

## Tropical Reforestation program

### Presenting the Concept of Silvopasture to Cattle Ranchers

We are explaining to an influential cattle rancher the benefits of planting trees on pasture land. This is not a complete solution to the local drought, but it is a foot in the door. In the photo at right, we meet with Chalco, a cattle rancher near the town of San Andreas de Peten (he is on the left in this photo). He is willing to try planting trees on his ranch. The immediate goals are to cool the land by increasing shade, raising moisture levels in the fields, thus restoring the soil and allowing more grass to grow, and thus more feed for his cattle.



Here is a close up view of the “soil” on this ranch. His “pasture” is dry, rocky and highly eroded. This is typical of tropical soils that have been overused for cattle grazing. This rocky “soil” is the inevitable result of years of over-grazing, erosion and neglect. A strategy of silvopasture will allow him to transform his rocky fields by planting trees and creating a broken forest land. Once an example is established of ranch soil healing, other ranchers will notice and imitate this method.

Silvopasture integrates trees and pasture into a single livestock system. This method far outpaces any grassland technique for counter-acting the methane emissions of livestock. Pastures with trees sequester five to ten times as much carbon as those that are treeless, storing it in both biomass and soil. Ranchers benefit from livestock combined with trees, orchard products, such as nuts, fruit, and mushrooms, generate income at different times during the year.



With the introduction of silvopasture, the health and productivity of the land and animals will improve. This offers more water retention, more biodiversity and less erosion. More birds will be present which helps to control insects. There are more microbiota creating healthier soil, plus the land produces more income for the farmer. For rural Guatemala, these are important goals.



This is a cornfield alongside eroded pasture. You can see that a failed attempt to grow corn took place in this field. This rolling hillside once supported a forest. The hillside was logged and it became pasture. A field like this can scarcely support agriculture without rain. It is now too dry and desiccated. As a result of many situations like this, tens of thousands of local people have succumbed to the hunger and in some cases even starvation after several seasons without rain. In some cases children have died from nutrition-related illnesses.



We examine with Chalco how much healthier his land is in locations where he has a few trees.

Another big issue is that rural residents use ground water for drinking, but water tables are dropping and the lack of rain is forcing them to look deeper for water farther and farther away. Water scarcity has led to an outbreak of waterborne diseases. Given that the crops have dried up that once earned money for farmers so that they could buy medication and transport, they often cannot access essential health services.

Some residents in the affected areas suffer from malnutrition because they rely entirely on the donated corn that humanitarian organizations supply.

What we see is that logging and deforestation are causing record levels of drought across Central America. This in turn is drying the land and making agriculture difficult if not impossible for local residents. Thus it is logging, combined with the force of global climate change, that is making life difficult if not impossible for the Mayan people to continue in their ancestral homeland. Forced immigration results that is a product of climate change, amplified by misguided local land practices, that is causing contention at our American border.



At the same time the U.S. government is cutting the funds that might have helped these poorly educated rural people from understanding how they have exacerbated this problem by their own misguided forest and agricultural practices, and these in fact are what they are fleeing.

For a larger treatment of this problem at the website of ClimateYou, March 13, 2019. See: <https://www.climateyou.org/blog/2019/03/drought-in-guatemala-by-citytech-blogger-evelyn-ramirez/>