

St. Lawrence University

Facundo Rivarola, Class of 2014

Project Title: *Irrigating the Past, Harvesting the Future: Rain Water Irrigation System and Community Garden to Ensure the Native Achés' Long-term Food Security and Self-sufficiency*

Project Dates: June-August 2014

Country: Paraguay

Background: Native Achés are a relatively small ethnic minority in Paraguay who live throughout the eastern forest of the departments of Alto Paraná and Caaguazú. Traditionally, Native Achés were hunter-gatherers; however, they were displaced from their ancestral territory numerous times and, until recently, many of them were kept as enslaved workers in the cotton and soy bean fields owned by landlords with close connections to the military regime of Alfredo Stroessner (1954-1989). Nonetheless, Native Achés were determined to fight for their liberation and recognition, and in 2010, they won a lawsuit against the Paraguayan State in parliament. Finally, after decades of resilience, the Paraguayan State returned the Achés' ancestral land, the forest that they call "Koetuvy."

Unfortunately, recovering their ancestral land did not put an end to the Achés' struggles. Since the recovery of their forest, the Achés have faced many difficulties such as mass migration, the loss of cultural and ethnic identity, impoverishment, and food insecurity. These difficulties have occurred at the same time that their forest has been constantly threatened by the expansion of soy monoculture and illegal deforestation. According to a relatively recent study, only 5 to 8% of Paraguay's northeastern forest remains; the rest "resembles the rolling hills of a green desert" (making reference to soy monoculture). Ultimately, because of deforestation, water pollution, and reduced biodiversity and wildlife, the Achés can no longer depend on their traditional hunting-gathering lifestyle to survive. That is, food insecurity is among the community's most urgent needs. Due to these factors, the population size has been declining, and today only about 150 residents continue living in the community. Only an alternative food supply and water collection system can bring peace and immediate stability to the Aché community of Koetuvy.

Opportunity and Need for Project: I had the privilege to be introduced to the Aché community of Koetuvy one year ago while carrying out a two month ethnographic field study as part of my Global Studies major honors thesis. During this period, I got to know the community members and, at the same time, learned about their persistent struggles while experiencing their living conditions. Since then, helping the community has become a personal objective. I have stayed in communication with the community through Margarita Mbywangi, one of the community leaders. Margarita is the first Aché woman to lead the community, and she has become a well-known local native indigenous rights activist. During an interview, Margarita, who was kidnapped and sold to landlords when she was 7 years old before being liberated at the age of 20, shared with me her vision and worries for the Aché community: "Our struggles did not end when we got back our ancestral land, today, our struggle is even more complex. We can no longer live from the forest, there are less trees, less wild animals and no fish in the rivers... we not only have to survive, we also have the responsibility to protect nature. We are facing the difficulty of preserving our traditions and ethnic culture while balancing through progress. We cannot live from pity, we want to work and be self-sufficient."

Project Concept: Margarita's words inspired me to find a way to bring about peace and hope for the Achés' future as a community. After consulting with Margarita, we came up with the idea of building a community garden based upon a thorough ethnographic study of traditional food supply, local seeds, and crops. This will help preserve the Achés' traditional food supply and local species that are threatened by soy monoculture, while increasing biodiversity and taking the most advantage of the local resources. The community garden will also contribute to creating the first formal documentation of Achés' great knowledge about their natural environment, a resource that can be passed down to new generations and to Paraguayan society instead of being lost. Another important part of the project is identifying a water supply for irrigation, which is a challenge in a community that has a single source of potable water. Although there is a water scarcity, there is plenty of rain that can be stored from the rainy season. The project will use a simple and affordable technology to collect rain water that can be used not only for irrigation, but also for other basic needs such as bathing and cleaning.

Project Details and Implementation: This project aims to work closely with the community members to build a community garden (based on local seeds and Achés' traditional food supply) with a rain water collection system for irrigation and other basic community needs. Six volunteers from the Agricultural Studies Program at the Universidad Nacional de Asunción (UNA) will also participate. Based on my communications with the UNA agricultural studies department, there is great interest in promoting and supporting the project. Besides the volunteer crew, a minimum of 20 young adults from the community will be pre-selected by Margarita and other community leaders to help the university volunteers with the physical process of building the garden and water collection system. In fact, we will encourage as many members of the community as possible to participate in all stages of the project. Although most of the community members are bilingual (Spanish/Aché), Margarita and other community leaders will take the responsibility of translating for the volunteers during the project. I also contacted Soledad Martinez, an agricultural engineer with previous experience building community gardens in rural marginalized villages, and she has expressed interest in working on project development and assessment. This will include

offering community training in building and maintaining the garden, providing professional expertise in selecting local crops, assessing location, soil and water supply, and installing the rain water collection system.

The project will involve three stages. The first stage will take place during the month of June, when I will meet with Ms. Martinez to set up the volunteer crew with the help of Agricultural Studies Department at UNA. Once the volunteers are selected, we will have a work team meeting to plan the logistics and discuss the project goals and objectives. The volunteer team will be divided into three groups. One group will gather ethnographic information from the local community members about their traditional food supply in order to pre-select local seeds and species to be used in the garden. The second group will be in charge of finding the best location for the garden based on the local environment and calculating the right size for the garden to produce sufficient food for all 150 community members, as well as gathering all necessary supplies and tools. The third group will be responsible for identifying the best place for the water collection system and calculating the potential levels of water supply, in addition to gathering all of the necessary supplies. All three groups will be closely monitored by the agricultural engineer. During this stage, field visits to the community will take place during the weekends (Friday-Sunday afternoon) to avoid disturbing the volunteers' academic week-day schedule. Group meetings and briefings will take place two times a week (Monday and Wednesdays) while volunteers are not in class. During weekend field visits, volunteers will stay in a Bed & Breakfast (B&B) in the town of Kuruguaty, about 3.5 hours from the city of Asunción and 45 minutes from the Achés' land. Accordingly, volunteers will travel to the site by taking the local bus from Asunción to the town of Kuruguaty. While in Kuruguaty, we will rent a local cargo-car and driver (common in rural Paraguay) to drive us daily from the town to the Achés' land. Project participants will eat their meals in the B&B and/or in town (please see attached budget).

The second stage will take place during the month of July and will consist of 1 to 2 weeks of community training, to be determined based on community needs. During the training we will discuss the community's short- and long-term goals, followed by team-building activities to encourage the integration of volunteers with local members. These training sessions and activities culminate with a gathering of the entire community to kick off the physical work part of the project, which will be the start of the third stage. During this stage, volunteers will stay at the B&B in the nearby town, and transportation will take the same form as during Stage One.

The third stage will take place mid-July–mid-August because this period of time coincides with Paraguay's growing season (Southern Hemisphere). At this stage of the project, volunteers will set up campsites on the Achés' land in order to have better access to the work site. Food will be provided by gathering supplies from the nearby town every two days (or as needed). It is also important to mention that Stages Two and Three will take place during the volunteers' semester break, meaning that their participation in the project will not interfere with their academic schedule. Accordingly, this stage will consist of building the garden and the rain water collection system. Volunteers and local members will be divided into two teams (potentially of 10 members each). One team will be in charge of building the garden, and the other will construct the rain water collection system. At the end of the physical work stage, we will gather the volunteers and community members to participate in a celebration ceremony.

Potential Outcome and Sustainability: Having previously witnessed the determination and resilience of the Aché people, I am confident that this project will have high community involvement and great potential to make a lasting impact for all residents. Building upon Margarita Mbiwangi's vision of protecting nature and balancing Aché traditions with progress, this project will: help preserve the Achés' ancestral food supply and local biodiversity; create a formal documentation of the Achés' extensive knowledge of their local environment; and provide an alternative water supply to the community that can be used for both irrigation and other basic community needs. Furthermore, there will be three strategies that the project will integrate in order to ensure the long-term sustainability of the garden in future growing seasons. First, the garden will use local seeds that can be easily accessed at low cost to the community, since they can be found on site or retrieved from the forest. Secondly, the agricultural engineer will also plan to grow plants that generate seeds to be reused, or plants that do not die when harvested (e.g., fruit trees), which can supply resources beyond one season. The third potential strategy is to plan ahead and dedicate a percentage of all harvested crops for the Achés to sell in the nearby local town through an agreement with local businesses, thereby providing income for buying new seeds for the next season. The UNA volunteers and I will take responsibility for negotiating a fair agreement between local businesses and the community before the end of the project. Another important outcome is that the project will also provide training and experience for the community, which will contribute to the long-term sustainability of the garden. It is very important to highlight that UNA volunteer students will have the opportunity to exchange their professional knowledge with the Native Achés, who have extensive traditional, and equally important, knowledge. This could help not only to increase appreciation for native indigenous knowledge but, most importantly, could potentially create a lasting bond between the UNA students and the Aché community, which would strengthen the project's capacity to provide plentiful food and a more prosperous and peaceful Aché community in Koetuvy.