**

Yes, the pits already are used. What happens is when we have a big harvest, we have olive pits left, so the cooperative has to search for buyers.

**How do you see this concept, you think it can be viable here?**

I think especially for the orujeras. They are mis-using the sub-products of the olive sector. Some are generating electricity I think, so there they are using it. But projects like this, utilizing leaves and wood like you propose, that doesn’t exist yet, it is just starting here. But this will benefit the farmer, because they can generate more income from their plots. They cannot sell it themselves, but the cooperative can. I think it can be interesting, to utilize more the subproducts, especially because you can generate more income for the farmers.

**You said that the majority of the members chip the pruning rests and leave it on the soil, which also benefits the soil.**

Yes, you are trying to say that when they sell everything, there won’t be anything left for the soil. But like I said before, everything that can generate benefits for the farmer, apart from selling their olives, the farmer would agree to sell it. Some might choose not to do that, because the pruning rests are providing benefits to the soil, so they might be compensated for that, or they should study if it will me more profitable to sell it or to leave it on the soil.

**Ok, do you know biochar?**

No, I don’t know

**Ok, that could also serve as fertilizer to the soil**

Ok, it can be re-utilized

**You currently don’t work with biochar?**

No, well here some cooperatives are working with compost, they use the leaves and mix it with for example manure. So what remains is a mass that can also benefit the soil.

**Could that also substitute chemical fertilizers?**

It could yes, especially because the prices of chemical fertilizers are high and they are increasing. So people are using less. In the new CAP, farmers need to be more green, more ecological. What they want is that we use less phytosanitary products and that we have more ecological practices. So the topic of organic fertilizers or compost from leaves and things like that, it think there will be a lot of future in that. I think they will definitely limit the use of phytosanitary products, same with the use of insecticides. I am sure there will be a year when they will limit the use of that and that we should use more natural products. So I think that will have a lot of future.

**Is that also something the cooperative is working on, becoming more sustainable or ecological?**

This year, some farmers have started with ecological production and also members that started integrated production (produccion integrada). That is increasing, also because of CAP, that is asking more to receive green pay (pago verde). Not to use insecticides or herbicides with doses of heavy metals such as copper, that all needs to be reduced. There are new projects here in Jaen, called Olivares vivos, that want to work with fauna and the olive as monoculture. For example that they sow other plants between the trees, to have a green area. Often, that is cleaned so tractors can enter easily, but that is changing, people are leaving it green, to increase biodiversity and help flora and fauna. We have a lot of insects that are beneficial for the olive trees, so they want to create an ecosystem that is self-regulated.

**Do they do this project of Olivares vivos also here in this region?**

I think it is from the university of Jaen and some plots in the province, and I think it is working well.

**Also with plots from members of this cooperative?**

No not of this cooperative, but I know from other cooperatives that it is working well.

**Do members of this cooperative have cover crops?**

Yes the majority yes

**But those are pruning rests?**

Apart from that also live cover crops. And in the spring, people also leave rests of grasses and brushwood. That is also left on the field.

**Do you think it would be possible to grow energy crops between the olive trees? Crops that also can be used for biofuels?**

Yes, here in this area we have traditional cultivation, with a lot of space between the olive trees. So sometimes they also plant cover crops between the trees. That is normally done in areas with a lot of erosion and with a poor soil, it is used to support the structure of the soil and to contribute to more organic material in the soil. I think it can also be possible to plant something else, as long as it is not in competition with the olive tree, if it has a different cycle for example and us planted between the olive trees, yes I think it can be possible.

**But currently you don’t have experience with that?**

Up until now, little work is done in that respect. If the farmer has cover crops, it is spontaneous.

**Do you also have some information about the quality of the soil here?**

Here it varies a lot, there is clay soil and sand soil, that depends on the area. For example, the more flatter areas have a clay soil, in summer the soil opens and creates cracks. And in the mountain parts, it is more sandy soil. But that depends a lot on the area and that is work of each municipality.

**In what way? Does the cooperative have projects to improve the soil?**

The cooperative doesn’t do that much, it is the farmer that has to take care of the olive trees, to produce olives. The cooperative is interested in the production for example when they need to start harvesting to get highest quality olives. But it is the responsibility of the farmer to do his job and take care of the trees.

**Ok, and would you be interested to sell your pruning rests?**

It depends on the numbers, if I would be interested or not. Because the problem is the transport, but if it is all very centralized in a small radius, yes you can transport it. But if the distance is larger and you need to hire a truck or something than I don’t know if the costs will become too high. I should see if it is beneficial then, because then I am also getting rid of the organic material that can be beneficial for my soil. I prefer to contribute that material to my olive grove, so I will have more production.

**Would it matter to you if a company would come to your field to pick it up or if you would have to take the pruning rests to a place yourself?**

Like I said, if it is nearby and you can bring it yourself with a tractor, that would be ok, but if it is further away, that is more difficult. There is also the issue of foliar mass, something that weighs little but takes up a lot of space. So the transport is the biggest problem that we have here. But if it would be possible, I would like to try. But if it is far away, you need to hire a truck, pay for the transport and things like that. And then we have here at the cooperative the orujo, which is also a subproduct. With the orujo, the same thing happens. We have an orujera nearby and another one as well. We are lucky because it is so close, only 3 km and 8 km away. If the orujera would be 50 or 60 km away, it would mean more costs for the cooperative.

**Thank you, I think that was all**