

PROJECT TITLE: Enhancing food sovereignty with native species in Nariño, Colombia

Project Overview

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Location: Guachucal, Colombia

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The project is part of a larger project S.A.N-Nariño (Seguridad Alimentaria y Nutricional) which was launched by McGill University and the Universidad Nacional de Colombia in 2012. The project initially focused on developing potatoes with higher yield and better nutritional value to improve the diets of the communities in the region of the south of Nariño. As it evolved, agro-ecologic agriculture practices became the main focus with the aim of maintaining ancestral knowledge and preventing major climate change impacts. For this reason, the ELIGESSAN was created in 2016, which became a space to enforce food security and sovereignty, to empower the communities to have active participation in the way their food is grown, emphasize gender and family equality and the conservation and protection of the environment. These schools are composed of members from five different communities which meet monthly to learn and share about a different topic.

My work was focused on the environmental aspect of the project, specializing in the conservation of the water bodies. For this, I worked on the restoration of the páramo and water bodies with native trees, additionally to conducting workshops about the importance of water and the effects of its contamination. Also, part of the work was to continue the organization and improvement of the **organic community market** that happens biweekly on Saturdays where the producers of the ELIGESSAN sell their organic products distinctively from the regular producers.



Objectives

Almost fifty years ago, a large industry named Corponariño conducted a project to cut the native trees to replace them with species that have better economic outcome. The new species included eucalyptus (*Eucalyptus globulus*), cypress (*Cupressus lusitanica*), pine (*Pinus patula*) and Japanese acacia (*Acacia melanoxylon*). Although these species have the advantage of being timber-yielding, they have negative impacts on the soil. The fallen leaves take a long time to decompose and the roots uptake a lot of water resulting in a soil that becomes arid and unproductive.

Additionally, two other practices are deteriorating the ground soil and leading to deforestation. The intensive use of chemical fertilizers and pesticides has decreased the yield over the years, and increased the amount of plagues that has effects on the health of those working in the fields and consuming the produce. The milk industry which is the biggest income source for most campesinos, requires large extensions of land to be cleared to grow grass for the cattle. Both practices have stressed the ground over the years diminishing the properties of this fertile terrain and the population are starting to see the consequences.

These practices are influencing the biology of the soil and most importantly, are the reason for the decrease in native flora. Furthermore, they are deteriorating and contaminating the water bodies that provide clean water to all households in the region. For these reasons, the objective of the study was to raise awareness to people of the risks from deforestation,

recover the loss of native forest cover, and expand the knowledge of the benefits of these species on the water bodies and soil. Through meetings, trips to the mountains, reforestation days, and the creation of a guide, the study hopes to restore the ecosystem.

Background/context

The region of work had very particular characteristics making it an important ecosystem in need of its protection. The three municipalities in which the study was conducted are in the páramo, a region located 2700 – 5000 m of altitude and is composed of high, tropical, montane vegetation. The flora and terrain of the páramos is very important due to its ability to harvest water and high fertility, which led to a lot of agriculture and with it, the deforestation. A major part of the páramo is farmland where potatoes and beans are primarily cultivated intercalated with pastures to raise cattle for milk.

From all the water of Colombia, 85% comes from the páramos, making them one of the principal sources of clean water in the nation. With human disturbs in the area, this water is getting contaminated and becoming more scarce every year. The combination of human disturbances and the unexpected changes in climate are making it difficult for the farmers to cultivate their crops and for the population to access clean water. Since farming organically individually is not enough to

restore the ecosystem, I decided to focus the work on the restauration and conservation of native species, which is the purpose of the association which whom I work with most. The Agroecologic Indigenous Association Puma-Maki is a **tree nursery** that has been planting native trees for over three years with the purpose is to restore the ecosystem of the páramos. During the study, a lack of knowledge among the population about the native species was seen, which rose the idea to make a guide with the association. The meetings were conducted every Monday in the nursery, in addition to field trips to the mountains to plant the trees on various days of



the week.

Activities

The first few weeks consisted on getting to know the area through visits to the gardens of some of the members of the school. It was followed with meeting with the three different communities to find out what the members wanted to learn or improve. Through a participatory method, different ideas were discussed, finalizing on the topic of water harvesting as the main worry. Afterwards, a series of workshops on the importance of water and methods of decontamination and conservation were performed in the three municipalities. Additionally, I became a member of the tree nursery and a collective farming garden that was transitioning to organic. In the tree nursery, the members planted, collected seeds, and monitored the native species in areas affected by human disturbance. Many companies or land owners bought the trees from the nursely and with the help of the association, they were planted in the area of interest. In the collective farming, which most took part of the ELIGESSAN project, I helped but mostly learned about the production of potatoes and holiculture gardens, the difficulties of transitioning into organic agriculture, and the management of pests and seed diversification.

As a result of the ELIGESSAN project, every two Saturdays, I helped organize and organic community market, where the topics of fair pricing, role and produce organization, and sanitation were studied to be improved.

Challenges and successes

In the three months of work, four community markets were organized successfully where most producers sold all their product. Alongside my supervisor, we conducted five meetings with the three communities separately and one combined. The biggest problem found was the attendance of the members to the meetings and workshops. I ran five workshops, one in Guachucal, Cumbal, Carlosama, and two in the nursery, including one to a group of secondary school students in agriculture. Except for the two workshops in the nursery, the attendance in the others was low and brought the decisions to halt future ones. The low attendance was mostly because the ELIGESSAN project was finished a few weeks before I started due to the lack of funding. Since the cost of transportation and food was not covered, some people found it economically hard to get to the place, or were no longer interested to come fully voluntarily. After this result, I decided to organize meetings that were less often but combining the three municipalities. This resulted very successful when it was done at the tree nursery because a larger number of people could interchange their experience while learning hands on about the native species. The nursery, which is a bit tricky to access, became an example of success for conservation. The members showed interest to meet more than once a year to continue to exchange experiences and seeds.

Looking at the accomplishments, all the members became more conscious and aware after the workshops about the importance of conserving water. Most decided to buy trees to plant them in their properties as methods of life fences and silvo-pastoring, as well as medicinal properties.

I would have liked for the project to have reached more people that did not already preformed organic agriculture. It was encouraging to see a large group of people who have transitioned into a sustainable land use, but most farmers still use chemicals specially in large scale productions. I had planned to ran more workshops and do field trips with the three groups, but the lack of funding, assistance, and supervision modified the original idea.

Questions raised

A question that rose the most was how will the association use the information, and whether they will use it or will keep passing it on orally. Now that my study is done, questions such as what will they work on next and how will the outcomes be, come to mind. Most of the ideas that were discussed with the professors did not work due to the lack of organization between the members. This was not only seen when we organized the meetings, but in their own organisations as well. I questioned a lot whether the people could finalize any ideas since most of the time half of the group was not present. This problem has been happening since the beginning of ELIGESSAN project, and it is blocking them from having a successful produce commercialization with higher benefits.

When I arrived, I had in mind that the continuation of project had a strong structure, but it did not result this way. Since there was no more funding, there was only one person, who became my supervisor, part time in charge of maintain the market and the meetings. Additionally, the professors and past members where no longer working on the project and were in Bogota, therefore I was left on my own. Alternatively, I had a lot of freedom and since no one was there to tell me what to do, I had the opportunity to find what interested me. This also makes me question whether my study was very useful or not, but I believe that providing more information will help somehow in the future and could be applied for courses in the ELIGESSAN school.

Training/mentoring on site

Prior getting to Guachucal, I met up with previous members of the project and the professor in charge to get an idea of what I will find. Despite all meetings, there was little effort into structuring a potential project, and I found myself pretty lost once I got to the region. Before the pause of the project, workshops were ran biweekly and more than five students were full time working for it. Presently, only the community market is ran biweekly since the producers can manage it independently. As mentioned, during the study, the only supervisor was barely present due to other jobs in the city, which

left me with little mentoring and feedback of my work. My faculty member from McGill and the one from Universidad Nacional de Colombia did not give me any mentoring.

The idea of my study was to run workshops every 15 days in the three municipalities about water harvesting and contamination. Although studying a major in environment, I felt for the most part unprepared from the little knowledge of the topic, and felt intimidated by the extensive comprehension the campesinos have of their land. Luckily, I was part of the Panama field study where I learn about agriculture practices which was supplemented with research online before getting to the town. Once there, the online resources were limited due to the lack of connection, so I based most of my information from learning in the field.

To be honest, before starting the internship I had never taught a workshop to anyone nor worked with middle to older aged people. I tend to prefer working with children, but during the three months I learned how to communicate, work, and live with campesinos and the indigenous people of los Pastos of all ages. I was adopted by a campesino family who not only taught me a million things and drastically changed my experience, but ended up becoming a true family. I learned to listen to their experiences and pay attention to their stories, where I learnt the history and land changes of the region which helped me understand better my work.

I learnt about how difficult it is to organize a project and lead it through. I saw that most people agree to ideas when they are proposed to them, but then do not follow through unless something is given to them. Nonetheless, it inspired me to see that most really want to change and improve their planet, for the sake of their production and for the future of their children and the land that is left to them.

I find that the most important part of the study was to treat every single individual with respect and gratitude. I wanted to create a space where people could exchange their stories and thus everyone can learn from one another, especially the women who tend to keep quiet during the meetings. I prevented the meetings from being teacher/student style, specially because the people I worked with knew much more than me about their land. This allowed me to learn more and more deeply about their situations and create beautiful friendships.

After all, I became very self-determined and independent in my work because whether I would attain information or not, was all up to me. With list, I had to take responsibility of all my actions and results and when things did not work, find alternatives or make the best out of the situation.

Next time, I would inform myself better of the region, project, population and the expectations of the organization. I would better plan the tasks so that I can take advantage of online resources before being isolated. I think a better previous management would have led to a greater impact or would have brought the project further.

Community Implications and Further Work

In the short-term, the members of the school left with a better understanding about the cycle of water, its conservation, and how contamination from chemical fertilizers and pesticides affects the ecosystems and their own health. The members had the chance to meet other producers from neighbouring municipalities, also part of the ELIGESSAN project, who transitioned into organic practices as well. I believe that the reunion empowered and motivated them to keep protecting their land.

There is little knowledge about the tree cover in the region, therefore the guide of the native species found in the nursery hopes to fill this knowledge gap. It will also be easier to teach future members of the nursery, and will bring a higher commercial value when selling the trees. Part of my research also focused on silvo pastoral agriculture, which helps restore the soil and water sources, plus protects the cattle from the heat. This method has been very successful in

many parts of Colombia and the region of study could be an area of implementation. The team of the university can benefit from this information and apply it in the workshops once funding is attained.

In the long-term, I hope that there will be more people participating in restoration projects in the region to protect their water bodies and their own health. I hope that while more people, especially young adults and children, become aware of the benefits of conserving their native species, more tree nurseries will appear thus expanding the positive impacts and maintaining the ancestral knowledge. The biggest problem presently is the lack of consciousness about the importance of protecting the environment to prevent further disasters in the future.

With more education, the ecosystem of the páramos can be restored, including the nutrients in the soil, and decrease the risk of droughts in the summer.

The Universidad Nacional de Colombia plans to attain further funding to continue with the schools, thus increasing the number of people that produce organically. Hopefully the workshops will extend to other municipalities targeting those who do not already use agro-ecological techniques. The main long-term impact desired is for the future generations to have land that is healthy and offers all the services a healthy ecosystem does.



The people in the municipalities whom I worked with are genuinely worried about the **deforestation and soil deterioration** that current conventional farming techniques are leading to. Ideally the native tree association will make use of the guide and further complete the missing information as more professionals work with them. In a future, this guide could be used in the schools to get the kids involved in restoration projects. This community can be an example to others if the work continues.

Also, the workshops carried out deepened the understanding of the importance with water and thus help mitigate the impacts of climate change. Farmers are very dependent on the weather patterns for the growing of their crops. Presently, there are already changes in climate which are confusing planting and harvesting times, and have cause drought problems.

The projects since it started has created links between the community of campesinos and indigenous communities. Although both communities live in the same region, their cultures are quite different and can be reflected in the management of the land. The meetings allowed the groups to learn other ideas interchanging their experiences and strengthening their relationships. Additionally, the empowerment of female roles has changed over the course of the project as you see more women than men in the meetings and workshops who are interested in taking more leadership outside their homes.

Next Steps

The ideal would be the creation on policy banning all chemical pesticides, fungicides, fertilizers and agriculture products that are harming the health of the producers and consumers, and are deteriorating the soil and environment. Although this might not happen anytime soon, the increasing number of organic farmers and the growing interest of the consumers are changing the direction of the market. In Pasto and even Bogota, chefs are interested in buying organic potatoes from local farmers and use it to sell “a story” on a plate. This way, people who live far from the farmers can support the small farmer stepping away from commercialized industrial monocultures that use chemicals. I believe that the most important way to get a policy change is to change the population’s mind first and shift the economy to what is

preferred. The more people who are educated about organic, the more people will buy it and hopefully the government will act favouring it.

From industrialized agriculture, I find the largest risk to be on the health of the humans and the contamination of their surrounding environment. The negative impacts of these chemicals are not deeply known and tend to be washed off to water bodies dispersing the toxicity to who knows where. Most farmers do not know the consequences on their health and misuse them without proper protection. It is hard to trace the contamination, which makes it harder for even an organic farmer to fully cultivate organic. People everywhere need to be aware of the negative impacts of these chemicals that are used everywhere and every day. Unfortunately, the industries that produce them control the agriculture industry and influence in policy.