

COURSE REPORT

Technical Aspects of Plant Material Production

Villavicencio, Meta – Colombia
July 28 – August 1, 2014

A field course jointly organized by:
Environmental Leadership & Training Initiative (ELTI)
Colombian Cattle Ranching Association (FEDEGAN-FNG)



Background: Conventional cattle ranching is often considered one of the main drivers of deforestation and land degradation. However, there are strategies that can help to make this practice more sustainable. Silvopastoral systems (SPS) are agroforestry-based systems that have been proven to be a successful approach to increasing productivity per hectare and providing environmental goods and services (Calle et al., 2013)¹. Research by the Center for Research on Sustainable Agriculture Production Systems (CIPAV) indicates that real change to the dilemma of tropical cattle ranching will only occur if SPS are adopted at the landscape scale.

¹ Zoraida Calle, Enrique Murgueitio, Julián Chará, Carlos Hernando Molina, Andrés Felipe Zuluaga & Alicia Calle (2013). A Strategy for Scaling-Up Intensive Silvopastoral Systems in Colombia, *Journal of Sustainable Forestry*, 32:7, 677-693.

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An example of scaling-up SPS is currently underway in Colombia. The Colombian Cattle Ranching Association (FEDEGAN-FNG), in partnership with CIPAV, The Nature Conservancy (TNC) and The Environmental and Childhood Action Fund (FPAA), is implementing the Mainstreaming Biodiversity in Colombian Cattle Ranching project (known as GCS). This seven-year project (2010-2017) focuses on five geographic regions of the country and strives to make cattle ranching contribute to the sustainable use of natural resources by adopting environmentally friendly production systems that enhance livestock productivity, conserve globally significant biodiversity and reduce soil degradation. Additionally, the GCS project aims to increase the connectivity between natural ecosystems embedded within the productive landscape matrix.

The GCS project expects to conserve 5,495 hectares of forest, while transforming 51,000 hectares of pasture into diverse SPS (i.e. 5,000 km of living fences, recovering 2,945 hectares of degraded soils, and establishing 15,750 hectares of connectivity corridors). Eighty professionals working with FEDEGAN-FNG are providing technical assistance to approximately 3,000 cattle ranchers participating in the project (Calle et al., 2013)¹. It is estimated that to achieve this goal, approximately 4.5 million seedlings will need to be produced. This plant material will be used in the GCS' conservation strategy, as well as in the establishment of SPS. For this reason, it is imperative to ensure that quality seedlings of the desired species (i.e. native species, species of global interest for conservation) are available to plant during the planting season in each region.

Given the complexity of the GCS project, the success of the project depends upon building the capacity of their staff and training them in relevant areas. To meet this goal and to learn from existing experiences in Latin America, the GCS approached the Environmental Leadership and Training Initiative (ELTI) to identify capacity building priorities for the project's technical staff and develop a training strategy for 2014.

As a result, ELTI worked with FEDEGAN-FNG to design two field-based training-of-trainers courses. The second course (and the focus on this report) was entitled, *Technical Aspects of Plant Material Production*. This course trained personnel responsible for the GCS project's planting strategy on the basics of forest ecology and ecological restoration, the fundamental techniques and strategies of seedling propagation in nurseries, administrative aspects of nursery management and practical exercises for planting seedlings in the field.

Objectives:

- Present the basic principles of forest succession, ecological restoration in agricultural landscapes and the technical aspects of implementation;
- Provide the technical tools for the production, handling and distribution of plant material with ecological restoration purposes;
- Unify technical and administrative criteria for managing tree nurseries;
- Promote the exchange of knowledge and experiences of the production, handling and distribution of plant material between the different regions of the GCS project;
- Evaluate the regional productive potential of the nurseries participating in the GCS project.

Field-Course Format: This course took place over five days and was divided into five modules. Each module included a series of lectures and case studies, as well as field visits and exercises to illustrate the concepts presented in the classroom. The course also included two visits to tree nurseries and a field session, during which participants presented their own planting techniques and experiences. The objective of these activities was to allow participants the opportunity to share and exchange their professional skills and planting strategies, while incorporating the new concepts learned during the course.





The following were the thematic modules of the course:

- **Module 1.** Fundamentals of forest ecology and succession;
- **Module 2.** Techniques and propagation strategies of seedlings for ecological restoration projects;
- **Module 3.** Administrative aspects and management of tree nurseries;
- **Module 4.** Nurseries' production technology;
- **Module 5.** Field planting exercise.

Instructors and Coordinators: Juan Carlos Gómez, the Technical Coordinator of the GCS project, facilitated the delivery of the course, in collaboration with Cecilia Del Cid-Liccardi, ELTI's Neotropics Program Coordinator. Karen Ayala and Yadi Lorena Duarte (FEDEGAN-FNG) and Saskia Santamaría (ELTI) organized the course. Instructors covered different topics according to their expertise, including:

- **Alicia Calle** from the University of California, Santa Cruz (UCSC) provided the context for conservation and restoration in productive or agricultural landscapes;
- **Juan Carlos Gómez** (GCS) explained the ecological importance of the native tree species the project is including in its conservation and restoration strategy;
- **Dr. Severino Ribeiro** from the Northeast Center for Environmental Research (CEPAN) presented the fundamentals of forest ecology and succession, disturbance regimes, the principles of ecological restoration. He also discussed the importance of species diversity and genetic diversity in plant material production, the socio-economic aspects of plant material production (i.e. seed-collector networks and the importance of income generation) and introduced the business fundamentals for tree nurseries and how they can help to generate rural employment;
- **Dr. André Nave** (Bioflora) presented the methods and technical aspects of plant material production (i.e. seed and seedling collection, operations and equipment, native species seed storage, transplant and induction of the seed bank, etc.) and the administrative aspects of nurseries management. Dr. Nave also led the technical discussions during the nursery visits and the seed collection and planting exercises in the field.



Participants: This training course was offered to 36 professionals – 23 nursery owners from the five regions where the GCS project works and six CIPAV professionals and seven FEDEGAN-FNG professionals who are in charge of designing and implementing the planting strategy for the GCS project.

Course Follow-Up: Participants were actively engaged throughout the course and benefited from the practical exercises and also from the feedback that they received from instructors and their peers. ELTI's Leadership Program (LP) was presented during the event and generated interest among participants. The goal is to work with FEDEGAN-FNG to monitor the impacts of the trainings on their staff. Additionally, ELTI will follow-up with participants through a survey to determine the influence that the course may have had on their professional development and implementation of projects.

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.