

## COURSE REPORT

# Regenerative Farm: Ecological Restoration and Regenerative Cattle Ranching

ELTI Training Landscapes

District of Pedasí, Province of Los Santos, Panama

January 30 – February 3, 2023

A field course organized by:

The Environmental Leadership & Training Initiative (ELTI), the Association of Livestock and Agrosilvopastoral Producers of Pedasí (APASPE), in collaboration with Nestlé



Jacob L. Slusser

*Participants visit a regenerative livestock farm that utilizes small, rotational pastures, living fences and dispersed shade trees.*



**Background:** The severe consequences of conventional treeless and high-agrochemical input cattle ranching in Panama has become more evident due to the loss of biodiversity, impairment of ecosystem services and low livestock productivity. Extreme weather caused by climate change compounds the susceptibility of unsustainable land use practices. In addition, the pandemic and global

ELTI is an initiative of:

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*The Forest School*





*Participants learn about how forests function and produce the ecosystem services necessary to facilitate regenerative practices.*

conflicts have disrupted global supply chains, resulting in high production costs – further illustrating the vulnerability of conventional livestock practices. Although advances in regenerative ranching have proven to increase livestock production and restore ecosystem services in cattle ranching landscapes, they are not a common practice in Panama. Therefore, ELTI has developed trainings for cattle farmers interested in learning about ecological restoration and regenerative ranching strategies, such as silvopastoral systems (SPS) that integrate trees and shrubs into their farms for multiple productive and conservation benefits.

Nestlé a multinational corporation with a long history of purchasing milk from local Panamanian producers has been proactive to increase their efforts to promote sustainability and biodiversity conservation. Through its Regenerative Agriculture Strategy, Nestlé plans to source 25% of dairy volume (milk) by 2025 from dairy farms that practice regenerative agriculture – farms that sustainably increase productivity with fewer greenhouse gas emissions. With the support of Nestlé, ELTI developed a field course for milk producers from four provinces of Panama interested in implementing regenerative cattle ranching on their farms. During the field course, participants visited regenerative farms and learned about the importance of the benefits that originate from forest ecosystems and how to implement ecological and regenerative strategies. The course took place in ELTI's Training Landscape in the Azuero Peninsula, which conveys ecological restoration principles through its demonstration sites and model farm network, which integrate over twenty years of applied ecological restoration science and local experience.

**Course Objectives:** The overall goal of the course was to train participants on the role that forests play to provide ecosystem services and the range of regenerative ranching strategies that can be integrated into livestock farms to conserve biodiversity and enhance production. Additionally, all participants developed a farm management plan as a first step of creating a model regenerative farm.





Odielca Solis, owner of El Ñopo Farm, explains how to select Mexican sunflower (*Tithonia diversifolia*) seeds for sowing in forage banks

**Content:** The course content was divided into five thematic modules, which included introductory lectures, complimentary field visits, and group exercises and discussion.

**Module 1:** The principles of forest ecology, degradation, and ecological restoration

**Module 2:** Disturbance history and range of ecological restoration activities

**Module 3:** Plan, implement, and monitor regenerative ranching practices

**Module 4:** Learn about regenerative ranching experiences from local cattle farmers

**Module 5:** Prepare a farm management plan to put the acquired knowledge into practice

**Field-Course Format:** This course took place over five days at ELTI's Training Landscapes in the tropical dry forest, located in the Los Santos Province of the Azuero Peninsula. ELTI's sites demonstrate the varied biophysical and socio-economic contexts of different types of land use: (1) the Achotines Forest Reserve, a tropical dry forest ecosystem with both old growth and secondary forest; and (2) the APASPE model silvopastoral farms, owned by ELTI alumni, who have established regenerative livestock systems and other forms of forest conservation and restoration, and serve as co-facilitators of the course. Due to the size of the group, the participants were divided into two groups, each group corresponding to 2.5 days in the field. The following activities occurred throughout the week:

**Day 1:** Course participants arrived at the Achotines Tuna Laboratory and introductions were conducted. Nestlé leadership Victor Jimenez, Claudia Alvarado, Angel Soriano, Dominique Vertus, Belisario Troya, and Hafit Hernández discussed Nestlé's objectives with their new regenerative agriculture initiative. Jacob Slusser (Neotropics Training Program Panama Coordinator) facilitated an introductory presentation about ELTI and the objectives of the course. Jacob led a field walk through ELTI's interpretive trail system, within the Achotines Forest, where he discussed tropical dry forest ecology, including species identification, functional characteristics, forest regeneration and succession, and the





*Dolores Solís, owner of Los Yescos Farm, explains the benefits of a simple cattle aqueduct system.*

range of ecosystem services that forests provide. Participants gained a better understanding of the importance of biodiversity, species interactions and the ecological processes that maintain the equilibrium in ecosystems – the foundation of regenerative systems.

Afterwards, Jacob delivered an introductory lecture about regenerative ranching methods that integrate trees into pastures via silvopastoral systems (SPS). Jacob presented SPS as a practical and ecological way for farmers to conduct their livelihoods in a more environmentally friendly manner, utilizing natural ecological processes to lower their costs of production and develop more climate change resilient farms.

**Day 2:** Participants traveled to the small town of Los Asientos to meet APASPE members and visit the El Ñopo Farm of Odielca Solís, APASPE Treasurer. They were given a tour of the farm by Odielca, visiting several areas demonstrating a range of regenerative practices including: a solar powered cattle aqueduct system, drip irrigation agroforestry system with shade coffee, mixed forage bank, intensive silvopastoral system, restoration

of riparian areas via natural regeneration and native tree species reforestation conducted in a wildlife corridor. During the visit, Odielca demonstrated the planting techniques and spacing requirements for different systems. Additionally, she discussed many of the challenges and lessons learned from implementing regenerative ranching activities. Jacob and Jorge Gutiérrez ELTI's Field Technician provided additional technical information about the systems when needed. Participants were very impressed with the productive results from such a small farm and were inspired by Odielca's efforts and her passion for land stewardship.

Afterwards, participants visited the Los Yescos Farm and were provided a tour by owner and APASPE member, Dolores Solís. During the visit they learned about the restoration strategies conducted including; a home garden, silvopastoral systems and agro-successional systems integrating fruit and timber trees, agricultural crops and cattle forage species. Additionally, the simple solar powered cattle aqueduct system demonstrated the ease of efficient water usage on farm and potential for livestock intensification. Dolores shared his experience successfully established native tree species into the farm by intercropping food and forage crops and then



*A participant presents his farm plan, describing the different interventions planned to achieve more regenerative practices.*

converting the areas into grazing pastures. Participants were inspired by Dolores' efforts to transform a conventional ranch to a regenerative farm that produces a diversity of products beyond milk and beef. Overall, the opportunity to visit the model silvopastoral farms established by two local farmers was an educational and inspiring experience for the participants to embark on their own regenerative farm activities.

After lunch, participants returned to Achorines to begin the process of working on their farm management plans. Jacob presented an introductory lecture on the ten-step process, using an example farm to conduct the different activities. Afterwards, participants worked with the guidance of ELTI staff to: list basic information about the property, draw a farm map illustrating its layout, and rate their current farm on a 1-5 scale of sustainability via 12 different production and conservation indicators. Participants then plotted their results on a web to visually understand the current level of their farm's productivity and resilience. Based on how their farm was rated via each indicator, they prioritized which areas they wished to improve and developed their work plans accordingly. In the work plan, participants listed the indicator, the reasons why their farm scored low in that area, what were the regenerative activities that would be



*Participants receive assistance from ELTI staff to develop their farm management plans.*

conducted. Most farm plans focused on improving water systems and forage, increasing trees in pastures, and protecting water sources. Additionally, participants listed the resources (labor and materials) needed for each intervention and a work calendar for each activity. Finally, farm plans were completed by drawing a new map of how they envisioned the changes which would be conducted as part of the project. Participants individually presented their farm plans and received feedback from peers, ELTI and Nestlé staff.

**Day 3:** Participants were awarded their certificates and a group photo was taken. Afterwards they returned to the city of Las Tablas and the second group of 15 producers departed to Achorines to begin the same activities that the first group had conducted.





*Participants from the two groups, with ELTI and Nestlé staff.*

**Instructors and Coordinators:** The course was facilitated by ELTI's Neotropical Training Program staff: Jacob Slusser, MSc. (Panama Coordinator), Jorge Gutiérrez (Field Technician) and Saskia Santamaría (Program Associate). Jacob delivered introductory lectures and field demonstrations on the concepts of ecosystem services, forest ecology, restoration strategies and sustainable ranching systems. Jorge provided technical information about the establishment of silvopastoral systems. Saskia coordinated the logistical and communication components of the course. Jacob, Jorge, and Saskia facilitated the farm management plan activity and worked directly with participants. APASPE members Odielca Solís and Dolores Solís facilitated model farm visits, explaining in detail the regenerative strategies used on their farms and the success and challenges they faced.

**Participants:** The course was offered to a total of 25 milk producers from the Los Santos, Herrera, Veraguas, and Chiriquí provinces. Six staff members from Nestlé also attended the course.

**Outcomes and follow-up:** Participants were actively engaged throughout the course and were grateful for the opportunity to learn about alternatives to conventional ranching. The average participants rating for the course was a 4.8 out of 5. Participants of this course will be provided follow-up field visits from Nestlé staff. ELTI is discussing with Nestlé how additional training and mentorship can be provided to implement and monitor the farm plans developed during the ELTI training course.

**Cost:** This course was offered at no cost for 25 selected participants and Nestlé staff members thanks to the support of Nestlé.

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