

**Additional Report  
(2009-2010)**



**Restoration of mountain rain forests in the Yungas of Bolivia with  
native Queñua (*Polylepis racemosa*) and “Pino de Monte”  
(*Podocarpus glomeratus*)**

**PROJECT 44.07.08**

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## Introduction

The Yunga forests of Independencia, Bolivia, have lost 70% of their forest cover due to fires, logging, grazing and agriculture. At the moment there are evident problems of soil erosion, water scarcity, biodiversity loss, and low wood availability for subsistence uses. For that, this project has had efforts for the conservation and management of cloud forests. We did an environmental education program for farmers and rural schools, also was conducted and promoted the production and plantation of native plants, especially *Podocarpus glomeratus* and *Polylepis racemosa* (endangered species). In coordination with other projects helped to create protected areas in different communities

## Localization project

The project was in municipality Independencia, Bolivia.



## Polylepis and Podocarpus Forest

Forests "Polylepis" and "Podocarpus" are found from 2500-3400 meters above sea level. These forests are relict populations that are used as firewood and wood for rural communities. Eventually, the forests are burned for agriculture and livestock. These provide valuable ecosystem services, for example, water for people, wildlife habitat and flow of carbon and nutrients.



Polylepis forest



Podocarpus forest

### Program education schools

We coordinated with the teachers and directors of three rural schools of Independencia and we obtained activity spaces in their environmental education classes. Throughout 2009 year, we did 35 days of workshops for 400 students from seven to seventeen years old. Also the educational program was completed adding two weeks of workshops in the “Boliviano Aleman” school. We also did drawing competitions, and the student and teachers all enjoyed participating

Workshop with children



Drawing competitions



Costume party



## Production de native plants

We produced more than expected: 14,000 *P. racemosa* and *P. glomeratus* seedlings and 15,000 other native seedlings in the municipal nursery, such as Aliso (*Alnus acuminata*), Chachacoma (*Escallonia salifolia*), Tara (*Caesalpinia spinosa*) and others.



Polylepis seedling



Podocarpus seedlings



Caesalpinia spinosa

## Program Workshop Rural Communities

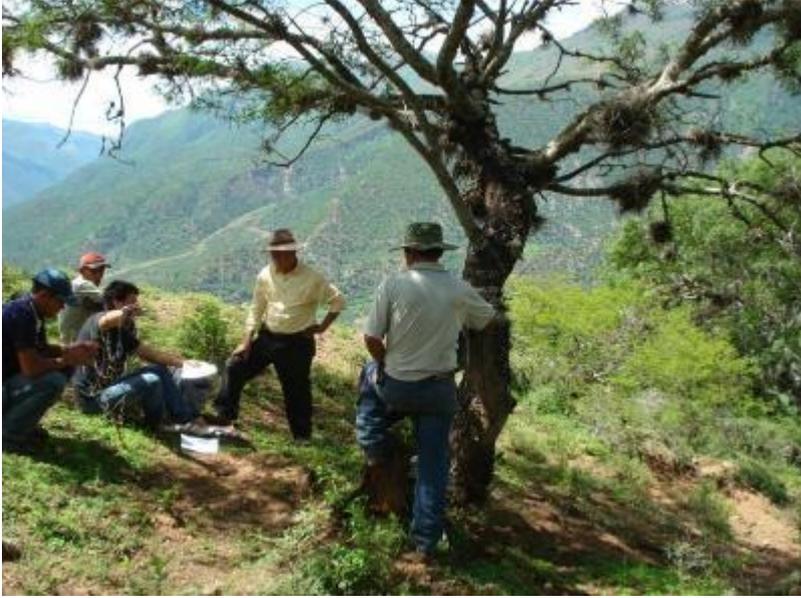
We lead 18 workshops with the indigenous communities. Also, together with other local programs, we participated in ten workshops with a goal of defining local standards in the communities to protect native forests. We also wrote and printed a book about native forests.



Community of Aramani (Environmental workshop)

Community of Pajchanti (Environmental workshop)





Community of Alpagani (Environmental workshop)



Workshop of protected area in Sivingani for Polylepsis

## Program Reforestation Native Plants

We planted 8,000 native *P. racemosa* and *P. glomeratus* plants, and another 6,000 native plants such as *A. acuminata*, *E. salicifolia*, and *C. spinosa*, together with the municipal government of Independencia. Tiquirpaya, Pajchanti, School “Boliviano Aleman” and college “Jose Miguel Lanza”, were those who planted native plants. In this activity helped students of the university “Escuela de Ciencias Forestales” as volunteers, student’s parents and the forestry office of Independencia.



Transport of plants to the field

Reforestation students



Open hole

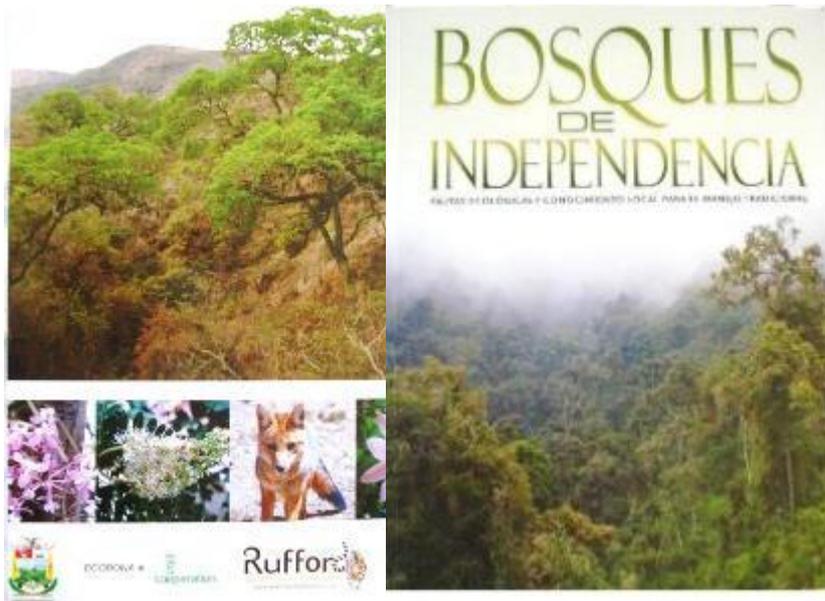
## Plantation native plants

After the rainy season, two areas of the plantation were fenced with wire. This activity was done by teachers and students' parents of "José Miguel Lanza" and "Boliviano Aleman" schools. Also some farmers protected this native plantation. With the fence, we will prevent damage of the native plants by the cows influence.

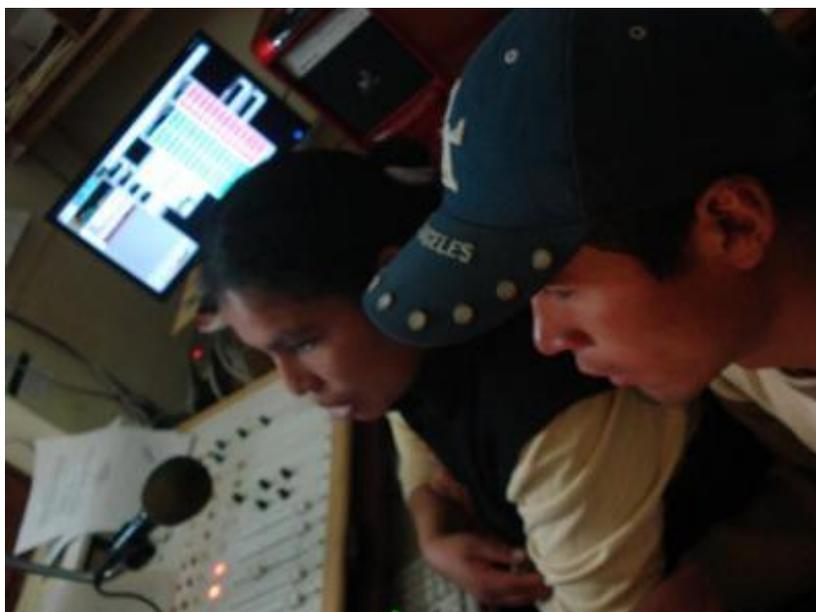


## Native plants promote reforestation and environmental awareness

Together with others organizations, we produced a book about Independencia's native forests. It has descriptions about the indigenous forest management, as well as botany, ecology, reproduction, and tree and wild life use. It was put together by college students, teachers, policy makers, and professionals, and it is currently being distributed. During four months, we produced and ran seven educational radio programs for children and adults. The programs were recorded in "Quechua," the native language. The program teaches the benefits of native trees and recommends reducing forest fires and exotic tree plantings.



Book for environmental awareness



Radio program

### Program Creation protected areas

Even though this project was not planned, it had a great impact on the conservation of the forests, plants and animals of the region. We helped to establish 12 protected areas in total. All have an area of 2244 hectares (1 hectare = 1000 square meter). 371 hectare of cloud forest and 1873 hectares of dry forests protected from fires and logging, all of this because of voluntary actions of the local people. In these protected areas, not only *P. racemosa* and *P. glomeratus* are protected, but many more plants and wild animals.

Nº	Nombres de las Reservas	Superficies en Hectareas
1	Svingari	17
2	Uavecito	105
3	Sailapata	113
4	Sailapata	25
5	Kuti	170
6	Lirku	17
7	Tapiza	16
8	Salsiani	34
9	Aramani	1.281
10	Huancarani	397
11	Pocancho	51
12	Reserva Municipal de Sapanari	18

Area protected (hectares)

We performed a map of protected areas with GIS (Geographic Information Systems).



## Plans to continue this work

We still have many plans. For example, this year we would like to do the following projects: continue with the production of more native plants in the nursery so that we can continue to reforest; strengthen the creation of protected areas with the local communities through workshops and labor with the local people; continue with the educational radio programs and children's workshops, as well as workshops in the communities that we were not able to reach yet; publish a manual with the school teachers to teach in the long-term topics of reforestation, protection of forests, and the environment; continue monitoring and evaluating the growth of the reforested plants; and evaluate how the communities' protected areas are recuperating from the fires and logging.



## Acknowledgements

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