



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Ecuador and Bolivia

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June 24-July 4, 2006

Purpose of Trip: (i) Plan SANREM activities; (ii) Identify and collect data needed for various research activities; and (iii) Conduct participatory assessment of research and outreach needs in Bolivar Province, Ecuador (see annex).

Names of Travelers: Jeffrey Alwang, George Norton, and Darrell Bosch, Applied and Agricultural Economics, Brian Benham, Biological Systems Engineering, Virginia Tech; Sarah Hamilton, Anthropology, University of Denver. Only Alwang continued on to Bolivia.

Description of activities:

Following the visit to the SANREM site in Guaranda, Ecuador, the team identified the following common problems: soil erosion, low productivity of agriculture, exploitation in local markets for agricultural products, and limited non-agricultural activities. Environmental issues included lack of biodiversity, loss of native plant and tree species, and drinking water quantity and quality. The research was designed to address these problems. In addition, the SANREM team had extensive interactions with the USAID mission in Quito. USAID expressed interest in the cacao component of the project, especially related to the Northern border in Esmeraldas Province. USAID also has interest in supporting livelihoods enhancements among indigenous groups.

The Ecuador group agreed on the following:

- i. INIAP will begin extensive planning for year 2 of the project.
- ii. INIAP will immediately open a project office in Guaranda and will begin sensitizing the residents of the Upper Guanujo and Chillanes sub-watersheds.
- iii. The baseline data collection effort will begin in end-July.

In Bolivia, meetings were held to identify topics and priorities for agronomic, economic and social research. Research will focus on: soil-quality enhancements and erosion reduction measures, potential for seed-potato production, alternatives for forage sales throughout the watershed, integrated management of the potato crop at medium and lower elevations, and integrated management of and potential for fava bean seed production. Research on marketing issues was also identified as a priority.

The Bolivia group agreed on the following:

- i. Alwang will stimulate interactions between the Bolivian researchers and their research interests to the rest of the US team.
- ii. Visits by US scientists will be programmed for year 2 of the project. Because of the pressing natural resource issues in the study area, PROINPA has specific interest in soils, plant pathology, economics and sociology.
- iii. The PROINPA team will prepare workplan, including information on objectives, methods (with specific experimental designs), expected outputs, etc. by July 31.
- iv. Workplans will be reviewed by other SANREM participants, feedback will be provided, and the workplans will be finalized by August 15.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
Monica Zuquilanda	USAID-Ecuador	mzuquilanda@usaid.gov
Thomas Rhodes	USAID-Ecuador	2232100 / trhodes@usaid.gov
Edison Silva	FEPP	2980495 / guaranda@fepp.org
Gilberto Llamuca	Plan Internacional	094220840 / gllamuca@yahoo.es

Annex: detailed description of activities

June 24: Arrive Quito, 9 PM, met with Franklin Valverde, INIAP—SANREM project coordinator, and Luis Escudero, INIAP—SANREM representative in Bolivar Province. Valverde and Escudero provided an overview of activities in Ecuador to date.

June 25: Breakfast meeting with team plus Mary Leigh Wolfe, Julia Pryde, and Wills Flowers. Wolfe and Pryde, from Virginia Tech, were in Quito to identify data sources and subsequently departed to CIP-Lima. They will file a separate trip report. Flowers, from Florida A&M, joined the trip to begin a biodiversity assessment and set up a monitoring program. He will file a separate trip report.

Alwang, Norton, Bosch, Hamilton, INIAP partners and Pilar Jano, a MS student at Virginia Tech undertaking cacao research, met with Monica Zuquilanda and Thomas Rhodes, USAID. Team provided an overview of the project. USAID expressed interest in the cacao component of the project, especially related to the Northern border in Esmeraldas Province. USAID also has interest in supporting livelihoods enhancements among indigenous groups. With respect to the watershed modeling component of the project, USAID is interested in agriculture/natural resource interactions, especially the relationship between agricultural activities and biodiversity. USAID expressed interest in SANREM work on minimizing the impact of productive activities on habitat loss, particularly on the edge of protected or natural areas.

USAID has need for short-term studies of the competitiveness of Ecuadorian potato production. INIAP agreed to provide information generated through the IPM CRSP on potato production for use by the mission. The group decided to build stronger linkages between SANREM and USAID-Ecuador, through web-page linkages and information sharing.

Met with Julio Cesar Delgado, Director General of INIAP. Delgado expressed strong support for the SANREM project, indicating that he had appointed Valverde to be acting coordinator, during the absence of Victor Barrera, who is studying in Spain. He noted that Barrera's research would support SANREM needs.

Team transported to Guaranda. Evening meeting with team plus 4 SANREM researchers from Penn State, who are conducting soil samples. They will prepare separate report. Team was joined by three representatives from ECOCIENCIA, a representative from ECOPAR, and Andrea Colmana, a specialist in biodiversity.

June 26-29: Participatory assessments in: (i) Alto Guanujo, a completely indigenous area at approximately 3500 m. in elevation; (ii) San Simon, a meztizo community with large areas of communal land and no land titles, around 2500 m.; and (iii) Chillanes, a meztizo community with extremely degraded soils at around 1800 m. Team was joined by Bolivian colleagues (Oscar Barea, SANREM coordinator for Bolivia, and Ruben Botello, SANREM representative in Tiraque, Bolivia). Team observed extreme environmental stress in the form of soil erosion, water quality and loss of biodiversity. Agriculture predominates in all areas. In Alto Guanujo, a potato-pasture system is found, with other crops being faba beans, peas, barley, quinoa, native

Andean roots, and other minor crops. Holdings average more than 5 hectares, with most land privately held with title, but large areas of communal grazing and woodlands. Dairy cows, sheep, pigs, and small animals are common. Cheese is the main source of household income, with potato sales contributing and most other crops being used for home consumption. Wood products, mainly rough-cut pine, some medicinal plants, and wool weaving also represent sources of income. Community residents complain about pest problems, soil loss (the light volcanic soils are rich in carbon and deep, but fix potassium), loss of native plants (mainly trees) and water quality issues. Slopes of 80-100% and higher are common.

In San Simon, where holding sizes average 3 hectares, soft (sweet) maize is the main crop, supplemented by wheat and small grains, peas, faba and other beans and potatoes. Most households own minor amounts of animals. Non-agricultural income is limited to firewood sales, and some work in transport. The biggest problem is quantity and quality of drinking water (confirmed by a visit to the local health center), related to agricultural stress near sources, soil loss, and low agricultural productivity.

In Chillanes, holding sizes are <2 hectares, slopes are extremely high and productivity loss due to soil degradation is evident. Land is privately held, beans represent the main source of household income, with households producing tomato, tree tomato, maize, wheat, potatoes, sugar cane, peas and other legumes, mora and naranjilla for own consumption. Virtually no off-farm income sources are found. Key problems are soil degradation, lack of information about income-earning alternatives, and market access.

Common problems in all parts of the watershed are: soil erosion, low productivity of agriculture, exploitation in local markets for agricultural products, and limited non-agricultural activities. Environmental issues included lack of biodiversity, loss of native plant and tree species, and drinking water quantity and quality.

A team meeting was held on the evening of June 29 in order to specify the exact areas of work, plan for the subsequent year of the project, and plan the next day's workshop in the Consejo Provincial of Guaranda. The team identified a number of research themes, decided to focus in the areas of Upper Guanujo and Chillanes, and identified responsibilities and partners for continuing research activities. The sites were identified based on geographic and agro-ecological differences, community interest, and extreme environmental degradation. For Chillanes, an office-apartment would be sought to reduce travel times and facilitate interactions with the community members.

June 30: Team held a closing workshop at the Consejo Provincial in Guaranda. More than 40 people attended, including representatives of local and provincial government, of federal ministries (agriculture, environment, water resources, indigenous affairs), of projects and NGOs working in the region, and from several Universities. Local media, including print, radio and television covered the event. Promising connections were made with the Fondo Ecuatoriano Popularum Prograssio (a reforestation and watershed management investment fund), Plan International, and other NGOs.

July 1 & 2 Travel to Cochabamba, Bolivia (Alwang). Met at airport by Ruben Botello and Ilich Figueroa (a SANREM research assistant), and discussed progress.

July 3: Met at PROINPA offices to discuss visit and progress to date on project. Meeting was attended by Antonio Gandarillas, director of PROINPA, Oscar Barea, Botello and Figueroa. PROINPA has made much progress, including establishing an office in the Toralapa experiment station, synthesizing lessons from prior PAs (including one commissioned as a part of SANREM project planning), identifying data sources for the GIS and watershed modeling components, and identifying and refining research priorities. Gandarillas indicated that PROINPA would like to have at least MS students trained: Figueroa (Entomology) and Nadezda Amaya (agri-business and economics). PROINPA also identified a number of topics for senior-level undergraduate students.

Met with Omar Vargas Montana, PROMIC, the NGO responsible for data and GIS support. Nearly all data has been collected; the remainder will be collected during year 2.

July 4: Met to plan for the second year of research. The household survey was discussed in detail. A model (from Ecuador and modified by part of the US SANREM team) was presented and discussed. Group decided that Bolivia team would review questionnaire and present modifications to US team, coordinate review by SANREM Technical Committee and begin field testing by end of August. A sampling strategy and sample size were agreed upon. It was agreed that enterprise budgets, needed for watershed/ household modeling activities, would be constructed using information gathered through group meetings rather than through survey. Group decided to begin monitoring key input and output prices in Tiraque markets.

Discussion turned to research topics and priorities for agronomic, economic and social research were set. Research will focus on: soil-quality enhancements and erosion reduction measures, potential for seed-potato production, alternatives for forage sales throughout the watershed, integrated management of the potato crop at medium and lower elevations, and integrated management of and potential for fava bean seed production. Research on marketing issues was also identified as a priority.

The group agreed on the following:

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- vi. Visits by US scientists will be programmed for year 2 of the project. Because of the pressing natural resource issues in the study area, PROINPA has specific interest in soils, plant pathology, economics and sociology.
- vii. The PROINPA team will prepare workplan, including information on objectives, methods (with specific experimental designs), expected outputs, etc. by July 31.
- viii. Workplans will be reviewed by other SANREM participants, feedback will be provided, and the workplans will be finalized by August 15.

Meeting was held with SANREM partner, AGRUCO, to discuss their involvement in project. They are specifically interested in participating in the socioeconomic baseline and in efforts to understand social, cultural and political processes.