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QUARTERLY REPORT #15 JANUARY – MARCH 2014

DEZENVOLVE AGRICULTURA COMUNITÁRIA (DAC) PROJECT

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Quarterly Highlights

Farm sales of 71.5 m.t. from the SHAs generated \$57,441 during the quarter:

Production and incomes increased impressively when compared to last year's results. While the number of farmers increased by 50% over the same period in 2013, production in this year was 76% higher and incomes were 80% higher.

Totals of Vegetable Production from all SHAs January – March 2014		
	Kg	US\$
Outdoor Production Original Groups	35,523	\$28,205
Outdoor Production Expansion	36,000	\$29,236
Greenhouse	0	\$0
Total	71,523	\$57,441

Trilateral Cooperation Activity Harvest Ceremony: A Harvest Ceremony for the demonstration plot harvest of beans and maize was celebrated on March 20. The event was attended by the US Charge d'Affaires, the China Ambassador, the Minister of Agriculture, the USAID Economic Growth Officer and the USAID DAC COR, among other Ministry of Agriculture and local government representatives.

Second Meeting of the Horticulture Working Group: On February 27, DAC and the Ministry of Agriculture Department of Horticulture convened the second Horticulture Working Group meeting. 66 attendees represented the private sector (30), government (17), and other NGOs and donor projects (19). The meeting provided an excellent opportunity for networking, and small group discussions identified the key problems facing the sector. Solving those problems will form the agenda for the working group going forward.

Kmanek Farmers Negotiate Price Increases: On March 18, the Kmanek farmer group leaders met with the Kmanek owner Clarence Lim and the Kmanek Agriculture team in Dili. The price negotiation went very well for the farmers – Kmanek accepted all of their requests. Prices for ten vegetables were approved, ranging from 14% increase to 60% increase with an average of 34.4%.

Activities Year Four

This quarterly report follows the Year Four Workplan, describing activities and achievements in DAC's three main activities:

- 1) Assist farmers to develop business skills and establish organizations that can successfully manage their commercial horticulture activities (*PEOPLE*)
- 2) Assist farmers to improve horticulture technology and practices to meet market demand for product quantity and quality (*PRODUCTION*)
- 3) Assist farmers and other value chain actors and stakeholders to develop a strong horticulture value chain that routinely increases sales volume and profits (*VALUE*)

In Year Four, DAC adds two new activities:

- 4) Trilateral Cooperation Demonstration Activity
- 5) (OPTIONAL) ConocoPhillips GDA Agreement Implementation

This report also contains an updated Workplan Timeline, and a summary of project finance and administration for the quarter.

PLEASE NOTE: *Data reflected in this quarterly report may come from DAC's data collection process, or from our partners Kmanek Supermarket and Dilimart. Our partners may work with more farmers than DAC will work with directly, or with farmers that DAC has not yet entered into our data collection system. As the DAC project expansion scales up rapidly, DAC's official monitoring and evaluation data collected for our indicator reporting may differ from the information in this report. All reporting to USAID on DAC's Performance Measurement Plan indicators are considered the final results.*

ACTIVITY ONE

Assist farmers to manage their commercial horticulture activities (PEOPLE)

In Year Four DAC's Community Mobilization Team will replicate the highly successful business skills trainings developed in Year Three to ensure that all DAC farmers gain the skills to plan, grow and manage their businesses. In the area of management, Year Four activities will transition full responsibility for farmer group and contract farming management to the farmer group leaders and members. Two new initiatives are the formation of an Aileu District Horticulture Organization, and the integration of nutrition programming into the DAC commercially oriented program.

Activity 1A: Business Skills Training

Farming as a Business Training

No activity scheduled for this quarter. Completed in 16 communities with 300 farmers (see previous reports), as well as an initial introductory training given to farmer group leaders from 9 Kmanek partner sites (27 farmers).

Farming as a Business Technical Assistance

DAC Community Mobilization staff continued monitoring the impact of the Farming as a Business training, supporting farmers to make good choices about investments in their farming businesses. In this quarter, 70 farmers purchased inputs such as fertilizer, and equipment such as irrigation pumps. 20 farmers used credit, but 50 farmers used their own savings from their vegetable businesses.

Facilitate Access to Credit for Investments

DAC continued to facilitate the linkage between farmers and the Commercial Bank of Timor Leste (BNCTL). In this quarter, 8 new farmers took loans totaling \$1,200. This brings to total to date to 35 loans totaling \$11,300.

DAC facilitated a meeting between the farmer group in Doudato and the BNCTL. BNCTL learned that the farmers asking for credit already had outstanding loans with the BNCTL (related to coffee harvest). Therefore, no additional loans were provided to those farmers. This is an important role for the financial system – ensuring that poor farmers do not become overly indebted. When the farmers repay their existing loans, they will be able to access new credits.

Kmanek Agriculture has noticed the improved production from farmers that make investments. Kmanek is the primary source of inputs such as UV plastic or insect screening, and they have now begun providing in-kind lending to their contract farmers. In this quarter, Kmanek provided loans to 12 farmers totaling \$6,175 for UV plastic, insect screening, and plastic mulch.

Total credit facilitated by DAC project for contract farmers to date: 47 loans totaling \$17,475.

Bookkeeping Training

Complete. Training in Empreza Diak's customized bookkeeping system has been delivered to 15 communities with 286 farmers in the Kmanek areas, and to 2 groups with 37 farmers in the Dilimart areas. Training of Trainers was also given to Kmanek and Dilimart staff, to enable them to continue training new groups in the future. The buyers have now independently provided training and implemented the system with 7 new groups. Four months (for Dilimart) and over one year (for Kmanek) after starting the training, all groups are successfully using the system.

Business Plans for Greenhouse Associations

Business plans are complete for both Greenhouse Associations. Both Associations met with their membership to present the business plans. Throughout the year DAC Community Mobilization staff will support the Associations to carry out their activities according to the business plans.

In this quarter, both Greenhouse Associations made the planned investments in repairing the greenhouses damaged by heavy winds. Each Association invested approximately \$4000 from their Association saving accounts.

Activity 1B: Management Training

Training and Technical Assistance for Managing Commercial Relationship with Contract Buyer

On March 12, DAC assisted farmer group leaders to prepare for the annual price negotiation with Kmanek. Both Kmanek and Dilimart farmers participated in the discussions. Sharing price information gives more bargaining power to each of the groups with their respective buyers. The farmers decided on price increase requests for ten items and developed good arguments to support their requests.

On March 18, the Kmanek farmer group leaders met with the Kmanek owner Clarence Lim and the Kmanek Agriculture team in Dili. DAC facilitated logistics and translation, but the entire meeting was led by the Federation leaders. The price negotiation went very well for the farmers – Kmanek accepted all of their requests. Prices for ten vegetables were approved, ranging from 14% increase to 60% increase with an average of 34.4%. However, Kmanek stressed that quality and variety of the vegetables needed to improve.

Training and Technical Assistance for Internal Group Management

During the quarter, DAC gathered information on the gender balance of the leadership of all the farmer groups. We were thrilled to learn that 50% of the elected leaders of the farmer groups are women. This compares to 30% of the total members being women. This is a positive outcome for empowerment of women in this important income generating activity.

For all of the Leader Meetings and Federation Meetings in this quarter, DAC Community Mobilization staff assisted the farmer representatives to prepare their agenda prior to the meeting, to take notes and to report back to their communities during the scheduled weekly pick-ups when all farmers are together.

Technical Assistance for Greenhouse Association Management

DAC Community Mobilization staff conducted monthly monitoring of the Greenhouse Associations' implementation of their business plans. To date, activities and spending are on track for both Associations.

During this quarter, DAC also assisted Kmanek and the two Greenhouse Associations to create new MOUs. Given their legal status and the finalization of their business plans, the Associations wanted to renew their agreement with their commercial partner. These new MOUs do not include the DAC project role, which was included in the original MOUs.

Activity 1C: Building District Level Horticulture Organization

Form Representative Area Groups in Kmanek and Dilimart Locations, and Coordinate with Non-DAC Horticulture Groups

Complete. The 26 DAC supported farmer groups, with 448 members, are organized into 5 regional associations, with leadership elected for each group and for each region. 4 regions are partnered with Kmanek and one with Dilimart. DAC and the farmer leaders started to share information about the upcoming district wide organization with other stakeholders such as World Vision and Maryknoll which support vegetable farmer groups.

Initial Meetings of District Organization Representatives and Agenda Setting

The first meeting of the representatives was held on February 12. The main discussion was the purpose and objectives of a District level organization. It was very encouraging to hear that the farmers are highly aware that the DAC project will be closing at the end of 2014, and they are actively engaged in discussing ways in which they can continue to manage their activities and their relationships with the commercial buyers without the assistance (technical and logistical) of the DAC project.

Comments during the first meeting:

*Tuir ami nia hanoin federasaun sai hanesan **grupo ida nebe forte atu akumulula grupo**, sai federasaun ida ke forte tebes hare ba oin karik DAC remata nia misaun*

*Tuir ami nia hanoin federasaun ne'e sai hanesan **meus ida atu labele hakotu atividade horticultura** iha dalan klaran*

The representatives agreed on the following Objectives, Vision and Mission. They also decided to explore various options for formal registration with the government.

Objectives

Atu bele organiza no orienta grupo hotu hotu no kontinua halo ligasaun iha grupo laran no mos ho instituisaun seluk atu bele asegura ai han, mekadoria no bele hetan prosperidade hodi participa iha dezvoltamentu nasional.

Vision

Hametin organizaun no hasae rendimento ekonomia komunidadade, liu husi kapasitasaun ba sistema no tekniko ne'ebe diak no hametin relasaun ho parseiru commercial

Mission

Hametin relasaun servisu ho grupo ida- idak hodi fo motivasaun ba membrus atu kumpri regras ne'be iha.

Servisu badinas no halo ligasaun entre federasaun no parseiro hotu hotu hodi resolve no buka solusaun ba problema ne'ebe infrenta.

On March 12, all the group leaders met to elect the District Organization leadership, including President, Secretary, Treasurer and two Community Liaison Officers, one each responsible for communicating District Organization information respectively to the Kmanek and Dilimart groups.

Following the March 12 meeting, DAC Community Mobilization staff worked with elected leaders to develop their by-laws. DAC staff also assisted the farmers to find information about formal registration. The following options were explored:

- Registration with Ministry of Commerce, Industry and Environment
 - The Ministry did not want an agriculture group registered under the Tourism group registration, nor is the farmer group appropriate to be a business. Recommended they register as Cooperative
- Registration as Cooperative
 - Farmers did not want to register as Cooperative due to onerous training and reporting requirements
- Registration with Ministry of Justice
 - Can register as a non-profit Association (same as greenhouse associations)

In the following quarter, the District organization will meet to discuss their workplan for the upcoming year, complete the by-laws, and begin formal registration process.

Agenda Implementation

On February 27, representatives from the District Association attended the Horticulture Working Group meeting in Dili to represent the farmers and gather information about the activities of the group.

Activity 1D: Improve farmer nutrition and health

Nutrition Education

No activity scheduled in this quarter.

Promote Vegetable Consumption

No activity scheduled in this quarter.

ACTIVITY TWO

Assist SHA farmers to improve horticulture technology and practices to meet market demand for product quantity and quality (*PRODUCTION*)

Quarterly Production Results

Each year during this period, the climate and pest challenges of rainy season and the farmers focus on staple crops reduce vegetable production totals. However, production and incomes increased impressively when compared to last year's results. While the number of farmers increased by 50%, production in this year was 76% higher than the same period in 2013, and incomes were 80% higher. The greater increase in incomes is a result of DAC's technical focus on successful production of higher value products (broccoli, cauliflower, zucchini).

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Activity 2A: Continued improvement in technical skills

Outdoor production technical assistance in expansion communities (new technologies and management practices)

DAC staff continued providing high quality technical assistance at farmer sites. The variety of DAC technical assistance methodologies (daily on-site TA, Farmer Field School, study tours to Indonesia) have resulted in impressive production results compared to the same period last year. Production increased by 76% and incomes increased by 80%.

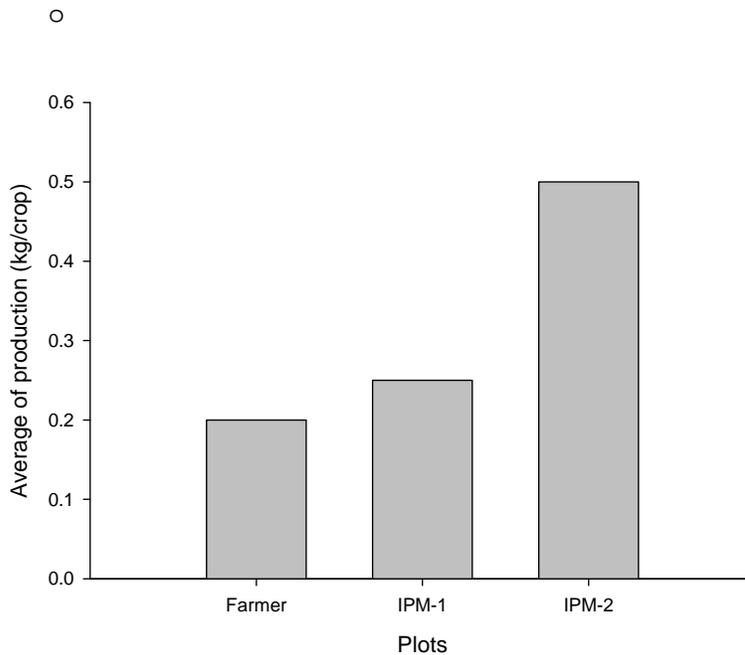
Farmer Field School for IPM and Horticulture Production

The implementation of the Farmer Field School (FFS), co-facilitated by DAC staff certified in FFS Training of Trainers and the FFS consultants, was held in 8 communities for 136 participants throughout the DAC expansion areas from September through December. During this quarter the final reports were submitted. Some interesting results include:

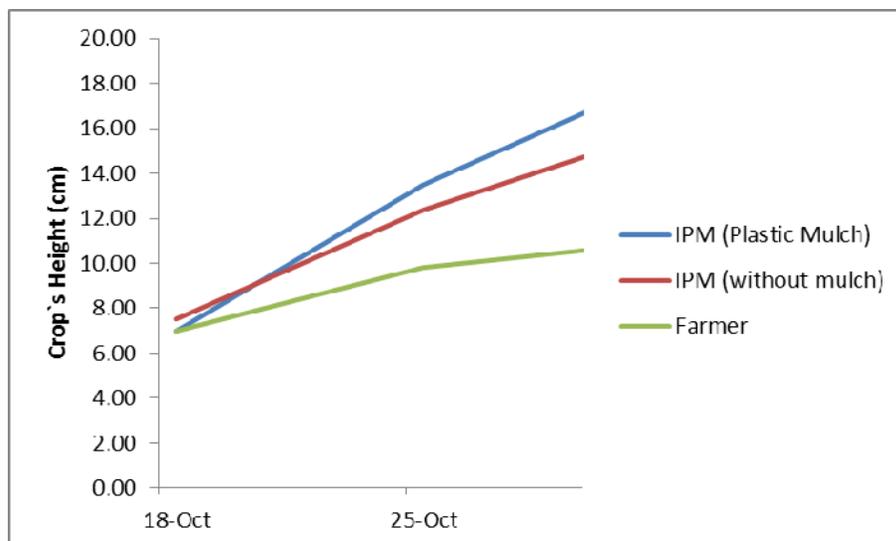
Common problems treated during the FFS included

- Wilting in seedling (roots was cutted accidentally during transplanting)
- Wilting and dying crops on younger crop (0-14 days after planting)
- Plant growth was poorly condition caused by unfertiled soil
- Flower (broccoli or cauliflower) was small in size, caused by the narrow planting distance
- Plant grew poorly indicated by stunting and yellowing symptom
- Fruit was fallen down easily caused by fruit fly

In Fo Liman ba Malu, 6 men and 13 women participated in FFS. Female farmers dominated and were much more active than males. During need assessment, they decided to choose Cauliflower as their commodity for FFS. The FFS plots (“IPM-1 and IPM-2”) showed improvements over farmer production, with the second plot more than doubling the cauliflower produced (and the resulting income!).



Measurement of crop height during growing period also showed great improvements using the FFS IPM techniques (chart shows broccoli growth in Doudato group).



The highest average participation of farmers was shown in Saboria with 80% participation and followed by Doudato (74%). The lowest participation was shown in Moris Foun and Boklelo with 58 and 59% respectively.

Perhaps most importantly, the pre-test and post-test results showed that farmers had made significant gains in the knowledge and skills in most areas. *However, results also reflect the less than 100% attendance, since all farmers were given the pre-test and post-test regardless of their participation in the training program.* In addition, we can see the very low level of knowledge among farmers, and their relatively poor performance on “tests” compared to their consistently improving production quality and quantity.

Farmer Group	Pre-Test Average*	Post-Test Average*	Percent Increase
Saboria	8.4	8.75	4%
Doudato	7.2	8.5	18%
Fo Liman ba Malu	5.6	8	43%
Fatubossa 1	3.7	6.4	73%
Foin Mehi	2.7	4.8	77%
Moris Foun (low participation)	4	3.5	
Sarlala	NA (mistake in calculation)		
Boklelo	NA (post test not given due to other farmer activity)		

*Perfect score is 10

International Training

No activity in this quarter. To date, 40 farmers have attended a one month outdoor vegetable production training at the Value Chain Community in Bandung, West Java. Following the training, farmers from each community worked together to create a demonstration plot and provide training to their fellow group members.

Finalize and disseminate manuals and guides

Completion re-scheduled to next quarter.

Short term technical assistance

Bruno Benavente provided management support for the Agribusiness and Community Mobilization activities, assisting the DAC Agribusiness Advisor who is also assigned to the Trilateral Cooperation Activity (see below).

Danny Fyffe and Mark Notaras completed training materials for the Water Use, Investment and Irrigation training.

Don Humpal began activities off-site (document review, development of survey instrument) for the Pesticide Safer Use assignment. Under a purchase order to the Value Chain Community, Panut Djojsumarto conducted the Pesticide Use Survey.

Activity 2B: Materials and Equipment Distribution

Provide protective materials (UV plastic tunnels or plastic mulch) and irrigation solution (drip or alternative) to 150 new farmers

DAC continued to deliver materials and technical assistance to allow all new farmers to install outdoor production facilities appropriate for their own fields and production. DAC's goal is to provide either plastic tunnel or plastic mulch, and an irrigation solution such as drip irrigation, to at least 150 new farmers. The chart below shows distribution to date, and the number still to be distributed.

DAC's irrigation activity will ramp up in the next 2 quarters during the dry season, when farmers are most concerned with improving their water usage and conservation.

	Plastic Tunnel	Plastic Mulch	Drip Irrigation
New Farmers in New Groups	152	70	32
New Farmers in Original Groups	17	0	0
Total	169	70	32
Remaining to Distribute	Exceeded target!		118

In addition, DAC has provided UV plastic for 227 farmers to build seedling nurseries.

Activity 2C: Environmental Protection and Improvement

Reforestation activities

DAC is collaborating with the MAF Rural Development Program 4 (RDP4) in the implementation of this activity in 8 communities with 173 farmer group members. In this quarter, the following seedlings were planted in Suco Selo Malere and Selo Kraik:

Seedling Types	Total Seedlings Planted
Fruit trees	683
Fodder trees	2809
Industrial trees	4805
Coffee shade trees	1793
Spice trees	2845
Total	12,935

On January 31, DAC held a “Planting Day” event at Hakiak Moris. DAC collaborated with the local elementary, junior and senior high schools to mobilize students to participate in the event, in order to educate and engage the youth in environmental protection. The District Director for Forestry led a discussion of the importance of trees for soil protection and improvement, and introduction to proper planting technique. Over 100 students planted 800 trees on the slopes surrounding this community. The event was attended by USAID COR Candido da Conceicao, local authorities, and representatives from the Ministry of Agriculture and Forestries and the RDP4 program. The event was covered by the Aileu District community radio station.



Planting for green manure

No activity scheduled in this quarter (based on heavy rain season). Prior planting included in the Integrated Agriculture Pilot.

Contour line / terraced planting training

No activity in this quarter.

Activity 2D: Irrigation

Provide water assessments and irrigation solution recommendations to 9 farmer groups

Danny Fyffe, the DAC irrigation consultant, compiled his final report of water assessments and recommendations for low cost, appropriate technology irrigation systems. In total, in 2013-2014, assessments and recommendations for irrigation solutions were delivered for seventeen communities. In total, the consultant provided written detailed assessments and cost estimates for 231 farmers:

The consultant provided added value in the Remixio community by providing an assessment of the Government built greenhouse, particularly the water supply and irrigation system. Though not included in the SOW, this assessment will be important for Remixio farmers if the government is able to rehabilitate the greenhouse for their use.

Training in adequate water application to maximize production

As Mr. Fyffe completed the irrigation assessments/recommendations assignment, DAC learned that the constraints to improving access to water were twofold: technical and economic. DAC farmers need recommendations about technical solutions to increase their water availability, but they also need to understand the productivity increase from adequate water use and the business case for making this investment. Therefore, DAC has enlarged the overall approach to promoting better use of water to include formal training materials for Water Use, Irrigation and Investment training.

Mr. Fyffe worked with Mark Notaras, training design specialist STTA, to create training materials that will bring together the technical and business case for farmers to improve water usage through investments in irrigation. One package of written curriculum with practical exercises and visual aids targets DAC staff and group farmer training. Another package of simple charts and photos provides a guide for DAC staff to deliver/replicate/follow up with the same information to individual farmers in the field. Training materials were finalized and approved for delivery in the next quarter.

Individual irrigation and Farming as a Business (investment planning) technical assistance

The development of the Water Use, Irrigation and Investment training materials provides the knowledge, skills and framework for DAC staff to effectively provide this technical assistance. When the dry season brings the challenge of water management to the forefront of farmers' concerns, DAC staff will be ready to help.

Some farmer groups are already investing in improved water management. DAC assisted farmers in Sarlala and Boklelo to build small water storage tanks that allow groups of 3-5 farmers collect enough water for daily irrigation. DAC assisted the groups to measure their water source, ensuring that adequate water was available for the intended planting area, and to ensure that the groups water collection did not have a negative impact on neighbors' water use. DAC helped the farmers to plan the piping and tank placement, and organize themselves to purchase materials. Dilimart provided assistance with materials such as cement.

Activity 2E: Integrated Pest Management

Pest/Disease Prevention Training

No activity in this quarter. To date in Year 4, training provided through Farmer Field School in 12 communities.

Organic Pesticide Training and Use

No activity in this quarter. To date in Year 4, organic pesticides production, using local materials, and organic pesticide safe use were taught through the Farmer Field School in 12 DAC communities.

Technical assistance to commercial buyers and farmers on safe pesticide storage, distribution, use, and recordkeeping for Good Agricultural Practice

DAC developed and received approval for a scope of work for a pesticide safe use specialist, Mr. Don Humpal, to assess the current situation and design a training and technical assistance program to assist both the commercial buyers (who provide pesticides to the farmers) and the farmers. In this quarter, a survey (designed by DAC staff in collaboration with Mr. Humpal) was conducted by a pest/disease management specialist associated with the Value Chain Community in Indonesia. The survey gathered information on farmer knowledge of pest/disease management, current pesticide use, and knowledge and practice of safety measures. The survey results were analyzed and the final report submitted. In addition, DAC staff began collecting background information on the government and institutional policy/law/regulation/capacity regarding pesticide import, sale and use. This research was submitted to Mr. Humpal whose assignment in country will be completed in the next quarter.

Activity 2F: Integrated Agriculture Pilot

This pilot helps farmers to improve their use of animals for fertilizer and to increase the value of their animals through fattening, how to use diverse plants to provide food for animals, to deter pests from vegetable plots, and to improve soil fertility that will increase vegetable production.

Training in Integrated Agriculture approach to horticulture

Following up on last quarter's training on the Integrated Agriculture approach, DAC staff provided training on January 23-24 on the proper feeding program for penned animals. DAC has already assisted farmers to plant the proper plants and trees to use as animal fodder. This training showed them how to gather and prepare the proper amounts to support healthy development of the cows. The 3 pilot farmers and one farmer who is replicating the system independently attended the training.

Implementation and monitoring of two pilot sites

The three pilot farmers all completed their pens for the animals. DAC provided cement for the floor and zinc for the roof, while the farmers provided the local materials for the fence and all the labor for construction. To date, farmers are carrying out the penning, feeding and collecting of manure and urine according to DAC training. In addition, DAC has noticed that 2 farmers have now replicated what they have seen with the 3 pilot farmers, without any assistance from DAC. These "early adopters" may not be using the same materials (such as

using wood instead of zinc for the roof), but they are implementing the activity at their own initiative in a way that fits their own businesses. This is a success for this one activity, but also demonstrates how much more rapidly DAC farmers are adopting new techniques, compared to the slow uptake of new ideas during the initial activities in the Selo area in 2011.

Promotion and dissemination of lessons learned

No activity planned in this quarter. Final results to be measured and announced in August.

ACTIVITY THREE

Assist SHA farmers and other value chain actors and stakeholders to develop a strong horticulture value chain (VALUE)

Activity 3A: Facilitate Horticulture Working Group

On February 27, DAC assisted the Ministry of Agriculture to facilitate the second official meeting of the Horticulture Working Group (HWG). The meeting was held at the MAF meeting room, with snacks and lunch provided by MAF. 66 attendees represented the private sector (30), government (17), and other NGOs and donor projects (19).

The agenda began with a short discussion of imports vs. domestic production. Several private sector and government participants raised concerns about the impact of ASEAN membership on the horticulture sector.

DAC made a brief presentation of the horticulture value chain diagram, to create a framework for the discussion. Participants were then divided into groups according to their role in the value chain, and asked to discuss the following:

1. What are the major problems facing your business?
2. What is a solution that you can accomplish?
3. What is a solution that requires working together with other parts of the value chain?

The information gathered during this meeting will provide the “agenda” for the Horticulture Working Group’s activities over the next year. During the next meeting, it is expected that the HWG will discuss a leadership structure, and begin discussion of a workplan.

Following up on the interest displayed on two key topics during the Horticulture Working Group, DAC worked with HWG participants to organize two events:

1. “Impact of ASEAN Membership on Fresh Produce Import and Export” seminar with the ASEAN Impact Assessment Team from the Asian Development Bank on March 27. The seminar included presentations from Christopher Edmonds, Principal Economist, Asian Development Bank Pacific Department; Dr Richard Pomfret, Professor of Economics at the University of Adelaide; Dr Uwe Kaufman, Researcher, University of Adelaide Institute of International Trade. 10 participants from the public and private sector also engaged in a question and answer discussion with the ADB team.

- Technical Training for Input Suppliers will be delivered in the next quarter (see “business development support to key actors in the value chain”)

Activity 3B: Technical assistance to DAC commercial partners

Post-harvest handling

No activity in this quarter. In Year 4 DAC has provided an expert consultancy to assess Kmanek post-harvest handling system, and supported Kmanek in developing grading standards, materials, and delivering training.

Supply chain management

The DAC Chief of Party and the Value Chain Team Leader continued to provide technical assistance and monitoring of the Kmanek and Dilimart implementation of the seed distribution and production management system.

Product promotion

No activity scheduled in this quarter.

Activity 3D: Business development support to key actors in value chain

Input Supply

DAC will regularly provides market information and market linkages, and encouraged the input suppliers participation in the Horticulture Working Group. 6 input suppliers attended the February meeting.

Traders/Wholesalers

No activity scheduled in this quarter.

Buyers

No activity scheduled in this quarter.

Finance Institutions

No activity scheduled in this quarter.

Activity 3E: Refine horticulture market research

DAC began to analyze the most recent data (from dry season 2013) and cross-check the findings with the previous year. DAC also replicated the “one week survey” with a representative sample of vendors during the months of January/February. DAC has found that the information from the “one week survey” provides a more reliable source of data than the “one day snapshot” of all the vendors. Information about turnover rates and wastage over a week period provides a more accurate estimate of quantities of vegetables bought and sold. Final results will be published before the end of Year Four.

Activity 3F: Provide training and internship opportunities

Students from universities

No activity scheduled in this quarter.

MAF extension agents

DAC provided a complete schedule of the Farmer Field School training in all 8 communities to the Aileu District Director of Agriculture and to the National Director of Extension, and invited the participation of any extension agents. MAF extension agents in the Trilateral Food Security Activity sites in Ainaro, Bobonaro and Aileu Districts are very engaged in the trainings.

ACTIVITY FOUR

Trilateral Cooperation Demonstration Activity

Activity 4A: Preparation

Site selection and preparation – Cotolau

Complete.

Site selection and preparation – District pilot sites

Complete for Phase 1 Beans in Ainaro and Bobonaro Districts.

Crop selection, variety selection, sourcing seeds

Complete. DAC will work with two crops approved by USAID and MAF: beans (dried beans commonly referred to as “koto mean”) and onions (test of red onion and Bombay onion). DAC selected 5 varieties of beans (3 local and 2 imported (RWV 1348 and MWIRASI) recommended by Seeds of Life) for the Phase 1 demonstration plots. Four onion varieties selected for the Phase 2 demonstration plots are South Pacific Seeds Rio Red Rocks, East West Seeds Tuk Tuk, and Rocalba Cebolla Babosa and Cebolla Flora.

Training participant selection

Complete. DAC selected the following participants:

1. UNITAL and UNTL students (total 20)
2. Seeds of Life and MAF extension staff (total 10)
3. NGO/donor staff (total 5)
4. Smallholder farmers (total 52)

Activity 4B: Implementation

DAC assigned one full time staff to the Cotolau site, and one staff to each of the District sites (Ainaro and Bobonaro Districts). The staff are all performing very well, delivering impressive results while being totally independent in their daily work. Farmers and MAF extension agents in Ainaro and Bobonaro are extremely interested in the demonstration plot and

participate regularly and fully in the activity. DAC staff have also begun to visit individual farmer fields to provide technical assistance and training on the farmers' own sites.

Season 1 Beans

Bean cultivation and harvest was completed at all sites during this quarter. Demonstration plots compared farmers' traditional planting techniques with DAC recommended improved techniques. All DAC techniques are based on materials and skills that the farmers in remote locations (traditionally bean growing locations) can replicate.

The major challenges identified were:

1. Heavy rains and heavy soils destroy roots (asphyxiation) and create failure rates during transplanting
2. Heavy winds that destroyed plants weakened by bean fly (that may have otherwise survived)
3. Pests including bean podborer, leaf miner, and bean fly
4. Poor soil fertility and pH levels

Despite these challenges, even simple improvements yielded impressive productivity increases. Results from the Cotolau and District demonstration plots were as follows:

Cotolau Site: Traditional Technique and Improved Technique were implemented for all of the varieties at the demonstration site.

COTOLAU SITE RESULTS		Average Grams per Plant	
Variety	Traditional Techniques	Improved Techniques	
MWIRASI	62	176	
RWV 1348	4	198	
Local Red (bush)	95	88	
Local White (climbing)	43	104	
Ululefa (climbing)	31	165	

District Sites: Average yields of local varieties using Traditional Techniques were collected from DAC's on-site survey of actual farmer fields. Average yields using Improved Techniques were collected from the demonstration plots.

DISTRICT SITE RESULTS		Average Grams per Plant	
Variety	Traditional Techniques	Improved Techniques	
MWIRASI	N/A	180	
RWV 1348	N/A	162	
Local Red (bush)	26	54	
Local White (climbing)	30	127	
Ululefa (climbing)	40	116	

These are extremely important results that need to be shared with MAF and other agriculture development and food security stakeholders.

Season 2 Onions

No activity scheduled in this quarter.

Events and Visits

A Harvest Ceremony for the demonstration plot harvest of beans and maize was celebrated on March 20. The event was attended by the US Charge d'Affaires, the China Ambassador, the Minister of Agriculture, the USAID Economic Growth Officer and the USAID DAC COR, among other Ministry of Agriculture and local government representatives.

UNTL participation

Students from UNTL and UNITAL continued to participate enthusiastically in the training.

Activity 4C: Training

Prepare 11 technical and 3 complementary training modules

In the last quarter, DAC prepared 4 technical modules that included the remaining aspects of 1 complementary module (Safeguarding Environmental Resources). In this quarter, DAC

prepared 6 technical modules that also included aspects of the 1 complementary module Safeguarding Environmental Resources:

Training 2: Crop Maintenance

1. Irrigation: Drip irrigation, channel irrigation, and the importance of adequate water use (Environmental Resources 3)
2. Cultivation: Weeding, fertilization, and thinning
3. Bulb development (for alliums): The importance of adequate water, nutrition, and climate for proper bulb formation
4. Plant disease identification and treatment: The identification of major pest/disease challenges and how to address them with IPM techniques, including prevention and organic control methods

Training 3: Harvest

1. Harvest (part 1): Management of the impacts of early or late harvest.
2. Post-harvest handling and storage (part 1): Drying, curing, and storage to prevent spoilage

Deliver training at Kotolau demonstration plot

DAC combined Training 2: Crop Maintenance and Training 3: Harvest into one training session. Since beans are harvested over a month long period, it was helpful to show students the initial results of the harvest while reinforcing the proper crop maintenance practices. The training session was delivered three times at the Cotolau demonstration plot:

- March 11 (UNITAL/UNTL students)
- March 13 (NGO/donor project/local farmers)
- March 19 (MAF extension, Seeds of Life, local farmers)

Deliver training at District pilot sites

The training session was delivered at each District site:

- April 1 Suco Lebos, Bononaro District
- March 27 Suco Maulau, Ainaro District

Activity 4D: Promotion and Dissemination

Beans “taste test” event

No activity scheduled in this quarter.

Activity Five (Optional) Implement ConocoPhillips GDA

Activities TBD

Administrative and Technical Management

Annex 2 Year 4 Workplan Timeline

See next two pages.

DAC YEAR FOUR WORKPLAN TIMELINE	2013				2014							
	September	October	November	December	January	February	March	April	May	June	July	August
Activity One: Assist farmers to manage commercial horticulture												
<i>Activity 1A: Business Skills Training</i>												
Farming as a Business Training												
Farming as a Business technical assistance												
Facilitate Access to Credit												
Bookkeeping Training												
Business Plans for Greenhouse Associations												
<i>Activity 1B: Management Training</i>												
Training & TA for managing commercial relationship with buyers												
Training and TA for Internal Group Management												
TA for Greenhouse Association Management												
<i>Activity 1C: Building District Level Horticulture Organization</i>												
Form Representative Area Groups and Coordinate with non-DAC groups												
Initial Meetings and Agenda Setting												
Agenda Implementation												
<i>Activity 1D: Improve Farmer Nutrition and Health</i>												
Nutrition Education												
Promote Vegetable Consumption												
Activity Two: Improve horticulture production to meet market demand												
<i>Activity 2A: Continued improvement in technical skills</i>												
Technical assistance in expansion sites												
Farmer Field School for IPM and Horticulture												
Manuals and Guides												
<i>Activity 2B: Material and Equipment Distribution</i>												
Provide protective materials and irrigation solutions												
<i>Activity 2C: Environmental Protection and Improvements</i>												
Reforestation												
Planting for green manure												
Contour line / terraced planting training												
<i>Activity 2D: Irrigation</i>												
Water assessments and irrigation recommendations												
Training in adequate water application												
Individual irrigation investments												

DAC YEAR FOUR WORKPLAN TIMELINE	2013				2014							
	September	October	November	December	January	February	March	April	May	June	July	August
Activity 2E: Integrated Pest Management												
Pest/Disease Prevention Training (FFS)												
Organic Pesticide Training and Use (FFS)												
Assistance to farmers/buyers on safer pesticide use & recordkeeping												
Activity 2F: Integrated Agriculture Pilot												
Socialization and farmer selection in Integrated Agriculture approach												
Implementation and monitoring of 2 pilot sites												
Promotion and dissemination of lessons learned												
Activity Three: Develop Strong Horticulture Value Chain												
Activity 3A: Facilitate Horticulture Working Group												
Activity 3A: Facilitate Horticulture Working Group												
Activity 3B: Technical assistance to DAC commercial partners												
Post-harvest handling												
Supply chain management												
Product promotion												
Activity 3D: Business development assistance to key actors												
Activity 3D: Business development assistance to key actors												
Activity 3E: Refine horticulture market research												
Activity 3E: Refine horticulture market research												
Activity 3F: Provide training and internship opportunities												
Activity 3F: Provide training and internship opportunities												
Activity Four: Trilateral Cooperation Demonstration Activity												
Activity 4A: Preparation												
Activity 4A: Preparation												
Site selection & preparation - Kotolau												
Site selection & preparation - District pilot sites												
Crop selection, variety selection, sourcing seeds												
Training participant selection												
Activity 4B: Implementation												
Activity 4B: Implementation												
Season 1 Beans												
Season 2 Onions												
UNTL Participation												
Activity 4C: Training												
Activity 4C: Training												
Prepare training modules												
Deliver training at Kotolau and District pilot sites												
Activity 4D: Promotion and Dissemination												
Activity 4D: Promotion and Dissemination												
Beans "taste test" event												