Timor-Leste Agricultural Rehabilitation, Economic Growth and Natural Resource Management Project

Quarterly Report
July to September 2004

University of Hawaii at Manoa
Honolulu, Hawaii USA
Soil Management Collaborative Research Support Program
SM CRSP
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Executive Summary

Several farmers and farming groups in the Seical watershed have proved their entrepreneurial skills and knowledge by showing it is possible to generate income in a region considered to be lacking in human capacity and initiative.

Income generation was reported as one of the primary goals of farmers and villagers in the upper portion of the watershed involved in the PRA held in January 2004. With their hard work, the realization that local know-how and ingenuity to increase household income is now becoming a reality. Initial results from 11 of 12 farming groups involved in the land use study reported net income at the end of the first quarter of operations. The initial success of this relatively small group has led to increased interest of additional farming groups living in the lower portion of the watershed, as reported in the highlights of accomplishments.

Chromolaena orodata, considered an invasive weed, was identified as the major problem to increased agricultural productivity in the watershed. This weed has spread extensively throughout the watershed but now serves as the major natural source of nitrogen for vegetable gardens established in each of the land use study sites. Chromolaena, it turns out from our investigations of earlier reports, has the ability to accumulate nitrogen in its leaves and stems and is proving to be an important composting material. Farmers now look upon this weed as a resource and, as a result, their use of it may begin to control its spread.

Economic management of these small enterprises was the topic of training sessions held in Venilale and in Dili in July and August. Topics on risk management, farm budgeting and marketing were introduced to the farmer groups and to MAFF staff. In addition, one-day workshops were held to introduce groups in the use of computers and software to help in their management, planning and budgeting.

Candlenut is now being touted as another potential source for an economic engine to generate income for communities in the Baucau District. Oils of Aloha, a U.S. company based in Hawaii, has expressed strong interest in being a partner with the community to establish a foundation for the sustained growth of a candlenut industry. In addition, the interest of the Catholic Relief Service (CRS), GTZ, the University of Hawaii and USAID has added momentum to a possible alliance with Baucau community members to realize the establishment of a local business enterprise with a global market.

Six ***interns***, Timor-Leste student scholars studying at the University of Hawaii under a State Department sponsored scholarship program implemented by the East West Center, returned to their home country for a four-week summer internship program this summer. At the request of the local USAID mission, project activities included support for nationals to participate in project-related activities as project interns and to have the interns exposed to possible career opportunities so that they might contribute immediately to their country's development upon graduation. A special session to allow

interns to make brief presentations on their experiences as East West Center scholars or their own academic program was held on the UNTL campus on July 15. More than 60 guests were present including U.S. Ambassador Joseph Rees and First Lady Kirsty Sword Gusmao.

Country coordinator. Mrs. Carin du Toit was appointed to serve as country coordinator for the project in late September. She will reside in Dili.

Highlights

How to Increase Household Incomes with Indigenous Knowledge

Twelve agricultural-based business enterprises were established in the Baucau District by the end of the previous quarter. These businesses are all linked to a participatory development research approach introduced by Dr. Andre du Toit. The approach is based on the fundamentals of the Ricardian model that predicts groups will select their business activities to get a competitive advantage within their own social economic environment. Eleven of the 12 groups already make a profit, calculated on the basis that income exceeds their input costs. For three of the groups, their profits already exceed their original capital investment, six months after startup. Intense internal evaluation of the land use groups to improve group dynamics and general productivity is ongoing during the current period as well.

The early success of these 12 groups resulted in the addition of five more. Furthermore, three additional groups under the leadership of MAFF have now joined the land use project. Joint activities in Baucau with MAFF include (1) an inoculation program for livestock (the inoculation program for the prevention of cholera in pigs was well received by participating villagers; previously, some villages lost their entire pig population to cholera.), (2) nursery development and upkeep, (3) training of communities in crop production and compost production for vegetable production, and (4) incorporating seasonal forecast software as weather data utilization tools.

Finally, the combination of UH- and MAFF-organized farmer land use groups with those of CRS (Catholic Relief Services) resulted in nearly 30[1] land use groups involving nearly 150 individuals. These 30 land use groups translate into 30 new agribusiness enterprises that created jobs for 150 people by the end of September.

An unplanned, but beneficial, spin-off of the joint work among MAFF, villagers and UH was the opportunity to involve UNTL agricultural students in the various participatory, community-based development projects in vegetable production and animal health in the watershed.

No plans exist to add more groups into this study as neither UH nor MAFF has sufficient personnel to help monitor and document activities at each of these land use group sites.

On July 3rd, the Uaitobono rice group organized a harvest day on their own initiative, to which the minister of agriculture was invited. Unfortunately the minister could not attend but sent a high level representative. The message of the day was that with UH intervention they were able to increase their harvest yield from 40 buckets of rice, using one bucket of seed, to 60 buckets. The research results on that site indicate that rice yield can be increased from 2.9 to 6.2 ton ha^{-1}.

[1] Our 12 existing groups + 4 to 5 groups in the pipe line + 3 MAFF groups + 7 Silk farm groups + 3 CRS groups

On September 1st, a planning session workshop was given at the MAFF office in Baucau. The objective of this workshop was to discuss the 2003 - 2004 season's experiment results with all the role players in the agricultural research community and also to plan the 2004 - 2005 season's trials. Role players included representatives from the communities where each of the rice and maize fertilizer trials were done, the UNTL Agronomy department, MAFF Baucau and MAFF Central. The 2004 – 2005 trial locations were selected on the requests of the farming communities.

Prospects for Income Generation from Forest Products Improve

Mr. Matthew Papania, President of Oils of Aloha, and Goro Uehara visited the candlenut producing area of the Baucau District to assess the feasibility of establishing a candlenut oil extracting plant in the district. The aim of this effort is to add value and stability to a marginal export commodity by processing candlenut oil for the cosmetic industry rather than marketing the kernel to Indonesia as a food item. The added value is designed to benefit rural households that harvest and prepare the candlenut for sale to local buyers. This activity falls under Objective 2 of the project, which is designed to increase household income and create job opportunities for rural people, and Objective 3, which enables rural communities to manage land and forest resources in a sustainable manner for future generations.

Local organizations that support this venture include the Catholic Relief Service, the German Technical Assistance project (GTZ) and the Alola Foundation. Oils of Aloha, based in Hawaii, U.S., is involved as an external organization. The core group forms the basis for enabling the Office of Global Development Alliance in Washington, DC to help finance the establishment of the revitalized candlenut industry. The aim is to have this alliance operating before the project ends in June 2005.

Capacity Building Involves Students from Timor-Leste

Capacity building of individuals, agencies, and organizations within Timor-Leste is an essential element to sustained success of the country's independence. Towards this end, the U.S. Department of State provides scholarships to study abroad for individuals selected through a competitive process. Six students studying as East West Center scholars at the University of Hawaii participated in project activities as interns this past summer.

Three are graduate students studying in Master of Science programs and three are upper division undergraduates. Each student-intern was required to contact government and non-government agencies to serve as his/her host during the period of their summer internship.

To highlight the summer's activities of these interns, a special presentation session was organized by Dr. Harold McArthur, co-principal investigator of the project, to allow a group of Timor-Leste students to describe their personal experiences as East West Center

scholars and/or their summer activities in Timor-Leste. The session was held on July 15, 2004 in the Liceu auditorium of UNTL (National University of Timor-Leste) in Dili. Approximately 60 guests were present including U.S. Ambassador Joseph Rees and First Lady Kirsty Sword Gusmao.

The Interns

Three undergraduates and three graduate students participated in the internship program this past summer. Mr. Filipe da Costa, Mr. Matias Gomes and Ms. Flavia da Silva were the three undergraduates with class standings as third year students.

Dr. Harry Ako of the Molecular Biology and BioSystems Engineering Department of the College of Agriculture and Human Resources (CTAHR) at the University of Hawaii serves as da Costa's academic advisor. Ako traveled to East Timor to provide technical support to da Costa in his efforts to gather information and data on the use of agricultural bio-residue as an energy source.

Mr. Gomes planned his fieldwork with Dr. Michael Forman of the UH Linguistics Department during the spring semester. Forman traveled to Dili to provide guidance and support to Gomes to initiate his fieldwork. Forman and Gomes met with the latter's intern host, sub-director Mr. Aderitu Correia of the Institute of National Language at the National University of Timor Leste to review and respond to any questions or comments. Correia raised points about the work Gomes planned to undertake in Timor-Leste and in Hawaii. Forman responded to his concerns and assured him that information gathered in Gomes' studies would be made accessible to him.

Ms**.** Flavia da Silva is an undergraduate studying agricultural economics. Her academic advisor is Dr. Catherine Chan-Halbrendt of the NREM (Natural Resources and Environmental Management) Department in CTAHR. Silva's interest during her internship involved a study on the economic viability of vanilla production. She had planned to focus her work in Emera with CCT staff serving as her host.

Three graduate students, Mr**.** Carlos dos Reis, Mrs. Brigida da Silva, and Mr. Krispin Fernandez, participated in the summer-internship program. The latter two participated in the symposium while dos Reis was unable to as both he and da Costa returned to the University of Hawaii to enroll in summer classes. While in country, dos Reis worked with Mr. Pascual of MAFF forestry staff in Baucau and assisted Dr. J.B. Friday of NREM conduct training workshops on establishing tree nurseries.

Academic advisors for da Silva and Fernandez, Dr. Luciano Minerbi of the Department of Urban and Regional Planning and Dr. Clark Liu of the Department of Civil Engineering, respectively, were unable to join their students. Both da Silva and Fernandez carried out their internship activities in Baucau with guidance from staff at MAFF.

Capacity Building: Short Courses to Improve Business and Technical Skills and Knowledge

Business Skills Course. To develop the business skills of the land use study groups, marketing workshops were held on the 7th and 8th of June at Uailili and Fatulia. The trainers for these workshops were Bob Alexander and Carin du Toit.

Economics Workshops. The first of two workshops was held in Venilale, Baucau District at the request of community leaders. Forty (40) individuals from a number of organizations participated in the workshop. They included the following number and organizations:

- MAFF: 26 – Dili (5); Manatuto (1); Baucau (1); Viqueque (2); Lautem (1); Liquisa (1); Ermera (2); Bobonaro (2); Aileu (1); Same (2); Oecusse (2); Other (6);
- Agricultural Service Centers: 2 – Bobonaro (1) and Viqueque (1));
- NGOs: 7 – HASATIL (2); ETADEP (2); CRS (3); Caritas, Dili (1);
- Agricultural schools: 4 – SPP Natarbora (2); Esc.Tec.de Ag (2).

Sessions were divided into discussion groups on the topics led by UH faculty members as follows:

- Framework for assessing adoption of new agricultural technologies and products (Fleming);
- Prices and marketing plans (Chan-Halbrendt);
- Lessons on diffusion and adoption from the Green Revolution (Bowen)
- Food security and risks (Alexander).

In addition, as part of a practical exercise, participants learned techniques in how to interview farmer groups in order to gather information on local knowledge and practices. These data would be compiled into data sets that could be used as inputs to economic analyses.

The second workshop was held in Dili at the Hotel Turisimo. There were 21 participants for the Dili workshop. Representations were as follows:

- MAFF: 6 – DNPA, Research, Crops, Research and Extension, DPPP);
- NGOs: 8 – CRS (1); World Vision (2); Caritas Australia (2), TIDS (1); HASATIL (1); ETADEP (1);
- UNTL (2); USAID (2) NCBA (1); and Others (2).

The workshop opened with overviews of the Hawaii project and of the workshop just held in Venilale. The first day was devoted to reviewing the key economic concepts of the workshop, including the results of the Venilale group exercises:

- Lessons on diffusion and adoption from the Green Revolution (Bowen);
- Framework for assessing adoption of new agricultural technologies and products (Fleming);
- Prices and marketing plans (Chan-Halbrendt);
- Food security and risks (Alexander);
- Evaluating income-generating activities (Chan-Halbrendt and Alexander).

Crop Management

Compost-making Workshop. On August 23rd, a compost training workshop, which was requested by the Venilale community, took place at the MAFF office in Baucau. A "train-the-trainers" approach followed, where a number of individuals were pre-selected for their potential to transfer this technology to the farming communities within the Baucau district.

Weather and Climate Monitoring Workshop. On August 24th, a training workshop was held at the MAFF office in Baucau. The logic behind this workshop was to bring together farming communities, where weather stations had been placed, and users of the weather data. One of the objectives was to explain, using weather station data, certain phenomena that occur during the growing season. A second objective was to explain the process of weather data collection and the use of this data in seasonal forecasting. Based upon this presentation, MAFF central have requested that the weather generator in DSSAT, modified by Dr. Andre du Toit, be incorporated into their weather data management system.

Technical training session – data presentation. September 2nd was originally scheduled as an internal training day. Based on the contents of earlier workshops, however, staff from both MAFF-Baucau and MAFF-central (Dili) asked to attend this session on data handling and presentation. Presentations included how to use Excel to present scientific data and GPS (global positioning system) use and it's application with GIS (geographic information system).

Improving Food Security by Improving Post-Harvest Handling of Grain and Vegetables

Post-harvest losses have been highlighted as a serious problem in East Timor, where losses of up to 60 percent have been reported. The major cause seems to be rats, with insects being a problem during longer-term storage of rice and maize. Simple sealing of maize in drums was effective in reducing losses from both causes though the price of drums may be prohibitive for small growers. Alternatives are available to minimize loss from rats. Grain quality is an important issue that may have been overlooked and more attention to moisture content during threshing and polishing is necessary.

Vegetable production is an important cash crop in rotation with rice or maize. Little or no refrigeration is available in the country, with farmers following the practice of morning harvest and then quickly marketing the product within 24 hours. Losses due to physiological breakdown and disease were minimal in this system. The biggest cause of losses in this system, according to UH plant scientist, Dr. Robert Paull, is mechanical damage from poor handling practices. Simple low cost alternatives for packing vegetables are available and will be explored further.

Soil Test Kit Results used to Plan Fertilizer Demonstration Trials with Maize and Rice to Improve Food Security

Plans are underway to include a third promising maize variety in order to encourage increases in grain yield from those of the 2003/2004 crop production season. Sixteen trials are planned for 2004/2005 season compared to the six implemented in 2003 and 2004. Outcomes from these trials will be used to produce N, P and K response curves for three maize cultivars, including Suwan 5 from Thailand. MAFF plans to release Suwan 5 as a recommended maize cultivar to farmers in Baucau based on results from the variety trials conducted by the Seeds of Life program. The other two varieties, BiCi2 and Arjuna are varieties commonly planted by local farmers. Dr. Andre du Toit and Mr. Fernando Sousa of UH planned these trials in consultation with Mr. Deolindo da Silva and Claudino Ninas Nabais of MAFF.

Project Reporting Moves Towards Video Reporting

With the technical guidance and support of documentary filmmaker Mr. Keith Bing, footage for a video documentary report of project progress was shot at 11 (10 sites) of the 12 land use group sites in the Baucau District. Because language is one constraint in communication within and out of the watershed, a visual presentation and reporting of activities would appear to be one media that could "bridge" this language gap. Training activities could also be in the works with native speakers involved in the narration. A video report of the land use study is anticipated by end of the next quarter.

Newsmakers

Both the local radio station in Baucau and a newspaper printed in Dili have reported on activities of the project to the local communities. Fernando Sousa and Francisco Soares, associate country coordinator and administrative assistant for the UH project in E. Timor, respectively, were interviewed for the local radio program. The newsprint article reported on the training activities held in Baucau on compost-making and monitoring weather and climate.

Objectives and Performance Indicators

The following lists the three project objectives with the respective estimated performance indicators as described in the action plan. Activities are noted under each of the indicators reflect those accomplished during the reporting period July 1, 2004 to September 30, 2004.

Objective 1. Increase Agricultural Productivity and Food Security

Estimated performance indicator: Maize and rice yields double in participating farmers' fields relative to yields in non-participating farmers' fields employing traditional farming practices.

The number of participating farmers' fields used for the maize and rice trials using fertilizer inputs determined from results of the soil test kits has increased from 6 to 16.

Objective 2. Diversify and Intensify Crop Production to Generate New Income and Employment Opportunities

Estimated performance indicator: Income of participating households increase relative to non-participating households.

Number of participating land use groups in the study numbers are nearing 30 and include 150 individuals. More than 30 households are involved. Small profit margins have reportedly been achieved by 11 of the 12 initial groups.

The potential of candlenut as a component for improved household income is rising as USAID, UH, and local NGOs (CRS, GTZ) consider the possible establishment of an oil-extracting facility in Baucau in partnership with Oils of Aloha.

Objective 3. Improved Watershed Productivity and Sustainability Through the Adoption of Sound Natural Resource Management Practice

Estimated performance indicator: Fodder and fuel wood banks established in three villages in Seical watershed.

Estimated performance indicator: Local NGO's adopt and spread project methodology throughout the country.

Three farming groups involved with the Catholic Relief Service (CRS) and seven with the silk farm group will participate in the land use study trials in the watershed.

Estimated performance indicator: Peace Corps volunteers contribute to attainment of project objectives and voice support for continued participation in project.

Estimated performance indicator: Participating National University faculty adopts and incorporates lessons learned from project into the University's teaching, research and outreach programs.

No activities for these indicators during the quarter.

Fiscal Reports

A. Accrual Report

(1) Jul 07 2003 to Jun 30, 2005 = 24 months

Period of Performance (P):	24
Months to date (M):	15
Quarters remaining (Q):	3

Obligated Total (A)	$ 2,400,000.00
Vouchered Total (B)	$ 889,501.00
Encumbrance Total (B1)	$ 83,000.00
(as of Sep 30, 2004)	
Unliquidated Total©	$ 1,427,499.00
Estimated Accrual (D)	$ 610,499.00
Modified Accrual (E)	$ 296,500.33

Calculations for Estimated Accrual

A/P	$ 100,000.00
A/P x M (used)	$ 1,500,000.00

Calculations for Modified Accrual

m1=Actual project to date expenditures:	$	889,501.00
(Sep 30, 2004)		
t1=Quarters remaining:		3
m1/t1=	$	296,500.33
Estimated Project to Date Expenditures:	$	1,186,001.33
Vouchered amount	$	889,501.00
	$	296,500.33

B. Expenditure Report

Total expenditures (Year to date 09/30/04)

DESCRIPTION	On Campus	Off Campus	Summary Total 09/30/04
Salaries & Wages	$77,433.73	$90,843.73	$168,277.46
Fringe Benefits	$15,558.34	$12,733.78	$28,292.12
Services		$16,692.18	$16,692.18

Materials & Supplies	$4,319.80	$77,086.45	$81,406.25
Travel - Domestic	$1,372.46	$7,715.59	$9,088.05
Travel - International	$181,704.39	$53,857.43	$235,561.82
Print & Publications		$2,429.33	$2,429.33
Util & Communication	$340.47	$4,685.82	$5,026.29
Rentals		$31,991.54	$31,991.54
Repairs		$5.00	$5.00
Stipends		$774.00	$774.00
Equipment		$60,014.00	$60,014
Others	$4,150.08	$56,479.61	$60,629.69
Admin	$102,237.52	$61,171.84	$163,409.36
Indirect costs	$103,411.18	$85,553.54	$188,964.72
TOTAL	$490,527.97	$562,033.84	**$1,052,561.81**

Written Reports, News Articles or Other Material

- Travel reports of UH faculty and staff are available at the project's URL, http://tpss.hawaii.edu/tl.
- Reports on project activities were distributed through radio broadcasts in Baucau and in newsprint in Dili.
- Three video reports were distributed to USAID/Dili and to MAFF. Community videos were distributed to respective communities who participated in the PRA. In several instances, viewing of the video required the assistance of project personnel in the use of a laptop PC with a computer projector.

Implementation Issues/Constraints

Transmittal of documents remains an issue. Essential documents and project receipts continue to be exchanged through courier, i.e., DHL. Other materials are mailed to the PO Box established in Becora. Fax transmissions have been accomplished by asking the Farol Hotel in Dili to serve as an intermediary. Otherwise, documents are scanned and transmitted as attached files.