Tres Vientos: A Permaculture Model of Raising Livestock

Nicaragua
Jacqueline Ruiz
Organization type:
for profit
Budget:
< $1,000

- Biodiversity
- Green business
- Rural
- Sustainable agriculture
- Sustainability
- Waste
- Water Supply

Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

Tres Vientos Permaculture Model of Raising Livestock applies the principles of permaculture (ecologically sustainable permanent agricultural methods) to multi-species grazing. Goats and sheep are grazed in accordance with the principles and ethics of permaculture for market sale (meat, hide and milk). Nicaragua has a growing industry of permaculture, but focused on cultivating plants. Tres Vientos would be the first learning farm to combine diversification of grazing with an ecological design sensitive to the earth. Additionally, tourists and permaculture students will learn from our living laboratory. Lastly, Tres Vientos would become a model multi-species permaculture farm, allowing other farmers to duplicate and profit from it's successful methods.

About Project

Problem: What problem is this project trying to address?

Nicaragua is the largest and poorest country in Central America. Between a revolution in 1979, and strong political changes in government, the country has undergone drastic financial hardships. Estimates of underemployment run from 47% to a little over 70%. Over half of the country's economy is based on agriculture. Tourism is a growing industry, and each year the number of visitors to Nicaragua increases. Tres Vientos is located in an area known as El Crucero. The municipality of El Crucero can be easily reached from the capital city of Managua, heading down the southern highway. El Crucero is located at an elevated level, reaching an altitude of over nine hundred meters. As a consequence of this height, a cool, strong wind runs through this region. Although it is only a thirty minute drive, the climate of El Crucero is completely different from the climate in Managua. Forests and lush vegetation give the El Crucero region a natural image. Another consequence of its height is the presence of clouds at the higher elevations. Although the clouds are not permanently present, this does create a unique climate similar to that of a cloud forest. Coffee plantations are the major employer in the area. Local farmers are struggling to feed their families. Most people are hungry, and a rarity is for peasants to eat three meals a day. The desire to obtain a better standard of living is strong, yet the opportunities to do so are limited at best. Some livestock has been distributed in the area from the government, but the lack of support leaves farmers struggling to understand how to ultilize their animals for economic growth. Tres Vientos has strong support from the local branch of COOPAD. COOPAD is a national organization which supports farmers in developing through husbandry and various other farming activities. We have worked closely on several projects with COOPAD, including teaching rural woman how to make challah bread. Our engagement efforts have started with attending various training programs. Jose Lizandro Madrigal has taken advantage of workshops on animal husbandry, water harvesting and local plant cultivation. The mono-grazing concepts in these trainings have been complemented by self-study of permaculture and research Jacqueline has made available to our team. Alliance building is a key to our success. Through the COOPAD and one-one-one work with rural farmers throughout the region, we have created a substantial foundation of support for our permaculture model of raising livestock. Farmers have verbalized and displayed a willingness to try new methods of raising livestock in order to increase their income. Currently we are engaging in developing partnerships with other permaculture farms, which focus on plant cultivation, such as Project Bona Fide and El Zopilote (located on the island of Ometepe). Furthermore, we are creating an alliance with Finca las Nubes, another permaculture farm, located in San Juan del Sur. These three farms are in reasonable traveling distance from Tres Vientos. In addition, each farm has unique elements, i.e. biodiversity, making us natural partners in supporting each other's work. Also, permaculture principles promotes humans working together to support a healthier environment. Lastly, Tres Vientos has acquired a starter livestock of fifteen goats and ten sheep. The land we own has been resting for several years and has been in Lizandro's family for generations. His family has a history of raising goats successfully, and has passed down effective agrarian techniques to our project.

Solution: What is the proposed solution? Please be specific!

Applying the principles and ethics of permaculture to raising multi-species animals in Nicaragua is a natural progression in the already established permaculture society of the country. Currently permaculture farms in Nicaragua exist, but their focus has been on plant cultivation. Tres Vientos offers the opportunity to increase the magnitude of ecological preservation by being a living model and laboratory for how farmers can co-exist with nature and generate profits with their livestock. Permaculture seeks to harmoniously combine elements of nature so that the land can provide in a much more sustainable manner than conventional land use allows. We are visionaries who are not looking just to see if the land will sustain itself for the next ten years, or even fifty years. We want our precious lands to be sustainable three hundred years from now and beyond. The permaculture alternative is not an economic aspirin, and it is not intended to merely alleviate short term economic symptoms. We will be part of the cure for Nicaragua's extreme unemployment and underemployment. Tres Vientos is dedicated to long term solutions benefiting our local to global partners. Our mission is to incorporate whole-farming techniques and design, helping society understand the value of

multifunctional rural landscapes with regard to multi-species reproduction while creating economic opportunities for farmers. Tres Vientos will not only be ecologically sustainable, but also economically sustainable.

Impact: How does it Work

Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

The largest country in Central America, Nicaragua has a geographic advantage in easy access to both regional and international markets. With a relatively small -- but flexible and growing – economy, agriculture is the foundation for economic development in Nicaragua. Tourism and the financial industry are also beginning to show great potential. The population of over 5.6 million people provides opportunities to expand markets. Tres Vientos can improve agricultural product quality, boost profits, help farmers become more competitive and enable them to gain access to better-paying markets. Multi-Species Grazing The Tres Vientos permaculture model of raising livestock is based on multi-functionalism, the core of permaculture, how resources work in at least in two ways. Multi-species grazing system benefits from complementary grazing functions of the different species, by linking up different species to perform different beneficial ecological functions. Permaculture design is a system of assembling conceptual, material, and strategic components in a pattern which functions to benefit life in all its forms. Goats and sheep are a natural merger under the principles of environmental sustainability and awareness. The diverse diets of each of these animals allow for a natural symbiotic relationship. Goats are useful were scrub has taken over and the intention is to bring back the land to productive pasture. Since they prefer woody plants to herbaceous ones, they will reduce the scrub - thus making the land more productive for other grazing animals. This is done while the goats feed themselves in the process. Sheep prefer forbs (broad-leaved plants) to grass, and goats have a preference for browsing on brush and shrubs, and then broad-leaved weeds. Therefore, grazing sheep and goats together on a diverse pasture can result in all types of plants being eaten, thus controlling weeds and brush, while yielding more pounds of gain per acre compared to single-species grazing. Currently, Tres Vientos has acquired fifteen goats and ten sheep (pelibuey). This is our starter stock and we want to expand our livestock, in order to increase our financial revenue. In addition, we have several acres of land for the animals to move around, allowing us to easily rotate their grazing. Trees & Shrubs Our tree and shrub design is more than aesthetic. Trees are a vital component of our model because they not only keep with the principles of permaculture, but they serve multiple uses. Listed below are some reasons why trees are a feature part of our plan: • provide fruits or nuts; • beneficial insect and wildlife habitat; • firewood; • honey; • lumber, i.e.,to build animal shelters; • mulches; • supplemental livestock forages; and • attract bees to pollinate. In addition, trees as windbreaks serve a multitude of purposes. Windbreaks are dense, tall plantings of trees and/or shrubs that are used to offer protection from excessive winds. Constant winds slow or prohibit plant growth, raise heating and cooling costs and cause stress or harm from exposure to livestock. Windbreaks can block or slow hot, drying winds in summer to protect livestock. They stop or slow soil loss due to wind erosion both directly (as when winds carry soil away as dust). Water needs (of both livestock and forages) are also much greater in exposed areas than in areas protected by windbreak. Furthermore, nitrogen from the result of incorporating trees and shrubs is pivotal to a healthy livestock. Leucaena is an example of a fast growing nitrogen fixing tree with many uses. This tree originated in Central America, and fixes nitrogen gas from the air making its usable to itself, plants and animals. In the nitrogen fixation part of the cycle, nitrogen-fixing bacteria found in the roots of certain plants, convert free nitrogen into substances that other organisms can use. When the fixing process is finished, free nitrogen is converted into nitrates, nitrites, and ammonia. These substances can be used by plants. As the plants become food, the nitrogen can be used by animals. Nitrogen-fixing trees are able to "fix" or take up atmospheric nitrogen (N2) that is not available to other trees. They do this through a symbiotic relationship with certain bacteria-Rhizobia and Frankia--that form nodules in their roots. When the leaves and branches of these trees drop off or are harvested, this nitrogen becomes available to other plants or animals in the ecosystem. Most nitrogen fixing trees are "pioneers" They establish easily on poor or degraded sites. These tenacious trees also grow rapidly, and produce large amounts of nitrogen-rich green foliage in some rather harsh environments. Lastly, Tres Vientos' living fences, planted from trees and shrubs, protect roaming animals and offer shade. One of the many benefits of a living fence, is that live fence posts are far more durable than traditional wooden posts as they are more resistant to attack by termites and decay fungi. Thus, featuring economic savings through the longevity of natural fencing. Gliricidia sepium is a common species in Central America. Due to the ease with which large stem cuttings root and its multiple uses such as forage Tres Vientos will incorporate these trees into our living laboratory. We will teach the establishment of Gliricidia live fence posts by deomonstrating how to plant a few large (1.5-2.0 m) stakes into existing conventional wire fence. These stakes normally take root within a month or so, and educate farmers to allow the shoots to grow for six to ten months before cutting them back. After the first pruning, prunings can be carried out every four to eight months. Shoot pruning at intervals of six to eight months result in woody sprouts that are suitable for use as stakes. Farmers are thus able to multiply live stakes for their fence posts within a year or two after establishing the first live fence posts. Most resource-poor food crop farmers do not have sufficient capital to purchase barbed wire or other fencing materials. As an alternative, farmers can use a number of different tree and shrub species to establish dense, often thorny, hedges to protect their crops. Another alternative is the combination of easy to establish live fence posts and poisonous or unpalatable species. An example southwestern Ethiopia combines Erythrina abyssinica with Euphorbia tirucalli. The latex of E. tirucalli is highly toxic and the plant is generally avoided by livestock. If well established, these natural barriers can deter both animal and human trespassers from entering into the farm. Water Harvesting Harvesting rain water is an economical form of hydrating livestock. Also, in a country where water is not available daily in many rural areas, harvested water provides a practical alternative for livestock. Our initial survey of the topography revealed where natural lows occur in the land, thus offering ideal points to collect water. The preservation of seasonal rainfall is not only an important technique in reducing overhead costs, but also an easily taught concept. One of the ways Tres Vientos wants to harvest water is creating a large catchment among smooth rock areas. Rocks like granite can be used as giant basins to hold the rainwater. In addition, Tres Vientos wants to experiment, in our living laboratory, with harvesting fog for water usage. Fog is a cloud in contact or near the Earth's surface, thus providing an easily attainable source for water. The technology behind fog collection is amazingly simple; massive vertical shade nets can be erected in high-lying areas close to collections units. As fog blows through these structures, tiny water droplets are deposited onto the net. As the droplets become larger, they run down the net into gutters attached at the bottom. From there, water is channeled into reservoirs. Our location experiences frequent fogs, especially during the early hours of the day. We have the potential for having great success since fog does occur for several hours at a time. Tres Vientos has the future capacity to tap into a substantial water base. Though fog harvesting may sound cutting-edge, this system of water collection dates back centuries. Historically, the Egyptians collected both dew and fog by means of a pile of stones, arranged so that the condensation would drip to the inside of the base of the pile, where it was shielded from the day's sunshine. Thus, fog harvesting techniques have had success dating back to early civilizations. EDUCATION & TOURISM The above methods of multi-species grazing, tree and shrub design and water harvesting are key components of Tres Vientos educational and tourist offerings. We look forward to our future visitors. We hope to create solid alliances with other permaculture groups and compliment their work. Students will have the opportunity to expand upon their course work, with exposure and hands-on learning in our living laboratory, focusing on our model of raising livestock in a permaculture setting. Our staff has over twenty five years of working with students internationally, including rural farmers. Tres Vientos offers tourists an opportunity to explore and understand permaculture in regards to raising livestock, through our living laboratory. Tours will be conducted, and opportunities for hands-on involvement will be available through our workshops. The Tres Vientos permaculture model of raising livestock is flexible and can be easily adapted into small scale farming as well as larger farms, and even to individual dwellings. Our dream is for farmers, students and tourists to incorporate their experience and gained knowledge, at Tres Vientos, and make the Earth a more sustainable place.

About You

Organization:
Tres Vientos

About You

First Name

Jacqueline

Last Name

Ruiz

Twitter
Facebook Profile

About Your Organization

Organization Name

Tres Vientos

Organization Country
Country where this project is creating social impact
How long has your organization been operating?

Less than a year

Is the project that you are entering related to this organization?

Yes

The information you provide here will be used to fill in any parts of your profile that have been left blank, such as interests, organization information, and website. No contact information will be made public. Please uncheck here if you do not want this to happen..

Innovation

What stage is your project in?

Idea phase

Share the story of the founder and what inspired the founder to start this project

Tres Vientos has three founders. Our name came about because there are three of us and the location of our future permaculture farm is in a windy area. Wind in several early cultures is associated with change, and we want to change modern farming practices in order to preserve the ecological integrity of Nicaragua.

We each offer an integral talent to our business. Helen is the young college student who is currently working on her business administrative degree. She brings a young intelligent energy to the group, reminding us why we created the farm – for future generations to be able to live healthy lifestyles in preserved ecosystems. Lizandro is the free spirited, deep thinker. As our elder he provides solid direction for our farm. He also has an amazing capacity to extend himself and his work socially. Lizandro is well respected among the local agricultural and social groups of the area. Jacqueline serves as the momentum behind the project. Jacqueline comes from a long lineage of rural farmers, and has a personal interest in helping farmers find viable economic forms of living. Also, her ability to research and write English is a natural compliment to Tres Vientos.

Lizandro has several years experience educating rural farmers. He is the person who came up with the idea of raising livestock and Jacqueline enhanced the model by adding permaculture principles to our project. Collectively, our passion is to change the economic situation of peasant rural farmers while incorporating ecologically sensitive methods of raising livestock.

Social Impact

Please describe how your project has been successful and how that success is measured

We are in the idea phase.

Our intimate contact with local rural farmers in the region lends an ease for us to quickly disseminate permaculture concepts and have these concepts accepted by them. Lizandro has a reputation of trust and is recognized for his intelligence. He is well respected, and farmers seriously take into account what he has to share.

Furthermore, our model easily fits into current agriculture activities. Farmers in the area have already received livestock from the government and non-governmental organizations. These same farmers are looking how to maximize their profits with the animals they have acquired.

Permaculture can be easily attainable. Farmers do not have to invest a substantial amount of money to get started, what they are lacking is the education to exploit their resources in an environmentally sensitive and sustaining manner.

Our living laboratory is centrally located, with public transport frequently passing the main road in front of Tres Vientos, allowing for easy access. Farmers would receive training on permaculture principles and maximizing their revenue through the implementation of principles, such as multi-grazing, while experiencing first-hand our living model.

Furthermore, our goal is to create permaculture co-operatives. Through the establishment of these co-operatives, we will have a foundation for setting quality standards and pricing. This foundation will enable us to further our impact and economic growth by offering our products internationally within a five-year span. The demand for goat meat has dramatically increased in the U.S. and we can offer competitive pricing and quality to this market.

How many people have been impacted by your project?

How many people could be impacted by your project in the next three years?

1,001-10,000

How will your project evolve over the next three years?

Tres Vientos expects to have a quick evolution in the next three years. We have laid the foundation by acquiring our starter livestock and have

considerable land to increase our livestock. Furthermore, our local partnerships with farming organizations is solid and we are currently extending our alliances through partnering with other permaculture farms, which are focused on plant cultivation.

Within the next three years we see Tres Vientos as the trend-setter in the growth of livestock. We expect to have several co-operatives established, increase the income of farmers throughout the country, establish norms for sustainable livestock farming, and be ready to take our commodities internationally.

Sustainability

What barriers might hinder the success of your project and how do you plan to overcome them?

As in any endeavor potential barriers could hinder the success of a project. Our barriers run the gamut from animal bullying to our associates having poor land conditions for animals to graze on.

Tres Vientos specifically decided to use goats and sheep in our multi-grazing laboratory due to the ease the animals have in cohabitating. Other associate farmers could be challenged when introducing animals such as cattle, which may bully some of the sheep, or goats may bully cattle. Normally the bullying is done by one animal of the herd. Our solution is to remove the aggressor. Bullying increases the stress load for not only the bullied animal, but the rest of the herd or flock. The removal of the bully can be seen as a setback, but the economic hit can be recovered once the animal is sold and another animal can be assimilated into the farm.

Famers who have already overgrazed their lands with mono-grazing will be more challenged in initially setting up a permaculture farm. More attention will need to be given to establishing plants that will benefit the soil and more time and resources will be needed to build a sustaining ecosystem. Farmers will have Tres Vientos as support in terms of how to best restore their land. These farmers will have a longer setup period as the land begins to heal from past abuse.

Predators can be a problem. Yet, through our methods this hazard can be greatly reduced. We can recommend suitable dogs to guard the herds, which would be complimented by living fences. Adequate and safe shelter for livestock is another means of reducing the attack from predators. Lastly, most farmers spend considerable time with their livestock and would be quickly alerted if a threat was in the area.

The last great potential barrier that we can foresee is farmers purchasing animals that are not healthy, for example sheep with foot rot. Through our educational workshops we will teach farmers how to select healthy animals and how to keep them healthy. We believe that although barriers will lie ahead, many can be overcome through our educational workshops and our support structure of the co-operatives.

Permaculture is an approach to designing human settlements and agricultural systems that are modeled on the relationships found in natural ecologies. The aims of permaculture are to create stable, productive systems that provide for human needs by harmoniously integrating the land with its inhabitants.

The ethics of permaculture are as follows:

• Earth care – recognizing Earth as the source of all life (and possibly as a living entity) and our valuable home, and recognizing that we are part of Earth - not apart from it. Agriculturalists traditionally exploit soil, plants, and animals, which creates problems both internally (i.e. diseases in plants, soil erosion, declining long-term production) and externally (i.e. pollution from fertilizers, human diseases originating from farm factories). Permaculturalists have introduced new ways of practicing agriculture. These ways are fundamental in restoring a mutually beneficial and healthy relationship between people and the environment.

• People care – supporting and helping each other live in ways that harm neither ourselves nor the planet and develop healthy societies.

• Fairshare – using the Earth's limited resources in ways that are equitable and wise.

The philosophy behind permaculture is one of working with, rather than against, nature; of thoughtful observation rather than thoughtless action. Permaculture looks at systems in all their functions, rather than asking only one yield of them; and allowing systems to demonstrate their own evolutions.

Practices related to permaculture are cost effective and easily attainable in contrast to modern farming practices. Rainwater harvesting is one of the significant way of reducing expenses. The form is simple, less costly and allows easy access to water during the drier season.

Tres Vientos is based on synthesizing sustainable ecosystems while capitalizing on investments. Our healthy business model produces more with less while remaining a good environmental steward. Mono-grazing (one animal grazing the land) forces animals to graze and re-graze, and eventually kill the good nutritious productive plants. With multi-species grazing more profit is available on the same amount of land, while remaining in harmony with the Earth.

Permaculture affords the opportunity to produce ways of increasing animal health, thus increasing the quality of animals raised as well as the profitability. Through our design livestock would be free-range and rain-fed. Animals living in a natural environment suffer less from diseases, thus healthy livestock results in a healthier income. Multi-species grazing not only produces more revenue per acre, but animals tend to result in higher meat production. Meat production gains occur due to better forage when more than species grazes the land.

Nicaragua has had various programs in which rural peasant farmers have received livestock, such as sheep, goats and pigs. Unfortunately, due to lack of education and structure, these farmers are at the beginning of severe earth abuse. The immediate need to produce income has left agriculturalist focused on immediate monetary gain, without the foresight of the devastating environmental impact of over and mono-grazing.

Tres Vientos sees this problem as an opportunity. We want to stop the desolation of our picturesque landscapes and conserve our unique ecological environments. Furthermore, our model inherently attracts rural farmers due to the fact economic output will increase, and the incorporation of permaculture elements are easily incorporated.

Permaculture is an intelligent system which incorporates energy efficiency, composting, recycling and waste management. This integral arrangement permits multiple uses of resources. For example, trees can be used as a living fence and windbreaker to protect livestock from drying winds.

In Nicaragua’s recent history, outsiders have infiltrated the country and employed “maquiladoras”, machinists who work in factories. The economic options under these types of working conditions are very limited at best. Although workers have attempted to create unions to obtain better working conditions and pay, the success of unions has been minimal to none. Rural workers are desperate to find feasible economic options to help them feed and support their families. The Tres Vientos permaculture model of raising livestock allows rural peasants to obtain economic freedom in a healthy and sustainable fashion. This model is not only sustainable because of it’s comprehension of the earth, but also because the longevity of being able to continue the work, which is at least three times longer than working as a maquiladora, one of very few economic options for peasants.

Permaculture promotes a healthful and safe way of working and living. Farmers have the opportunity to be physically involved in their environment in

a healthy fashion, incorporating natural forms of balancing nature, i.e. parasitic control. This is a huge contrast to working conditions were workers are exposed to noxious chemicals, which are not only found in the current industrial zones, but are also starting to make a stronger presence in modern farming.

Our permaculture model of raising livestock allows for improvements in farming techniques, while having an acute awareness of ecological preservation, thus permitting for significantly improved yields. Furthermore, Tres Vientos is a model based on profitability as well as sustainability. Multiple products coming from different livestock is a tremendous amount of insulation against variations in the market.

Tell us about your partnerships

We have created partnerships with COOPAD and indvidual rural farmers with previous work we have done with them. In addition, we are creating permaculture alliances with exisitng permaculture farms, focused on cultivation, in the country.

Explain your selections

We have taken our own money to buy the start up livestock. Also, the land is already avialble, due to the fact that it is Lizandro's family's land.

How do you plan to strengthen your project in the next three years?

Our project will be strengthened over the next three years through revenue from our livestock, educating farmers and creating co-operatives. Within the next three years we will have farmers practicing the principles of permaculture while making a sustainable living, thus adding power to our economic base. Furthermore, we will have an educated population that can intelligently discuss and share success, as well as challenges, and best practices of permaculture in regards to our country.

We will have a reputation of producing quality products from our livestock. Thus, we will be a trend-setter for revolutionizing antiquated and harmful farming practices. Therefore, attracting the attention of potential international buyers.

Challenges

Which barriers to employment does your innovation address?
Please select up to three in order of relevancy to your project.

PRIMARY

Lack of skills/training

SECONDARY

Restricted access to new markets

TERTIARY

Underemployment

Please describe how your innovation specifically tackles the barriers listed above.

Farmers are at a disadvantage due to lack of exposure to productive methods. Our living laboratory at Tres Vientos provides the opportunity for farmers to experience first hand the benefits of raising livestock in symbiotic relationships with the surrounding environment,and our workshops and trainings provide knowledge of how to sustain their lands and maximize their profits.

Tres Vientos will help establish several permaculture co-operatives to support and help famers easily connect with resources to help them flourish.

Underemployment is a national challenge. With farmers learning and employing the principles of permaculture greater economic sustainability income will become available, and rural peasants will have access to fair market revenue.

Are you trying to scale your organization or initiative?
If yes, please check up to three potential pathways in order of relevancy to you.

PRIMARY

SECONDARY

Enhanced existing impact through addition of complementary services

TERTIARY

Grown geographic reach: Global

Please describe which of your growth activities are current or planned for the immediate future.

Tres vientos has the potential to not only help farmers economically grow within Nicaragua, yet also take our markets internationally within the next five years.

Through our support systems: permaculture co-operatives, living laboratory and educational workshops we have the foundation for creating long lasting change.

Our project will be strengthened over the next three years through revenue from our livestock, educating farmers and creating co-operatives. We will have an educated population that can intelligently discuss and share success, as well as challenges, and best practices of permaculture in regards to our country.

We will have a reputation of producing quality products from our livestock. Therefore, attracting the attention of potential international buyers.

Do you collaborate with any of the following: (Check all that apply)

NGOs/Nonprofits.

If yes, how have these collaborations helped your innovation to succeed?

Our current collaboration is with one of the strongest agriculture organizations in Nicaragua, COOPAD. We have done extensive work with them,

from educating rural farmers on environmental preservation to intercultural exchanges of poetry and bread making.

Furthermore, our collaborations of helping individual farmers obtain a better standard of living have established us as a source of credible and effective information and methods.

Lastly, we are in the process of creating long-lasting collaborations with other permaculture farms, based on cultivation.
