

Cultural Assessment of Reforestation Practices in Rural Eastern Paraguay

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After one year of working in Noviretá, Paraguay with farm families on reforestation and soil conservation projects, the focus of my work changed. I owe this partially to the experience of taking farmers from Noviretá on an excursion to a demonstration farm. This farm, SEPA, started by former Peace Corps Volunteers, is run entirely by skilled Paraguayan farmer extensionists, or *tecnicós* from communities similar to Noviretá. Rural communities in eastern Paraguay are faced with problems adapting to environmental problems associated with deforestation and population growth. The majority of rural Paraguayans are subsistence farmers whose traditional swidden-fallow methods of farming have been replaced, out of necessity, with intensive agricultural systems. Without any technical support from the government, small scale farmers are struggling to grow quality food crops on their severely degraded land.

At SEPA, farmers from Noviretá learned low risk, low cost methods of improving soil quality from fellow rural farmers. A portion of the excursion was devoted to the importance of reforestation and simple examples of established systems. The focus of this segment was a demonstration of transplanting tree seedlings, quickly, free, and with a minimal amount of work. The *tecnicó* dug natural regeneration from a nearby degraded forest, and with two cuts of his machete, leaving a stake, prepared it for transplanting. A few farmers from Noviretá had used natural regeneration in a similar manner when establishing agroforestry systems, and were nodding in agreement. Those participants, who had not yet utilized this resource because of fear, or lack of land, were interested in learning more about it.

During the first year I lived in Noviretá, I had attempted promoting tree nurseries, like most agroforestry extensionists. And, similarly to other development workers, I was unsuccessful. This encouraged me to examine the feasibility of tree nurseries and other options, if any, in reforestation projects.

In chapter 1 I will discuss the study area, Paraguay. First, I discuss the geography and brief political history, followed by the economic and environmental problems in Paraguay. Next, I continue with a discussion on Noviretá, the rural farm community that I lived and worked in for two years. Included are geographical, social, and environmental descriptions of the community as well as current agroforestry practices.

Finally, I conclude with a discussion on reforestation programs in rural Paraguay, focusing on the establishment of tree nurseries. Together these topics form the background are needed to understand rural Paraguay and reforestation projects.

Chapter 3 includes the methods for the initial stages of the study. A brief discussion explaining participant observation is followed by the results gathered from the initial stages of the study. I continue to explain my findings and the importance of further studying tree nurseries, their success, and alternatives in reforestation projects in rural Paraguay.

After the initial general observations described in Chapter 3, I explore them further in Chapter 4. I begin by discussing unstructured interviews that were held in Noviretá and the data sheets used in collecting this information. Next, I discuss informal interviews conducted in other rural communities in Paraguay and descriptions of these study areas. Finally, a description of the survey involving Peace Corps volunteers working in the agroforestry extension program is presented. 3

Chapter 5 begins with the results of the resources and tree species used in specifically Noviretá and also in other rural Paraguayan communities. This is followed by a comparison between tree nurseries and natural regeneration use and practicalities. I conclude with examples of reforestation projects in other parts of the world that have utilized natural regeneration and also examples of reforestation projects that have failed, and why they have failed.

Case studies of three farm families and maps of their fields are found in Chapter 6. A discussion of their family resources and agroforestry systems they established using natural regeneration is included.

The conclusions and recommendations for this study are discussed in Chapter 7. Recommendations for future Peace Corps agroforestry extensionist training are discussed. Also included is a guide for working with specific tree species, in the form of natural regeneration, in rural Paraguay. The appendix with statistical results follows this. My objectives for this study are to examine reforestation projects in rural eastern Paraguay, especially promoted by Peace Corps agroforestry extensionists. Through studying the reforestation practices of Paraguayans I hope to gain an understanding of how we, as extensionists, can improve our methods of working.