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Environmental Restoration in Amazon, Ecuador
Katherine E. Jones
Engaged Learning Project: Final Report

Project Summary

This past summer, I worked for six weeks on an environmental conservation project in the Amazon Rainforest of Ecuador through UBELONG, an international volunteer organization. I was blessed with the opportunity to take what I had been reading in environmental economics textbooks and apply it to an experience far outside of my comfort zone. The site I worked on was a 6,200-acre reserve called Jatun Sacha, which was set aside by the Ecuadorian government in 1985. During these six weeks, I was able to immerse myself in an entirely new culture while helping further the efforts of Jatun Sacha. My experience was highly educational and gave me a new way to look at natural resource use and environmental conservation.

Conservation in a Developing Country

Often times the concepts of development and conservation conflict because development is (in theory) inextricably linked to greater consumption of natural resources. Katrina Brown, a developmental studies expert, challenges this theory in an insightful article that attempts to link the ideas of conservation and development. Brown introduces the idea of neo-liberal conservation, which stresses connection between human needs and conservation solutions. This new outlook on conservation argues that areas protected by top-down policies are less successful because they ignore the local resource users. Different approaches to uniting the concepts of conservation and development, Brown asserts, are necessary based on how the problem of natural resource use is perceived by the indigenous population.

Through my discussions with local Ecuadorians, it was clear that they perceived the problem to be the level of poverty that resulted from the extensive natural resource use. Possible solutions to address this problem, contends Brown, involve utilizing the local community to coming up with income-generating activities that allow the ecosystem to remain untouched, such as eco-tourism. In cases where overpopulation is the perceived problem, it is better to use policies that limit the community member's access to natural resources in order to promote development (Brown, 2002).

Over the last several decades, non-governmental agencies have become the main agents of change in the Amazon Rainforest. Oliver Coomes, an environmental economist, decided to take a closer look at several internationally sponsored programs focused on conservation (Coomes, 1997). Coomes wanted to understand whether it was possible for these programs to accomplish their mission of creating innovative conservation solutions that actively benefited the local population. In his article, Coomes highlights the importance of approaching each community differently based on historical and economic factors. He states that every community has a different access to environmental resources and markets, which means that development agencies must approach the natural resource situation differently everywhere. In the Brazilian region of the Amazon, for example, a boom market was created around wild rubber because of its high expected return. This boom market resulted in a dramatic depletion of the resource (Coomes, 1997). In the case of Jatun Sacha, most of the land that was cleared was used as cattle grazing acreage, a decision that will impact the area for centuries. The area will never grow back to the primary forest that was cleared and the soil will bear the scars of erosion for a very long time.

A Historical Perspective

The Napo Province of Ecuador, where Jatun Sacha is located, receives 200 inches of rain per year, with rainfall for 200 days of the year. The rainforest in this region is termed a biodiversity hotspot because it naturally contains 0.5% of the 1500 species of vascular plants in its environment and it has lost over 70% of its primary vegetation due to human activities. A large portion of this vegetation loss has occurred in the last 45 years. The Amazon Rainforest, according to Coomes, gained international attention from NGOs in the 1980s, when a large influx of miners and cattle ranchers moved into the area. Since then, environmentally focused organizations have been warning people about the damaging effects that rapid deforestation, cattle grazing, and oil drilling are causing for the rainforest. Through their advocacy, they have been implementing innovative solutions to make conservation a reality.

Douglas Southgate highlights the profound damage done in Ecuadorian wetlands in his article entitled 'Promoting Resource Degradation in Latin America' (Southgate, 1992). Southgate focuses first on one of the largest impediments to conservation and development in the Amazon: land tenure agreements. In Ecuador, a large percentage of the land belongs to the government, but it lacks the resources and manpower to manage all of the land. As a result, people often build homes and use the land without regard to land titles. This creates what is known in economics as "the tragedy of the commons." This concept helps to explain the apparent lack of respect for resources that are available for public use. When local communities cannot be secure in the ownership of the land they have cleared, the local population has little incentive to conserve the land's resources. A prime example of this indifference is the use of irrigation water in the region. In order to further development in the agricultural sector, the government reduced the cost of water to almost nothing. Instead of promoting development, it

has led to a massively inefficient waste of water in the areas around the rainforest. Though the government recognizes these issues, it is rare for it to grant a formal private property title.

Southgate contends that to rectify the situation in Ecuador, the government must expand scientific education programs and research opportunities within local communities. Jatun Sacha places a large focus on engaging the local community in the projects it's doing. The reserve's center for conservation (which will be discussed in greater detail in the following section) serves as a hub for local researchers and university students who are involved in environmental conservation research. Most of the research focuses on the soil erosion that has taken place as a result of deforestation. Southgate refers to soil erosion as perhaps the largest environmental issue facing the Ecuadorian Rainforest today because it has the ability to destroy the agricultural sector of the economy (Southgate, 1992). Learning the historical background of the Amazon Rainforest in Ecuador was key to understanding the significance of the work that I did during my six weeks in Jatun Sacha.

Jatun Sacha- An Overview

In 1985, the Jatun Sacha Foundation opened its first conservation project at Jatun Sacha Biological Station and Reserve, located in the Ecuadorian Amazon Rainforest. It was an historic event as it was the first piece of land in Ecuador set aside for the purpose of reforestation, conservation, and education about environmental stewardship. Today, the Amazonian Reserve is one of five reserves in the country. The Jatun Sacha Foundation is a self-sustaining institution that runs without funding assistance from the Ecuadorian government. The foundation relies on generous donors, hardworking staff members, and hundreds of volunteers to run the various reserves.

Until the land was set aside in 1985, it was used primarily for cattle grazing and oil drilling. Jatun Sacha was tasked with working within difficult conditions to rebuild and restore the forest to its natural balance. An important concept for understanding the work done at Jatun Sacha is the different between primary forest and secondary forest. Primary rainforest, or untouched forest, is incredibly diverse in flora and fauna and is so dense that walking through it requires wielding a machete. Less than one quarter of Jatun Sacha remains primary forest because of the deforestation that took place before 1985. Staff members use this crucial area to collect roots and seeds of plants that are not present in secondary forest. Over the last 28 years, they have been able to grow back a large portion of the cleared land with secondary forest. Secondary forest is, simply stated, what grows after the original ecosystem has been destroyed. It is characteristically far less dense and contains far less diversity in plant and animal life. It is estimated that half of the 6,200 acres of the reserve qualify as secondary forest.

Most of the volunteer work we performed took place the Center of Conservation for Amazonian Plants (CCPA), a thirty-acre section of the reserve that houses highly concentrated areas of important plants. The conservation area was divided into six sections, ranging from the medicinal plant area to the area for hallucinogenic plants (for the shaman's use only). The space gives researchers easy access to a wide variety of valuable plant life and provides tourists a fun way to learn about conservation. The CCPA is also home to an organic garden. Many of the fruits and vegetables are sold in local marketplaces, while the rest goes directly to the Jatun Sacha kitchen.

Ten staff members, headed by Alejandro Suarez, work with volunteers to maintain CCPA and the rest of the reserve's land. Job descriptions of the staff members vary by season, and they can change dramatically from May to September, when the area receives about three-quarters of

its total rainfall. Many of the staff members are of Quechua decent, the largest indigenous culture in South America today. As a result, my time was not only spent relearning Spanish, but also learning some Quechan phrases. One particular staff member, Jonas, was completely devoted to working with volunteers on projects around the reserve. Jonas spoke only Spanish and had an absolutely amazing understanding of nature. Though we had a slight language barrier, our conversations made my time at the reserve an unforgettable experience.

My Experience

For six weeks this past summer, I woke up underneath a mosquito net to my waterproof watch's alarm. Slowly I rolled out of my bed, searched for shoes, and made my way outside the tiny cabin, trying not to wake my roommate. At this moment I paused each morning to drink in the beauty of sunrise under a rainforest canopy. It was an image that a camera could never truly capture. Fast-forward through a simple breakfast at 6:30am and we arrived at the beginning of our workday.

Every day on the reserve was different. We preformed about nine different jobs around the CCPA, most of them involving maintenance of some kind. Some days we worked to cut out harmful undergrowth from areas with highly specialized plants, such as rubber trees and bamboo plants. Other days we worked on parts of the composting process such as mixing the compost pile or transferring the prepared compost to the organic garden. Still other days involved the more academic pursuit of logging the different plants, translating the uses of each plant, and creating an interactive tour guide for visitors who did not speak Spanish. Every Friday, however, we worked on the same activity. All of the volunteers would all grab a rake and a wheelbarrow and collect fallen leaves from the specialized areas of CCPA. These leaves would then be deposited in the compost area. The staff members utilized an open patch of canopy to create a

compost pile that received enough rain to be turned from leaves to compost in a matter of months. My favorite workdays involved a project that a volunteer started during his time at Jatun Sacha. He planned the construction of a chicken coup made from materials of an older home on the reserve. We spent many days helping with the careful demolition of the home and transporting usable pieces half a mile down the trail. Though I left before the completion of the coup, I have heard that the reserve is starting to produce its own eggs through the new shelter.

My time at Jatun Sacha was not without its challenges and setbacks. During my first week volunteering, I was confronted with a large physical challenge. Our volunteer team was tasked with hauling rocks up from the Napo River bed onto the trail above in order to rebuild the trail after an especially intense rainstorm. For about six hours each day, we carried wicker bags full of rocks to various sections of the eroded trail. Coupled with a 'traveler's flu,' a slow acclimation to the language, and large culture shock, the week proved to be an immense challenge. As weeks went on, however, I adjusted to my new surroundings, began understanding more of the language, and made close friends with whom I stay in contact to this day.

One of the projects that I took on with my fellow volunteer, Mariella, was an attempt to catalogue the various medicinal and hallucinogenic plants in CCPA. We also worked to create a road map through the dense area so that visitors could understand the value and uses of the plants they encountered. The end goal was to have a guidebook, translated in both Spanish and English, which made it easy to navigate CCPA without a trained eye. We encountered many setbacks during this project because of the multitude of half-finished research projects done by past volunteers on the plants we were trying to catalogue. In order to find information on a plant, we had to look through about five different books and use various identification methods such as the

scientific name or Quechua name. Sometimes we were forced to rely only on diagrams of the plant's leaves.

It was through this experience that I found the structure and day-to-day running of the organization to be frustratingly limited by budget constraints and the high volunteer turnover rates. Most volunteers, like myself, stay for less than two months. This limited time frame requires full time staff members to train and supervise volunteers who will leave in a matter of weeks. New projects must be initiated and implemented by volunteers, who have the most limited understanding of community needs, because staff members do not have time. This leads to a great deal of inefficiency and ineffectiveness.

On the other hand, it was immensely rewarding to work on projects that pertained to the issues I had read about before I left for Ecuador, such as soil erosion and lack of education in the realm of conservation. I saw first hand the difficulties of planting on highly eroded soil and the ineffective research that had been done on environmental issues in recent years. My cataloging work was one of the most rewarding aspects of my time. Before Mariella and I drew up the guide for the reserve, there was no concise guide of plants within CCPA. The guide, however difficult to put together, can now help people who do not speak Spanish understand the importance and value of the plants they see in CCPA.

I will never use some of the skills I learned at the reserve again, like wielding a machete or designing a chicken coup. But I do not think it was about the hard skills I learned during service, I think it was about immersing myself in a completely foreign culture. Through this experience, I was able to drop every preconceived notion of right and wrong and simply experience the way other people live their daily life. I may never hold a machete in my hand

again, but I will forever appreciate the means by which many local Ecuadorians make their living.

A Reflection

My guide Jonas holds out a leaf for me to take. It appears normal, except at the base of the leaf there is a fuzzy sphere. 'La casa de hormiga!' he says excitedly. At this point in my trip, we were standing in the middle of the botanical garden at Jatun Sacha, and my Spanish vocabulary might as well have been in Dallas. Before I got the chance to clarify what was in my hand, Jonas peeled back the fuzz and a swarm of tiny ants emerged. Suffice it to say; I never again forgot the Spanish word for ant.

As the weeks passed and my vocabulary made its way to Ecuador with me, I could not get the image of the ant house out of my head. The question occurred to me – why, as we think about the lives of ants, do we confine the ants' house to that small area? I saw hundreds of ants every day, and it was clear that most of their lives existed outside of those fuzzy orbs.

I started watching ants during my free time, odd as that may sound. While I observed them I realized: these ants are not so different from humans. They wake up in the morning, work hard so they can feed themselves and their family, and live in community with others. The most striking similarity that I found was that we confine the ant's 'home' to a tiny sphere in the same way that we confine our own 'homes' to a relatively small part of our reality. What would happen if people thought of every cubic inch they encountered as 'home'? Think about this for a moment; think about every space in the world you have occupied at some point. If we thought about this area as our home, would we take time to clean them up in the same way we clean our small 'homes'?

During my time in the Amazon, we worked on about nine different projects for the reserve, but they all had a common theme: cleaning up, and leaving something behind just a little better than you found it. Whether cleaning up medicinal areas with a machete or creating compost to grow endangered plants, our work was all about helping the reserve get one step closer to its vision, a vision of an environmentally sound world. In the past, decisions made regarding the environment have caused the climate to shift and caused necessary natural resources to trickle towards extinction. I make that statement not to cause a feeling of helplessness but to give a starting point from which we, policy makers and individual citizens alike, must make decisions. I see it as a point of empowerment. We stand on an important precipice in which we have the opportunity to sustainably develop, solve food security issues, and greatly reduce the number of people living below the poverty line. How successful we are in overcoming these obstacles will be determined by the decisions we make from this moment.

Though my trip focused on finding different solutions to environmental issues, I have returned to Dallas to find that my perspectives have changed and expanded in many facets of my life. I fell in love with Ecuador. During my weeks in the rainforest, I grew to love each and every staff member and volunteer, but more than that, I grew to love the flow of life so different from my home. There, time existed outside of a clock. Meals were served when the cook was ready, and we went to work only when everyone had finished their meals. It was never about rushing through the day, but seeking the joy in each moment.

Conclusion

During these weeks, I was stretched as a person. Everyday I woke up asking questions, challenging theories, and having my eyes opened to perspectives I never would have thought of previously. As I slowly started to understand the language, I was able to talk with locals about

issues they found important. I learned how much the community members valued education for their children. I learned that property rights in developing countries can hinder environmentally sound initiatives and that growth in GDP is not the same as fewer people below the poverty line. Most importantly, I learned that in order to approach development in a sustainable fashion, it is necessary to investigate and understand the social, political, and historical aspects of the community in which you are working.

I found things at the reserve I never expected to find. I have always cared for the state of our fragile earth. But in that rainforest I found what happens when you break the limits of the rainforest's resilience, stop, turn back, and figure out how you can fix the damage that has been done. That is the place were reverence for the forest is found. I also learned how much nature gives back to us everyday. There is a tree in the medicinal area of CCPA called Lan Iqui, which produces Sango de Drago (blood of the dragon). Rubbed into the skin, it will heal the worst blister in hours. Another plant in the garden can be boiled and drunk to regulate insulin levels. The plants there did not just help regulate CO_2 levels in the atmosphere; they gave the local community members resources to survive.

I think my time in the rainforest reinvented for me what it meant to be a steward to the earth. You can read every textbook about environmental degradation and economic development and never truly understand it without seeing it first hand. I feel like I have learned to discern the colors between the seemingly black and white sides of environmental issues. It is not always pretty— these issues that we face are real and increasing– but it is motivating. It has inspired me to spend my life creating solutions and sharing my experiences with others. Perhaps my advocacy will change nothing- but maybe, just maybe, the people with whom I talk will shorten their shower by a few minutes from now on, or walk the extra 10 feet to a recycling bin- and my

time will have been well spent. My motivation is now shaped by the faces of the many incredible people I met during my travels, and I will be forever grateful for all of the support I was given by the SMU community.

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