COURSE REPORT

Agroecology and Agroforestry Systems

November 1-29, 2021

An online course organized by:
The Environmental Leadership & Training Initiative (ELTI)
Center for Research on Sustainable Agricultural Production Systems (CIPAV)

Agroforestry system designed and implemented by ELTI alumni Julián Andrés Giraldo and Sandra Giraldo in El Dovio, Colombia. © Juan Diego Vanegas

Background: Several Latin American countries are planning to undertake forest restoration on an unprecedented scale. However, a possible risk of initiatives that focus on reestablishing forests in rural landscapes is the displacement of agricultural activities and livestock production that will cause degradation elsewhere. Forest & Landscape Restoration (FLR) attempts to resolve the tension between agriculture and restoration by integrating different land uses into multi-functional landscapes that benefit people and biodiversity. Efforts to recover the region's unique natural ecosystems will be more successful if they simultaneously contribute to enhance food sovereignty, livelihoods and local economies. This will require the integrated planning of restoration activities to make agriculture, livestock production and forestry more sustainable.

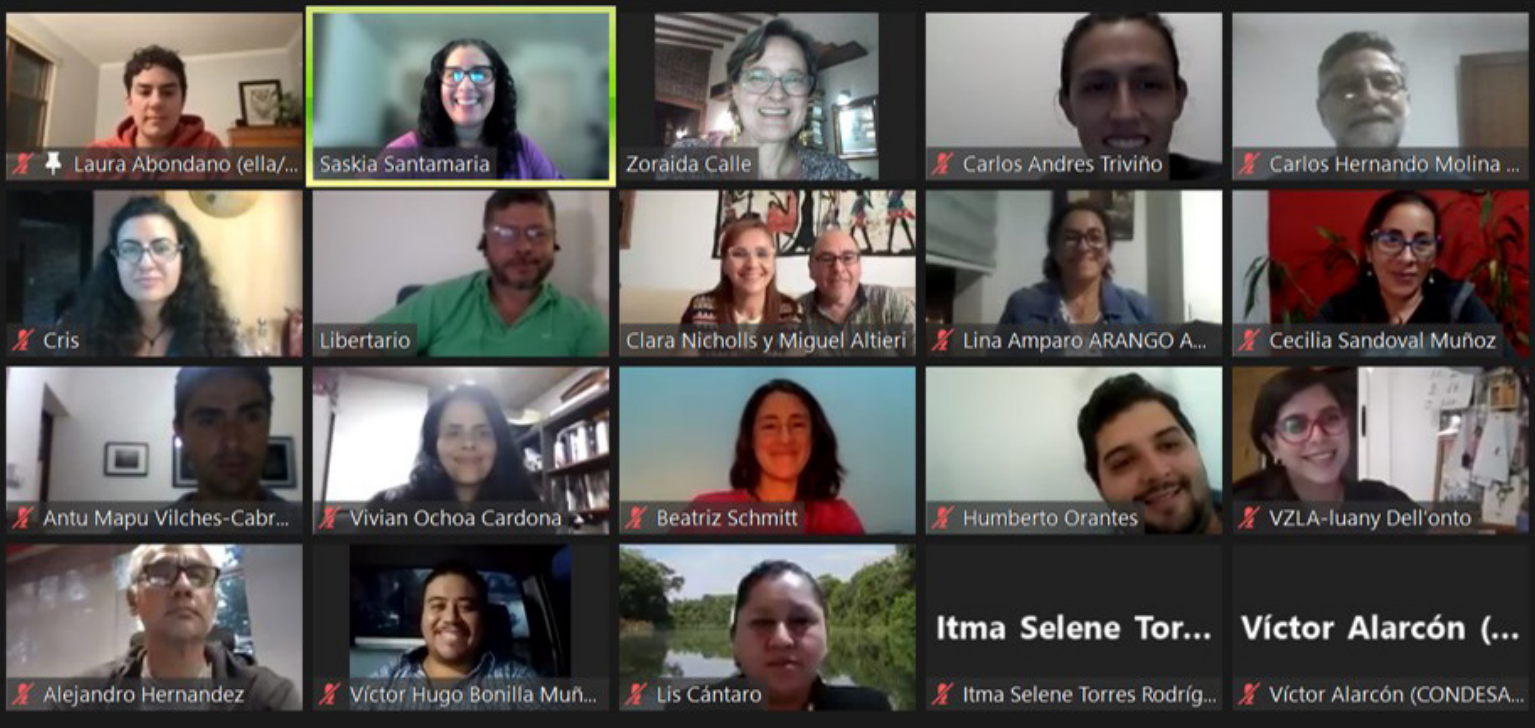
Agroecology and agroforestry have long been recognized as approaches that help reconcile the needs of people and nature by providing healthy and nutritious food while accelerating the recovery of degraded land and strengthening climate change resiliency. Both sciences offer a variety of principles and tools that can be applied to redesign rural properties and agricultural landscapes to increase their long-term productivity and ecosystem services. Restoration initiatives planned to complement farming systems will improve the quality of life of rural communities while conserving biodiversity and storing significant amounts of carbon in the soil and vegetation.

This course explored the principles and practices of agroecology and agroforestry and the contributions of both sciences to FLR in Latin America. With a holistic view of the multiple roles of trees in rural landscapes and the productive, economic and ecological dimensions of agriculture, this course was an invitation for participants to open their minds to integrated land uses that respond to the needs of society and nature.

Objectives:

- Present the basic principles of agroecology and agroforestry, and explore their integration in forest landscape restoration initiatives in Latin America
- Illustrate farm, community and landscape scale applications of agroforestry systems and agroecological restoration through case studies
- Offer tools to enhance the long-term sustainability of rural properties and landscapes by redesigning farming systems and planning the ecological restoration of fragile and marginal land

A group discussion between participants, ELTI instructors and guest experts, Dr. Miguel Altieri (Professor emeritus, University of California-Berkeley), Dr. Clara Nicholls (University of California-Berkeley), Carlos Hernando Molina (CIPAV). © ELTI Archive



"As a primatologist I have witnessed the accelerated degradation of forests, mainly as a result of cattle ranching, agriculture, mining, and oil exploitation. I am interested in this course because I want to learn how to implement sustainable alternatives that allow the economic development of communities and their coexistence with native forests", wrote course participant Laura Abondano. © Laura Abondano

Course Structure: This four-week online course combined a series of pre-recorded lectures, case studies, clickable presentations, videos, discussion forums and live sessions with expert lecturers.

The thematic modules were:

- **Module 1:** Agroecology
- **Module 2:** Agroforestry systems
- **Module 3:** Agroecological restoration
- **Module 4:** Planning and sustainability

The first two modules explored the principles and applications of agroecology and agroforestry systems on the rural property and local community scales.

The following two modules motivated participants to think in terms of landscapes and watersheds.

Participants were encouraged to integrate knowledge from the four modules into their own optional agroecological restoration projects.

Course participant Antu Vilches-Cabrera promotes permaculture and agroforestry systems in the Dominican Republic though his organization, Quisqueya Permacultura. Intense pruning is essential to accelerate tree growth and nutrient recycling in the agroforestry practices that he promotes. © Antu Vilches-Cabrera

Participants who completed the course requirements received a certificate of participation.

Course participant Erika Escobar trains women in Venezuela to implement small successional agroforestry plots that apply the principles of syntropic farming. © Erika Escobar

Participants: The course was offered in Spanish to 22 participants from 13 countries. These participants represented a range of disciplines and professions, including biology, agricultural engineering, economics, law, forestry, agronomy, ecotourism, environmental engineering, scientific journalism, agroforestry, and pedagogy.

Instructors and Coordinators: Zoraida Calle (Colombia Coordinator, ELTI Neotropics Training Program) was the lead instructor for the course. Saskia Santamaría (Associate, ELTI Neotropics Training Program) facilitated the course delivery, with assistance from Gillian Bloomfield (Coordinator, ELTI Online Training Program).

Selection of vigorous plantain (Musa acuminata x Musa balbisiana) pseudostems in course participant Luany Dell'Onto's farm. Luany is a Venezuelan lawyer with a passion for agriculture. © Luany Dell'Onto

Dr. Miguel Altieri (Professor emeritus, University of California-Berkeley), Dr. Clara Nicholls (University of California-Berkeley), Carlos Hernando Molina (CIPAV), Dr. Florencia Montagnini (Yale University), Dr. Alicia Calle (ELTI), Enrique Murgueitio (CIPAV) and Julián Andrés Giraldo (CIPAV) presented pre-recorded lectures or case studies, and were invited as guest experts to the live sessions.
Other pre-recorded lectures and case studies were presented by Dr. Carlos Venegas (CET Chiloé, Chile), Dr. Agustín Infante (CET Biobío, Chile), Zoraida Calle and ELTI alumnus Nicolás Valenzuela (Chile).

Outcomes and Follow-up: The course promoted a dynamic exchange across disciplines, backgrounds and geographies, with lively discussions in forums and break-out groups during live sessions.

Five participants (23%) presented original projects to enhance agricultural landscapes and rural properties from the megadiverse Andean-Amazon foothills of Peru to the seasonal floodplains of Venezuela and the Petén region in northern Guatemala.

This event was possible thanks to Arcadia Fund, whose Environmental Conservation grants support programmes that protect and enhance biodiversity and provide field training and academic research.