

WORKSHOP REPORT

Native Species Reforestation and Agroforestry & Silvopastoral Systems

**Tourism Center (CEFATI)
Pedasi, Panama (Province of Los Santos)
September 1-4, 2009**

A workshop jointly organized by:
The Environmental Leadership & Training Initiative (ELTI)
The Native Species Reforestation Program (PROENA)

Workshop sponsors:
Arcadia Fund

Background: In recent years, reforestation has become a popular trend to help protect existing forests and to restore deforested areas in many regions throughout Panama. Most of the country's reforestation initiatives, however, are dominated by the planting of a handful of fast-growing, exotic timber species, primarily teak (*Tectona grandis*) and Caribbean pine (*Pinus caribea*). While monocultures of exotics can produce high quality timber, native species have been found to have more positive impacts on the environment and to provide a host of services to local people. Yet little information is available about native trees in the region, which might be a contributing factor as to why they are not used in reforestation projects. To address this gap, Panama's Native Species Reforestation Program (known by the acronym PROENA) was established in 2001 as a joint research initiative of the Smithsonian Tropical Research Institute and the Yale School of Forestry and Environmental Studies. One of PROENA's primary research activities, referred to as the species selection trials, is the analysis of growth and mortality rates of approximately 75 native tree species at four sites in the country with varying levels of rainfall and soil fertility. Practitioners and landholders in the region can use the data that is emerging from these trials in order to integrate native species into their reforestation efforts.

Beginning in 2004, PROENA started working with 33 rural landholders living in two agricultural regions of Panama (the provinces of Coclé and Los Santos) to plant native species plantations on their land. The primary goals of this initiative, referred to as the on-farm trials, are to gather additional data about the growth and mortality of native tree species in different locations and to learn directly from the farmers about the challenges and opportunities involved with planting native trees. Peace Corp Volunteers (PCVs) stationed in each region provided the first three years of technical support to the farmers and in 2007 PROENA contracted a technician to visit the farmers in Los Santos twice a year to discuss the management of their plantations. A recent analysis



of the farmers' experiences with the trials found that the technical support provided to the farmers by PRORENA is an important aspect of the project and that many of the farmers would like to participate in additional outreach activities (such as a workshop with all on-farm trial participants) and to plant additional trees on their land, including establishing silvopastoral and agroforestry systems.

To address these and other interests, PRORENA partnered with the Environmental Leadership and Training Initiative (ELTI) to organize this 4-day workshop with the on-farm trial participants. The overall goal of the workshop was to increase the capacity of the on-farm trial participants to manage their native species plantations and to incorporate additional native trees into their farms for a variety of reasons using a number of techniques. The workshop also was organized to introduce representatives from local organizations, programs and government institutions working on related issues in the region to PRORENA and the on-farm trial participants, as well as to encourage future collaborations.

Workshop objectives: The following were the eight primary objectives of the workshop:

1. Review the primary challenges and successes that the farmers are having with their PRORENA native species plantations and provide management expertise tailored to their needs;
2. Review the objectives of the PRORENA species selection trials and the recent data emerging from the trials on species growth and mortality, as well as discuss how this data can help to inform decisions about native species reforestation;
3. Present the results from the analysis of the experiences of the on-farm trial participants;
4. Provide the on-farm trial participants with the opportunity to meet one another and to share experiences;
5. Introduce farmers to silvopastoral and agroforestry techniques and present case studies of each system;
6. Provide farmers with an opportunity learn about other organizations, programs and government institutions working on reforestation and land restoration in the region and to meet representatives from these groups;
7. Provide representatives from other organizations, programs and government institutions working on reforestation and land restoration in the region with the opportunity to learn about PRORENA and to meet the on-farm trial participants.
8. Introduce the farmers to potential follow-up opportunities after the workshop, such as ELTI's Leadership Program, which provides assistance to ELTI alumni to pursue professional advancement opportunities and conservation projects and the option to become part of ELTI's international network of conservation leaders.



Workshop format: This workshop took place over a four-day period and included formal presentations, discussion sessions, field trips, and a group planning exercise. Each formal presentation concluded with a question and answer session and almost all presentations were followed by a field trip. The field trips were facilitated by the module instructor(s) and the primary course facilitator (Diógenes Ibarra, a former PRORENA

employee) and were designed to showcase the primary messages addressed in the presentations. Participants were encouraged to ask questions in the field and were given ample opportunity to interact with instructors. All presentations and field exercises were delivered in Spanish.

Workshop agenda: The workshop was divided into the following eight principle modules, three field trips, and one group planning exercise:

Day 1

- **Module 1:** Introduction to PRORENA and the PRORENA on-farm and species selection trials: ecological and social data

Day 2

- **Module 2:** Managing native species plantations and the specific issues facing the PRORENA on-farm trial participants
- **Field Trip 1:** Visiting the plantations of two PRORENA on-farm trial participants: demonstration of pruning and thinning techniques
- **Module 3:** Silvopastoral systems – benefits, establishment and management
- **Module 4:** Agroforestry systems – benefits, establishment and management

Day 3

- **Field Trip 2:** The PRORENA species selection trials
- **Field Trip 3:** Silvopastoral and agroforestry systems in practice
- **Module 5:** Description of Rio Hato, Coclé: soils, climate and rainfall – presentation about the experiences of on-farm trial participants in the region: experiences of Armando Muñoz
- **Module 6:** Presentations by organizations that work on native species reforestation and agroforestry and silvopastoral systems in the region (Coclé and Los Santos)

Day 4

- **Group Planning Exercise:** Designing a sustainable farm
- **Module 7:** Establishing and managing small-scale nurseries: experiences with a community nurseries program in the Panama Canal Watershed (Cadena Verde Comunitaria)
- **Module 8:** The social aspects of a silvopastoral program with cattle ranchers in Colombia

Participants: Forty-two participants attended the workshop, 20 of whom were PRORENA on-farm trial participants (eight from the province of Coclé and 12 from the province of Los Santos). The remaining participants included representatives from Panama's National Environment Authority (Autoridad Nacional del Ambiente-ANAM), Ministry of Agricultural Development (Ministerio de Desarrollo Agropecuario – MIDA) and Institute for Agricultural Research (Instituto de Investigación Agropecuaria de Panama – IDIAP) from the provinces of Coclé and Los Santos, as well as cattle ranchers from Pedasi, representatives from two local environmental



organizations (Espino Amarillo and Asociacion de Productores de Rio Hondo), and students from a local technical agricultural institute (Instituto Profesional Agropecuario Técnico de Tonosí).

Coordinators and instructors: The workshop was coordinated by Dr. Eva Garen (ELTI), Dr. Jefferson Hall (PRORENA), Carla Chizmar (ELTI), Diogenes Ibarra (Pacific Forestry), and Jacob Slusser (ELTI Intern). Diogenes Ibarra facilitated the workshop with the assistance of Eva Garen. There were 10 instructors who participated in the course from a number of local and international organizations and companies working on native species reforestation and agroforestry and silvopastoral systems, including PRORENA, ELTI, the Center for Research on Sustainable Agriculture Production Systems (Centro para la Investigacion en sistemas Sostenibles de Produccion Agropecuaria-CIPAV), Geoforestal S.A., Sustainable Harvest International (Cosecha Sostenible Internacional), NATIVAES S.A., the Peace Corps and the GEF-UNDP Small Grants Program. A representative from the Azuero Earth Foundation also introduced the organization to participants. In addition, Javier Mateo-Vega, the director of ELTI, provided a general introduction to the program and Alicia Calle, the coordinator of ELTI's Leadership Program (LP), provided participants with an overview of the LP program and potential follow-up opportunities. Participants also had the opportunity to visit the Achotines Research Station and were given an introduction to the station by the director, Dr. Vernon Scholey.

Workshop materials: The following two books were given to workshop participants:

- ***Sistemas Silvopastoriles: Establecimiento y Manejo/Silvopastoral Systems: Establishment and Management*** - published by CIPAV
- ***Plantas Comestibles de Controamérica/Edible plants of Central America*** - published by INBio (Costa Rica)

Workshop location and dates: The course took place from September 1-4, 2009, at the Tourism Center (CEFATI) in Pedasi, Los Santos. This site was selected for the workshop since it is located in proximity to one of PRORENA's species selection trials, as well as to several of the farms in which the on-farm trial participants planted trees with PRORENA. This region also was an ideal location for the workshop since it is heavily deforested agricultural landscape and, therefore, an important location in which to build the capacity of local residents to plant and manage native species plantations and to integrate native trees into their farming practices.



Follow-up: ELTI's Leadership Program coordinator, Alicia Calle, currently is contacting course participants to identify potential follow-up opportunities with the LP. One follow-up activity under consideration is a hybrid event with the leadership and training programs to take a group of alumni from the workshop to visit CIPAV's silvopastoral program in the province of Chiriquí. Workshop alumni also will be considered for support to attend the following two upcoming events: (1) a conference that is being jointly organized by ELTI and PRORENA entitled, The Ecology and Ecosystem Services of Native Trees: Implications for

Reforestation and Restoration Initiatives in Mesoamerica and the Caribbean, that will take place at the Smithsonian Tropical Research Institute (STRI) in Panama City, Panama, January 21-22, 2010; and (2) the 6th Latin American Congress on Agroforestry for Sustainable Agriculture Production (VI Congreso Latinoamericano de Agroforesteria para la Produccion Pecuaria Sostenible) organized by CIPAV and the Center for Tropical Agricultural Research and Teaching (Centro Agronómico Tropical de Investigacion y Enseñanza – CATIE) that also will take place in Panama City, Panama, September, 2010.



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