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“Helping Indonesia to Grow”

AMARTA
Quarterly Report of Project Activities and Achievements
Quarter Four, 2010
July 1 – September 30, 2010

Quarterly Overview

AMARTA maintained its focus on cocoa, coffee, high value horticulture and policy advocacy during the quarter, expanding training activities in cocoa, coffee, citrus, bananas, and floriculture. Numerous successes were achieved as quality and production continued to increase and access to new markets expanded for farmers who harvested a number of crops and received substantial premiums, increasing income, while decreasing costs by implementing good agricultural practices. The report below provides a number of examples of AMARTA's beneficiaries improving their livelihoods as the program continues to help Indonesia to grow.

Project Management

Monitoring and Evaluation

The following progress was made this quarter against the ten indicators approved by USAID:

1a. Number of additional hectares under improved technologies or management practices

In quarter four 2010, AMARTA added **3,949 hectares** under improved technologies through implementation of value chain interventions including the following: Coffee (1,071 hectares), Vegetables (7 hectares), Tropical Fruit and Flowers (2,871 hectares).

1b. Number of additional units of animals, fish, and other aquaculture products under improved technologies or management practices

In quarter four 2010, AMARTA added **19,360 kilograms** of Barramundi and mixed fish (Aquaculture) and **13** new swine (Livestock) under improved technologies through implementation of value chain interventions.

2. Number of producers organizations, water users associations, trade and business associations, and community-based organizations (CBOs) receiving USG assistance

In quarter four 2010, AMARTA assisted **322 associations and farmer's groups** through implementation of value chain interventions, including the following: Coffee (148 organizations), Vegetables (6 organizations), and Tropical Fruit and Flowers (168 organizations).

3. Number of agriculture related firms benefiting directly from USG supported interventions

AMARTA implemented activities this quarter in partnership with **7 agriculture firms**, including the following: Coffee (2), Vegetables (5).

4. Number of individuals who have received USG supported short term agricultural sector productivity training

AMARTA conducts training programs to provide knowledge on best agricultural practices in an effort to improve local farmer's harvesting capacity and to meet international standards. In quarter four 2010, **5,312 farmers** participated in agribusiness trainings, including the following: Coffee (1,383 participants), Vegetables (253 participants) Tropical Fruit and Flowers (3,405 participants), and Regional Agribusiness and Competitiveness Alliances (271 participants).

5. Percent change in value of international exports of targeted commodities as a result of USG assistance

This quarter, export values decreased by 6% compared to last year's quarterly sales as reported by PT Olam Indonesia for Cocoa export from South and Southeast Sulawesi primarily as a result of continued rain. The total value of international exports during this quarter was \$21,830,172 since AMARTA is now working with fewer exporters.

6. Percent change in value of purchases from smallholders of targeted commodities as a result of USG assistance

Impact of USG assistance has produced additional positive results in the value of purchases from smallholders compared to last year's quarterly sales figures:

Cocoa South & Southeast Sulawesi, PT. Olam Indonesia: Value of purchases was \$19,768,363 for the quarter, a reduction of 8% from last year

CV. Bimandiri: Total value of purchases was \$36,261, an increase of 6% from last year

Aquaculture, Maria Bintang Laut Cooperative, Kokonao: Value of purchases was \$19,818 for the quarter, an increase of 36% from last year

7. Number of new technologies or management practices made available for transfer as a result of USG assistance

AMARTA activities have introduced **3 new technologies** or management practices available for transfer to farmers this quarter, including:

Vegetables (3): (1) Land tiller mechanization for green beans, (2) soil sterilization with chlorida silver for broccoli to reduce club root, and (3) Five new varieties of green beans from IVEGRI.

8. Number of additional surveillance and/or control systems in place for agricultural threats

This quarter AMARTA activities introduced no **new control systems**.

9. Number of public private partnerships formed as a result of USG assistance

This quarter, AMARTA activities have established **I Public Private Partnership** to enhance agribusiness interventions:

(1) San Isidor Cooperative with Highland Agriculture Development Timika (coffee roasting and packaging)

10. Number of women's organizations/associations assisted as a result of USG Supported interventions

In quarter four 2010, AMARTA assisted **II women's organizations/associations** through implementation of value chain interventions, including the following: Coffee (2 organizations), Vegetables (5 organizations) and Tropical Fruits and Flowers (4 organizations).

AMARTA Grants Program

During the quarter, AMARTA continued to work with Baliem Arabica Cooperative and Maria Bintang Laut Cooperative to implement important activities in Papua. An update of successful initiatives and ongoing implementation will be provided in the PADA Quarterly Report.

Advocacy for Improved Enabling Environment

Network and Partnership Development

Pak Pak Bharat Pro Agribusiness Community Alliance Wins a Highly Competitive Grant from the British Council

After numerous evaluations and submissions over the past three months, the Pro-Agribusiness Alliance of Pak Pak Bharat recently received good news that they were selected to receive a prestigious grant award from the British Council. The competition included more than 600 participants from all over Indonesia with only 45 organizations selected, including only three winners for start-up entrepreneurship development.

The Alliance submitted a proposal to stimulate the organic fertilizer market in Pak Pak Bharat, which is an entirely new idea and business concept. The Community Entrepreneurs Challenge (CEC) Awards and International Young Creative Entrepreneur (IYCE) Awards 2010, funded by the Arthur Guinness Fund and implemented by the British Council, will allow the Alliance to develop innovations in community based entrepreneurship, which will bolster agriculture development in the district.



DR. Sabam, and other winners of Community Entrepreneurs Challenge 2010

The award was formally presented by the English Ambassador on September 23rd in Jakarta, following a three-day workshop and presentation of the selected projects. All of the Alliance members, government officials, and agriculture stakeholders of Pak Pak Bharat who were involved in the proposal thanked AMARTA for the assistance and support provided throughout the competition.

The total grant value is \$12,500, which will establish an organic compost fertilizer production site to support farmers. The raw material will be purchased from neighboring districts, creating a multiplying affect for the entire region to benefit financially, as well as educationally, as farmers learn the skills required in processing organic fertilizer from rabbit farms. It is expected that the Alliance will substitute fertilizer requirements at a lower price, in addition to reducing the use of chemical fertilizers.

"We realize that without the motivation and support from USAID/AMARTA we would never have succeeded in winning this grant award. It was an incredible learning experience for us and we learned that if we are organized and work hard we can accomplish many successes. On behalf of the Alliance, we thank AMARTA who continues to help farmers improve their lives."

Sanusi Baurea, the Director of the Pak Pak Bharat Agribusiness Alliance

Accessing Finance for Farmers through the Simalungun District Alliance

Following up on previous successes, AMARTA and the Agribusiness Alliance in Simalungun held an event on accessing finance as requested by farmer groups to support agriculture development. The event took place on September 6th and was attended by the Director of Agriculture of Simalungun District, Bank Mandiri, and Bank Sumut who presented their programs, particularly loans supporting agriculture development. Bank Mandiri presented a program designed especially for farmers where the annual interest rate is only 6% for all agriculture commodities. As a result of the event, some of the Alliance members requested that Bank Mandiri present the lending information to farmers in their sub-districts in an effort to allow farmers to access credit. Two farmer groups have already submitted loan requests and are awaiting a response in October.

Dialogue for Coffee Stakeholders in North Sumatera

Focusing on improving the coffee value chain in North Sumatera, AMARTA initiated a workshop and dialogue among coffee stakeholders in cooperation with the North Sumatera Senator's Office, represented by Mr. Parlindungan Purba. The Workshop was attended by the Head of Estate Crops of North Sumatera Province, Mr. Ashar Harahap, the Specialty Coffee Association of Indonesia (SCAI), AMARTA's COP, Dr. William Levine, coffee farmer representatives, traders, exporters, and other government officials.

The workshop was held on September 30th, and attended by more than 270 participants. As the result of this event the North Sumatra Coffee Forum will be formed to create partnerships, solicit opportunities, and function as an advocacy group for coffee. AMARTA anticipates the formation of the forum will stimulate ideas and resources from the public and private sector.



Senator Parlindungan Purba and Dr. William Levine speaking at the workshop

Sulawesi RACA Proposal Development Training and Registration



A discussion on the proposal development

AMARTA held training in Mapili, West Sulawesi on September 23rd to increase knowledge and skills for the Alliances's board and members in developing proposals. Through this event participants learned to formulate their needs and articulate essential activities. The training was held in AMARTA's field office with 35 participants. The event has already reaped rewards as three proposals were forwarded to the district government

and exporters. These proposals include: Working Cooperation between Alliances (SIKAP MANDAR) and exporters; Assistance for UKM (*Usaha Kecil dan Menengah*/Small and Medium Entreprises): and a road development request.

“This is the first time I participated in proposal training and it is very useful indeed. I learned the importance of stating our goals and focusing on results.” Mr. M. Tahir, farmer from Binuang Village, West Sulawesi

“I think this is a good training provided by AMARTA. I have already received training on good cocoa practices, but now I understand the importance of Alliances for cocoa farmers and the importance of management.” Mr. Kahar from Anreapi Village, West Sulawesi

In order to empower the three newly established Alliances: SIKAP MANDAR, ALMAKOTA, and ASTAKWA, members from the organizations met in August to discuss the formulation of by-laws. The discussions included, membership dues, office registration, and organizational management. The three groups plan to formally register with the Development and Welfare Agency of each respective district next quarter.

Deli Serdang Community Banana Alliance Empowering Women Farmer Groups in STM Hulu

The Alliance of Deli Serdang aims to improve the capacity of women banana farmer groups in nearby sub-districts. The Alliance conducted assessments to identify the basic needs and discovered that women do not realize the importance of collaboration and organization, tend to be individually focused, and rarely have access to government officials; when they are able to reach government officials they are frequently unable to articulate stakeholder’s priorities. In an effort to improve the situation, AMARTA worked closely with nine women farmer’s groups in STM Hulu Sub-district, Tiga Juhar Deli Serdang, in establishing advocacy groups. Participating farmer groups, represented by five women from each group for a total of 45 women, were provided training and technical assistance on basic policy strategies and understanding the benefits of collaboration to fulfill the goals of improving agriculture in their villages. As the result of this effort the women improved their understanding of advocacy strategy, and are expected to access and lobby the government to support women farmers in the area.

Continued Collaboration with Local Governments in Bali

AMARKATA and ALKANA Alliance Meeting

To continue the support provided to AMARKATA (*Alliasi Masyarakat Kakao Tabanan*) and ALKANA (*Aliansi Kakao Jembrana*) on organizational development, and updating cocoa development issues, AMARTA facilitated a meeting in Pengragon Village, Jembrana, Bali on July 21st and 22nd consisting of 33 participants from the two Regional Agribusienss Competitiveness Alliances (RACAs). The discussions



devised a range of conclusions that were in turn discussed on July 23rd between ALKANA and the Estate Crops Agency of Bali. The meeting included 44 participants from farmer groups and the government. As a result of this initiative UML (Unit Manajemen Lapangan/ Field Unit Management) of Bali Province proposed that loans should be provided to farmers at only 2% interest per year for cocoa and coffee. Also, UML will provide assistance for farmers in cocoa management planting as noted in the Governor's Decree No. 1 from 2008. In addition, government officers from Jembrana District stressed that farmers should consider higher quality fermented cocoa so they can receive a better price. The members of the Alliances noted that it is important for farmers to sell their cocoa collectively to decrease transportation costs.



The Chairman and Vice-Chairman of the Alliances chaired the meeting

AMARKATA and ALKANA Meet Local Parliament and Estate Crops Agency

In August, the two RACAs in Bali met with farmers to formulate strategic planning for cocoa development and policies in Jembrana and Tabanan. The purpose of these events was to strengthen the Alliances' capacity in identifying problems related to cocoa development, facilitating and encouraging solutions to these challenges, and preparing materials to advocate for farmers. During the event, AMARKATA and ALKANA scrutinized previous findings about equipment, technology adaptation, and marketing.

On September 24th, AMARKATA held a hearing with the Parliament to influence government policies in support of cocoa farmers. The Chairman of Parliament responded that he was aware of the limited tools and equipment farmers were provided, and since these are very important for cocoa development he committed to coordinating with the Forestry and Estate Crops Service to identify which tools and equipment should be included in the government budget for distribution to farmers.

Regarding extension workers, the Parliament recommended that the government consolidate agents in a specific office to optimize their performance. The Agency of Agricultural Extension (Badan Penyuluhan Pertanian) is expected to be created in early 2011 in order to improve coordination and collaboration. The Chairman of Parliament also promised to ensure that efforts were made to provide high quality extension agents in the field who have knowledge and skills about cocoa practices. In relation to field visits, he directed the representatives of Forestry and Estate Crops Services to include budgets for field visits next year, while concerning clones, he instructed the Forestry and Estate Crops Office to develop a program to make good clones and distribute them immediately.



Dialogue between AMARKATA and Parliament



The Chairman of Parliament and Commission II

Cocoa

Indonesia's cocoa farmers continue confronting serious challenges in the form of widespread disease infestation, aging stock, poor practices, and new taxes on exported production. The average yields from 2009 have declined from 590 kg per ha to 400 kg per ha. AMARTA is pleased to report that in the fifteen months the project has focused on improved production practices, the average yield on project assisted fields has actually increased by 160 kg per ha to 750 kg per ha. Below, we provide data on methods AMARTA cocoa specialists used to achieve this growth.

Sulawesi Kakao Alliance (ASKA) Program - Sulawesi

Farmer Field Day in North Kolaka

AMARTA held a Farmer Field Day on July 7th for 50 farmer groups in Pakue Village, Pakue Utara Sub-district with 147 participants. In addition to farmers, government officials from the Estate Corps Office of North Kolaka, North Kolaka council members,



Demonstration grafting by farmers

exporters PT Olam and JBP Armajaro, and government extension officers participated in the event. The activities conducted during the field day included: A presentation of demonstration plot gardens by farmers, field visits, trial clone exhibits from the Indonesian Coffee and Cocoa Research Institute (ICCRI) identifying superior local clones, side-grafting demonstrations from local farmers, and an exhibition.

On July 28th and 29th a similar event was held in Bussu Village, Tapango Sub-district and Pulliwa

Village in Bulu Sub-district, Polawali Mandar District, West Sulawesi. In total, 130 farmers from Bussu Village participated, including 127 (90%) men and 13 (10%) women, while 120 farmers from Pulliwa Village attended including 81 (67%) men and 39 (33%) women.

The training aimed to strengthen participants's understanding of AMARTA cocoa training and share experiences in order to motivate newer farmers. Furthermore, the training also illustrated various technologies that have been widely implemented such as: Replanting, ICCRI's and local superior clone trials, cocoa nurseries, natural pesticide usage, pruning, top grafting, green budding, and side grafting. PT ECOM also demonstrated the fermentation process and offered farmers an opportunity to collaborate processing fermented and non-fermented beans.

“Even though my garden is just nine months old it is very productive. Previously, I only produced a total of 500kg from 750 cocoa trees per year, but now, during the first harvesting season, my garden produced 923kg from 750 trees. I optimistically predict that my garden will increase for the second harvesting season. I am also very happy that there are fewer pest and disease attacks as I follow AMARTA's training. Thank you to USAID/ AMARTA for all the support to me and other cocoa farmers in Sulawesi.”

Mr. Sukardi, Cocoa farmer from North Luwu, South Sulawesi

The average cocoa production prior to AMARTA's program was 502 kg per ha in 2009, and there was a significant increase of production after farmers became involved in the program, reaching 600kg per ha. In 2010, this increased to an average of 750kg per ha. The figures below show the first harvesting season (June – September 2010) and notes hectares covered from activity of adoption and replication.

- Harvest frequently; 6,921,036 (6,921 ha)
- Pruning; 5,490,715 (5,490 ha)
- Sanitation; 6,794,903 (6,794 ha)
- Fertilization; 4,827,585 (6,974 ha)
- Rehabilitation incl. Side grafting, chupon grafting; 5,676,791 (5,676 ha)
- Replanting; 1,208,789 (1,208 ha)
- Nursery; 1,638,540 (1,638 ha)
- Shade tree; 1,646,162 (1,646 ha)

As an example, the demonstration plot in Bussun District, Polman tallied the highest production among all locations, totaling 1,063 tons. This is due to numerous productive cocoa plants. In 2009, before participating in AMARTA activities farmers from Bussun received income of Rp 12,985,000 per hectare per year, while after they followed good agriculture practices recommended by AMARTA, a significant increase in income of Rp 25,299,400 per hectare (Jan-Sept 2010) was earned. This increased income was influenced by total production, quality, and price.

Progress of Cocoa Model Garden Demonstration Plots

Demonstration plots aim to show good agricultural practices introduced by AMARTA. The plots consist of several activities such as intensification, rehabilitation, replanting, and clone trial and selection. They are intended to highlight the best farmer's fields in the area to provide a model for neighbors to replicate. Seeing other farmers succeed tends to motivate additional farmers to implement newly learned technology that they might have been hesitant to try due to uncertainty regarding the outcome.



A replanting demonstration plot garden at Pakue Village, North Pakue Sub-district, Polman

Previously farmers did not know how to manage their cocoa gardens appropriately. However, through this activity, farmers have acknowledged that good agricultural practices substantially improve their yields and quality. For instance, when the intensity of rain is high, which can adversely influence gardens as it rapidly stimulates fungi/phytophthora, farmers now know how to overcome this obstacle. From AMARTA's training, farmers can avoid problems by using a natural pesticide on branches affected by trunk canker and bury the spoiled cocoa, branches, and leaves.

As shown in table I below, decreasing incidence of pests and diseases is evident at every AMARTA location since cocoa farmers who received training implement good agriculture practices. As a result, farmers will enjoy higher cocoa production and improved cocoa quality.

Table I: Pest and Disease (before and after AMARTA's program)

Location (Demplot)	# of (ha) treated	% of Pest and Diseases before AMARTA's Program (2009)	% of Pest and Disease after AMARTA's Program (January – September 2010)	% Decrease of Pests and Diseases
Puliwa	423	60% helopeltis	20% helopeltis	40% decrease
Bussu	500	60% helopeltis	0% helopeltis	60% decrease
Wotu	289	90% trunk canker	0% trunk canker	90% decrease
Batualang	750	50% of VSD	10% of VSD	40% decrease
Lapai	250	40% of VSD	20% of VSD	20% decrease
Pakue	2600	40% of VSD	20% of VSD	20% decrease

A typical farmer's experience can be illustrated by Mr. Radiman's. In early January 2010, he participated in AMARTA's training program with his farmer group in Bunga Sarre. He gladly followed the training where he learned about identifying problems in his

garden and determined the proper way to address the issues. Based on his experience, combined with technical assistance from AMARTA field staff, Mr. Radiman decided to transform his garden into a model demonstration plot. He hoped the area would become a model for cocoa farmers nearby to visit and learn new techniques. Mr. Radiman also started to reduce non-natural pesticides and applied frequent harvest, pruning, sanitation, and fertilization known as PsPSP, and as a result of his efforts and hard work he achieved excellent yields. During his first harvest in 2010 from January through July, total cocoa production reached 494 kg, an amazing increase of 53% compared with his 2009 production. He was very confident that the next harvest production will increase even more as he continues additional PsPSP methods under the guidance of AMARTA trainers.



Mr. Radiman with his cocoa trees

"Previously, my garden was dry with leaves such as broom sticks, but after going through counseling with AMARTA staff, now my garden is healthy, and I have transformed it into a demonstration plot and model garden for my friends and neighbors to see. I followed what was taught by AMARTA staff which is to apply PsPSP methods, and this proved to control pests and diseases and increased production by 53%. Thank you to USAID/AMARTA for your guidance and support."

Mr. Radiman, Farmer in Bunga Sarre

Clone Trials with ICCRI

In an effort to improve the overall quality of cocoa trees and prepare farmers for the future, significant clone trials have been conducted with the Indonesian Cocoa and Coffee Research Institute (ICCRI), Jember on testing six cocoa clones. The collaboration aims to provide better planting materials for farmers and serves as the basis for wider distribution to farmers in Sulawesi and Bali. The clone trials are also intended to produce good planting materials with high productivity that is resistant to pests and diseases.



A seven months old local clone after grafting

ASKA Farmer Field Training Activities

During the quarter three trainings were provided focused on: 1) Bean sorting and storing management, 2) Defining cocoa bean quality, and 3) Field visits and cocoa clinics. In July 2010, AMARTA delivered training on ‘Bean Sorting and Storing Management’ aimed at improving farmers’s skills and knowledge of handling beans. The detail of participants in the training is shown in table 2 below:



Participants exercise sorting beans based on National Standards

Table 2: Participants attending ASKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Sorting and Storing Cocoa Bean (5 th – 30 th July, 2010)	100 FGs in South Sulawesi	2,152	1,868	289
	100 FGs in West Sulawesi	2,313	2,007	306
	100 FGs in Southeast Sulawesi	2,468	2,133	335
Total (300 FGs)		6,933	6,003	930

In August 2010, AMARTA delivered training on ‘Defining Cocoa Bean Quality’. The training aims to increase farmers knowledge on standarizing and defining the quality of beans and measuring the percentage of waste, water content, mould, and number of beans per 100 grams. After joining the training, the participants realized that the price of cocoa is highly corelated to cocoa quality. Table 3 below shows participants enrolled in the training:

Table 3: Participants attending ASKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Defining the Cocoa Bean Quality (9 th - 31 st August, 2010)	100 FGs in South Sulawesi	2,166	1,905	261
	100 FGs in West Sulawesi	2,272	1,944	328
	100 FGs in Southeast Sulawesi	2,389	2,084	305
Total (300 FGs)		6,827	5,933	894

In September 2010, AMARTA conducted training on “Cocoa Clinics and Visiting Cocoa Garden Models” for cocoa farmers in Sulawesi, details of participants are shown in table 4 below. The training aims to show farmers the process of cocoa bean selling at buying units that utilize quality systems so that farmers know how to improve quality. The second aim is to improve farmer’s skills on PsPSP, by learning good agriculture practices.

Table 4: Participants attending ASKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Cocoa clinic and field visit to cocoa garden model (6 th - 30 th September, 2010)	100 FGs in South Sulawesi	2,279	1,836	443
	100 FGs in West Sulawesi	2,194	1,915	279
	100 FGs in Southeast Sulawesi	2,457	2,141	316
Total (300 FGs)		6,930	5,892	1,038

Solar Dryer Development

In an effort to help farmers dry cocoa to improve quality and sanitation, 300 solar dryers have been provided by AMARTA to participating farmer groups. The new technology has received positive acclaim from farmers and government officials who have replicated the successful pilot initiative using their own resources and funding. Sixteen solar dryers have been built by the Estate Crops Department of North Luwu District, Sulawesi. AMARTA introduced a simple solution for farmers to achieve better results. The overall quality is greatly improved and the loss from animals and vehicles running over beans has been dramatically reduced.

"With solar dryers my job is easier, and I have increased revenues from cocoa sales due to improved quality, moisture levels, waste reduction, and better color of beans that were more uniform when I sold them to a trader for Rp 21,000 per kg, while other farmers only received Rp 19,000 per kg."

Mr. Sahabuddin, a 42 year old farmer from Polman



Before: Drying cocoa beans is usually done by farmers on the roadside creating a high percentage of waste from dust, sand, and gravel. The risk of fungal contamination must be controlled or the quality becomes below standard.



After: Drying cocoa beans with a solar dryer makes work easier, relatively safe from dirt, dust, rain and animals, and produces higher quality, in accordance with export standards.

North Luwu Local Government Expanding Solar Dryer Distribution

The solar dryers introduced by AMARTA have been extremely well received by farmers and government officials due to the low cost and exceptional benefits. During the rainy season, this simple structure helps farmers by significantly decreasing drying time and increasing cocoa bean quality compared with beans dried traditionally on the ground that are susceptible to fungal infection and also require more labor.

Learning from AMARTA, the Estate Crops and Forestry Agency of North Luwu devised an initiative to expand the solar dryer technology as part of its effort to achieve the future vision and mission of becoming the best cocoa-producing regency in Indonesia. This new technology is an excellent option to overcome quality problems often seen during the post-harvest handling of cocoa beans by farmers. Since the beginning of 2010, the Estate Crops Agency has built 24 units in eight districts. During the remainder of 2010, the Estate Crops Agency will increase the procurement of solar dryers to provide more examples for farmers to test. It is expected that the farmer's long standing habit of drying cocoa beans on the ground can be changed using solar dryers. *"This is one of the many successes provided by USAID/AMARTA. By educating farmers in North-Luwu, AMARTA is helping them to increase the quality of their product and create higher quality beans that the market will pay a premium for,"* said Ir. Imran, the Sub-section Director of Estate Crops and Forestry in North Luwu.



A newly constructed solar dryer in North Luwu

Farmer Instructor Training by BBPP in South Sulawesi

On August 15th, AMARTA met with the Center for Agriculture Extension (BBPP) of Batangkaluku, South Sulawesi and developed a module for harvest and post-harvest handling technology training. The initiative aimed to seek inputs from related stakeholders and improve the curriculum for a comprehensive training program. Based on the discussions and feedback AMARTA generated a revised training curriculum and proceeded to deliver the updated topics on September 1st at the BBPP office in South Sulawesi.



AMARTA presents the module on harvesting and post-harvest technology

As a result of this initiative, AMARTA has created a total of five modules and trained 35 field extension agents in Sulawesi,

including two women. The resource material will provide guidance for district extension service agents to deliver training to cocoa farmers in Sulawesi.

AMARTA Partnership with PT Olam Continues

In an effort to increase PT Olam's buying station's capacity to disseminate information and serve as a market center for cocoa farmers, AMARTA recently provided banners that provide information noting location where they can receive information and sell their cocoa beans at a premium price. Through this activity farmers know where to access the selling centers located near their cocoa gardens. Farmers can also access information from buying units through SMS or by making a phone call. The farmer's experience with PT Olam buying units is typified by the one group from North Luwu District:

The Mandiri Farmer's Group, from Saptamarga Village, Sukamaju Sub-district, North Luwu, has been working with AMARTA on cocoa productivity training since 2009. In this village virtually everyone relies on cocoa for their livelihoods. In total, 28 people are members of the group with a total of 38 hectares, and the participants are very active and dynamic- witnessed by their application of all recommended activities like pruning, fertilization, post-harvest handling, and pest and disease control. Despite the farmer's attentiveness and discipline in producing cocoa when they sold their beans they were unable to get a good price since most members sold to brokers or middlemen.



Increasing Income through collective marketing

In order to improve the situation, AMARTA conducted training directly at export partner PT Olam's buying units where group members began to understand the importance of proper harvesting and post-harvest handling techniques that resulted in higher prices being paid when selling directly to exporters. The Mandiri Farmer's Group members agreed to pool their resources and sell to PT Olam. They realized that if the volume of cocoa being sold is not significant enough to cover the cost of transportation, then they would lose money so the group agreed to conduct collective marketing. Group members pooled their cocoa together and shared the cost of transportation. As a result of their ingenuity and efforts members received a premium of Rp 200 per kg when cocoa was in accordance with quality standards required, such as: Bean count at 110/100 grams, waste at less than 2.5%, mold under 4%, and moisture content below 7%.

“With collective marketing and direct sales to buying units, we all feel very satisfied with PT Olam because we are getting a better price in accordance with the quality of cocoa being sold. When compared to previous sales to middlemen where we received Rp10,000 - Rp12,000 per kg we now earn Rp15,000 - Rp18,000 per kg. AMARTA’s training and technical assistance is very beneficial for me and other farmers and motivates us to continue to improve our cocoa quality. All members of our group feel very satisfied with sales to PT Olam’s buying unit because we get higher prices based on the quality of cocoa being sold. Sales to buying units now provide farmers income of Rp 15,000 - 18,000 per kg, about 15% higher when compared to using middlemen.”

Mr. Dary, Chairman of Mandiri Farmer’s Group

Table 5. Access to Market (Buying Unit/PT. Olam) for September 2010

Location	Buying Unit	Number of Farmer Groups	Number of Farmers	Quantity (kg)	Quality Status	Monthly Price Average (IDR)
South Sulawesi	Masamba	70	285	7,200	Bean count 125/100 grams, moisture 7% waste 3.5%, mold 0%	18,500
	Mangkutana	30	145	2,900	Bean count 115/100 grams, waste 3%, moisture 7%, mold 0%	18,000
Southeast Sulawesi	Lapai	90	2250	2,612	Bean count 124/100 grams, moisture 9% waste 3.8%, mold 4%	19,055
	Lasusua	10	250	323	Bean count 110/100 grams, moisture 7.1% waste 2.5%, mold 4%	18,692

Source : Purchasing Data - Penjualan September 2010

The table above notes that the main problem of quality faced by farmers is the number of beans above the standard (110 beans per 100 grams is the maximum weight of cocoa beans). However, the Lasusua Buying Unit receives cocoa beans at 110/100 grams. The size of cocoa beans is affected by the weather and low productive plants.

Sustalndonesia Kakao Alliance (SKA) – Bali

USAID Visit to Bali SKA Program

From August 25th – 28th, Mr. Sanath K. Reddy from USAID Jakarta visited AMARTA Bali cocoa locations to meet with farmers during training sessions, participate in Regional Agribusiness Competitiveness Alliance (RACA) meetings, and to provide feedback regarding interventions in Jembrana and Tabanan. Overall, Mr. Reddy noted that farmers seemed extremely appreciative of AMARTA’s training and believed they would be able to implement many of the recommended practices. Cocoa intensification and rehabilitation practices are being practiced consistently. Due to limited resources

farmers universally requested pruning tools, plastic for solar dryers, superior clones to plant in their gardens- along with technical assistance to successfully graft, transportation support to visit demonstration plots, and technical assistance to combat pests and diseases. Mr. Reddy noted that identifying and distributing high quality cloning material and training farmers on proper grafting techniques is critical. Efforts should be made to ensure that ICCRI is closely involved in the process.



Mr. Reddy with cocoa farmers in Bali



Demonstrating quality standards in the field

Progress of Model Cocoa Garden Demonstration Plots

There was solid progress in Tabanan and Jembrana's demonstration plot gardens. In Mrs. Megawti's demonstration plot garden in Tabanan- one of AMARTA's cocoa field trainers- the 0.5ha garden grafted at a staggering 97% success rate with only 0.01% contamination of pests and diseases. At the Tegak Gede demonstration plot garden in Jembrana, the success rate reached 90% with only 0.05% contamination.

As a result of these successful models, farmers have become familiar with applying good agricultural practices. Previously, farmers did not know how to manage their cocoa garden appropriately, while the best motivation for them is to see first-hand successful initiatives implemented by their neighbors. These examples have proven to motivate and excite other farmers, frequently improving their participation in activities. AMARTA invited representatives from farmer groups to view successful demonstration plots and learning gardens. The Merta Buana Sari I Farmer's Group in Jembrana significantly upgraded their cocoa fields that were not well maintained, and in only a short time- less than one month- the group began applying what they saw during their visit. By applying frequent pruning, sanitation, and harvesting (PsPSP) routinely farmers saw dramatic results in their garden's appearance and a reduction in pests and diseases. As Wayan Astawa, a 42 year old farmer



Demonstration plot garden at Tegak Gede

from Jembrana noted: "It is very helpful for this group to be able to visit AMARTA's study gardens. We are very optimistic after seeing that consistent attention produces higher quality cocoa beans and that has motivated us to improve our gardens."



Garden condition in Jembrana before training from AMARTA with tall trees and poor management



Garden conditions after implementing good agriculture practices and additional activity like grafting and drainage

Clone Trials with ICCRI

In order to promote the best clones possible in Bali, the SKA program conducted clone grafting from ICCRI in two demonstration plot gardens in Jembrana and Tabanan. The success rate for cloning was 70% in Jembrana and 80% in Tabanan respectively. The collaboration aims to provide better planting materials for farmers and serves as the basis for wider distribution to farmers in both Sulawesi and Bali. The clone trial is also intended to produce good planting materials with high productivity that are also resistant to pests and diseases. Through this assistance, SKA Bali expects farmers to expand their gardens with higher productive trees.

SKA Farmer Field Training Activities

During the first and second week of July, SKA provided training on bean sorting and storing management to introduce storing management and identify the highest quality cocoa. During the training, participants practiced fermentation and each farmer group contributed 50 kg of fermented beans to produce a total of four tons of fermented beans as a simulation number implemented by farmer groups that aims to see and compare the benefit from existing companies.



Activity at Mertana Farmer Group, Jembrana

Table 1: Participants attending SKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Fermentation (15 th – 30 th July, 2010)	30 FGs in Tabanan	744	664	80
	30 FGs in Jembrana	734	713	21
Total (60 FGs)		1,478	1,377	101

During August 2010, SKA Bali conducted training on “Defining Cocoa Bean Quality” that aimed to instill skills and knowledge to farmers on defining cocoa bean quality based on national standards. This is in response to farmer’s request to be prepared when selling to buyers- farmers have never have a good bargaining position on the price since they do not know the quality of their beans.

**Participants learn how to assess cocoa quality****Table 2: Participants attending SKA training**

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Defining the cocoa bean quality (16 th – 30 th August, 2010)	30 FGs in Tabanan	743	664	79
	30 FGs in Jembrana	739	715	24
Total (60 FGs)		1,482	1,379	103

In September 2010, AMARTA conducted training on “Cocoa Clinics and Visiting Cocoa Model Gardens” with detailed participant numbers shown in table 3 below. The training aims are to demonstrate cocoa bean selling at buying units that apply quality standards, and to improve farmer’s skill on PsPSP by seeing good agriculture practices. This training is also intended to ensure that farmers comprehend and can replicate strategies in their own gardens.

Table 3: Participants attending SKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Cocoa clinic and field to cocoa garden model (13 th – 30 th September, 2010)	30 FGs in Tabanan	724	653	71
	30 FGs in Jembrana	735	714	21
Total (60 FGs)		1,459	1,367	92

Collaboration with the Bali Estate Crops Office

During the quarter, training was delivered three times to 80 FGs focusing on: 1) Pest and plant disease management, 2) Pruning, sanitation and fertilization, and 3) Harvesting and post-harvest handling management, fermentation techniques, and defining quality.

In July 2010, cocoa farmers in Tabanan and Jembrana districts encountered a major issue on harvesting resulting from high rain volume which caused significant damage. In order to respond to this situation, AMARTA suggested to farmers to frequently prune and harvest regularly. In addition, SKA provided training to farmers on pest and disease management.



Participants practice pruning to control pests and diseases

Table 4: Participants attending SKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Pest and Plant Disease management (12 th – 23 rd July, 2010)	40 FGs in Tabanan	991	941	50
	40 FGs in Jembrana	890	860	30
Total (80 FGs)		1,881	1,801	80

During the quarter, SKA also delivered training on “Pruning, Sanitation, and Fertilization” intended to introduce proper management practices for cocoa farmers. The training was held in August and AMARTA expects that after joining this training, farmers will improve the quality and quantity of their cocoa. Total participation is noted in table 5 below.

Table 5: Participants attending SKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
A good agriculture practices Tabanan (12 th – 23 rd August, 2010)	40 FGs in Tabanan	994	928	66
	40 FGs in Jembrana	870	831	39
Total (80 FGs)		1,864	1,759	105

In September 2010, AMARTA also delivered training on “Harvesting Technology and Post-Harvest Handling, Fermentation Techniques, and Defining Quality”. Through these training topics farmers are expected to develop better knowledge and skills on activities related to post-harvesting handling, fermentation, and defining cocoa quality at buying units. Table 6 below depicts participants at the training.

Table 6: Participants attending SKA training

Time and topic	# of FGs and Location	Attendance		
		Total	Male	Female
Harvesting technologies and post harvest handling , fermentation technique and defining quality (13th – 24th September, 2010)	30 FGs in Tabanan	989	913	76
	30 FGs in Jembrana	869	832	37
Total (60 FGs)		1,858	1,745	113

Solar Dryer Development

During the quarter, AMARTA provided 80 solar dryers for Jembrana and Tabanan farmers- 40 units for each location. Constructing solar dryers was lead by the Estate Crops Department of each district. Mrs. Ni Luh Wayan Aryuni, a 40 year old member of Kerta Laksana Banjar Dangin Farmer’s Group in Jembrana, revealed that prior to using a solar dryers, she dried her cocoa on the floor of her home or by the roadside where risk of loss is enormous due to rain, animals, or damage from cars and motorcycles. With solar dryers the process of drying cocoa beans is simplified and far quicker than what was previously accomplished.



Solar dryer built by Buana Kerta in Jembrana

“Because solar dryers are very practical, I do not have to collect my beans from the ground if the rain comes suddenly; nor do I need to watch them all the time to keep animals away. I would like to express my gratitude to USAID/AMARTA who worked with the Bali Estate Crops Office and guided us in building these innovative structures. AMARTA has helped me and members of my farmer group gain new knowledge in managing cocoa.”

Mrs. Aryuni 40 year old cocoa farmer from Kerta Laksana Banjar Farmer Group

Access to Markets

In an effort to bring farmers closer to exporters, AMARTA through ALKANA has facilitated cooperation between exporters and farmers who are fermenting their beans. On July 12th, ALKANA facilitated sales to buyers including PT Bumi Tangerang, totaling 1.1 tons at a price of Rp 25,000, and PT Indocafco, totaling 700kg at a price of 24,700. These premium prices were substantial



A farmer weighs cocoa beans before sending to export buying stations

compared to what farmers who are not working with AMARTA received for their fermented beans. Local traders pay a maximum of 80% of the export price, not the terminal price and on average frequently only pay between 50% to 60% of the export price, while AMARTA farmers can receive 90% of the export price selling to official buying units of AMARTA's partners.

Coffee

Improving the Coffee Value Chain in North Sumatera

AMARTA Coffee Training in Pak Pak Bharat Improves Livelihoods

Coffee is one of the most important crops and sources of livelihoods for farmers in Pak Pak Bharat, though few farmers have proper knowledge of good agriculture practices for



Mr. Luther Manik in front of his coffee garden

seed selection, pruning, and fertilizing. The lack of information has caused low productivity, and diseases and pests have adversely affected crops due to a lack of understanding and poor quality of planting seeds. Mr. Luther Manik, a farmer with a 0.8 ha coffee farm was one of the participants in AMARTA's training activity held in Kuta Jungak in July. He was dismayed and hopeless because many of his trees were negatively impacted by pests and diseases, approximately 80% of his trees were afflicted causing the leaves to dry, which produces rotten cherries.

He planned to replace his land with other crops due to the poor production. In the past, Mr. Manik used 75 kg of fertilizer of which 50 kg was urea that cost Rp 2,000 per kg and 25kg Sp that cost Rp 2,500 per kg. His total cost for fertilizing his garden was Rp 162,500, while his maximum harvest was only 10 liters of beans.

After joining AMARTA's training he changed fertilizing application to follow AMARTA's coffee manual recommendations. He now uses just 35 kg for his 0.8 ha, of which 25 kg is organic and costs Rp 2,500 per kg and 10 kg is urea that costs Rp 2,000 per kg. His new total cost is only Rp 82,500, or a 50% reduction from his previous total. More importantly, he is seeing tremendous quality improvement in his production. Many of the trees have recovered and are healthy and producing higher quality cherries. His ten liter harvest of parchment coffee from his 400 productive trees- out of 800- has increased 600% as he recently harvested 70 liters.

Mr. Manik appreciates the benefits from AMARTA's training and is now able to practice proper, and less costly, seed selection, pruning, and fertilizing. He plans to expand his garden and plant additional coffee trees.

"USAID/AMARTA has changed my life and given me back my pride as a farmer. I am now happy to work on my productive land and look forward to planting new trees."

Mr. Manik. Coffee farmer from Pak Pak Bharat

Coffee Farmers in Simalungun Use New Technology to Combat Pests

Jamahot Malau, a coffee trader in Sinaman Labah Village, Simalungun District, North Sumatera has felt the impact of quality degradation of coffee over the last few years. Four years ago he produced almost 55% green beans after being hulled, though today he can barely reach 45%. The major cause of the decreased production is coffee cherry borers (CCB) infesting farms in Sinaman Labah on a massive scale.

The first time Mr. Malau participated in AMARTA's training in his village he was skeptical of AMARTA's motivation and goals as he thought it was a sales pitch to sell agricultural inputs. However, after being invited to participate in a coffee forum in July and participating in selling beuvaria bassiana and hypotan products to combat CCB he was convinced of the strength of the program. AMARTA introduced coffee farmers to two new technologies to combat CBB, and help farmers obtain good quality coffee parchment free of the pests.



Mr. Malau paying close attention on how to combat Coffee Cherry Borer

Mr. Malau once dreamed of fixing quality issues, but he did not know how. He has also faced additional pressure from his buyer to deliver quality beans. Now, with technical assistance from AMARTA, he is able to help farmers improve their yields and quality and provide his buyer with more coffee

Coffee Productivity Training

AMARTA continued providing coffee productivity training to farmers. During the quarter, North Sumatera coffee added 1,071 hectares under improved technology, assisted 145 FGs- including two women's farmer groups, and trained 1,383 farmers, including 923 (67%) men and 460 (33%) women in Simalungun and Pak Pak Bharat. The most evident change as a result of the training is applying fertilizer in a significantly more cost effective manner. Farmers now understand that fertilizing should be completed in conjunction with noting the age of the tree instead of the "more is better" philosophy previously espoused.

Opening Ceremony of the Pak Pak Bharat Coffee Nursery

On September 8th, Mr. Remigo Yolanda Berutu, the Bupati of Pak Pak Bharat District officially inaugurated AMARTA's coffee nursery by planting the first seeds in Dusun Pangkalan. Mr. Berutu, the Vice Bupati- Mr. Maju Elias Padang, and a number of other officials in the local government and local parliament joined the ceremony. Mr. Berutu commended the community initiative and thanked AMARTA for the continued support in guiding the farmers toward higher productivity and improved quality coffee.

The nursery was established in Dusun Pangkalan, Siempat Rube Village whose villagers contributed labor for land clearing and nursery house construction, selection of coffee seeds, as well as provided bamboo materials and seeds. They will also contribute regular labor during seed propagation and moving seeds to polibags when ready. The total capacity of the facility is 60,000 polibag seeds, and in conjunction with another



Bupati of Pak Pak Bharat District officially inaugurates AMARTA's coffee nursery

nursery currently being built in Pardomuan Village, it is envisaged that AMARTA can cover coffee seedling materials throughout the Regency. AMARTA has also established a quality control system to ensure good practices are upheld in order for the nursery to produce and distribute only the highest quality seedling material.

During the inauguration ceremony, AMARTA highlighted facts and issues hindering the progress of Pak Pak Bharat coffee development such as the pandemic level of coffee cherry borers that directly led to total production loss of approximately Rp 5 billion based on

conservative calculations. AMARTA requested that the local government create policies to support the coffee farmers, especially a more concerted effort toward the handling and controlling of coffee cherry borers. To strengthen the case for increased support, AMARTA plans to present findings and research to the local parliament and government to show how pressing and grave this issue has become.

Helping to establish this nursery will solve coffee seed problems, which in the long run will gradually improve coffee production and quality, ultimately making the high value commodity more competitive.

Nursery Shading Helps Produce Higher Quality Coffee

AMARTA has also established a nursery for coffee shading trees, one of the most highly recommended practices to protect coffee trees from too much sun. The cooler temperature that the shade trees provide also decreases pests and diseases and increases the lifetime of coffee trees since they are not forced to produce cherries as frequently without direct sunlight.



Coffee nursery house in Simalungun

AMARTA distributed coffee shade tree seeds for farmers who had received productivity training. In Simalungun, AMARTA is creating a nursery for lamtoro variety shading trees.



Coffee Nursery house in Simalungun

One of the key findings in Simalungun was the lack of shading trees in the farm amid wide planting distances caused cherries to ripen too quickly due to intensity of sunlight, resulting in higher levels of acidity since coffee trees normally only received a maximum of 70% sunlight. The shading trees also decrease maintenance costs based on lower disease intensity, while simultaneously reducing suckers and unproductive branches.

Geographic Indication Workshop in Toraja

Collaborating with the Forestry and Estate Crops Office of Toraja Utara, the Specialty Coffee Association of Indonesia (SCAI) held the second Geographic Indication (GI) workshop for Toraja Coffee on July 1st. The first workshop was conducted in April 2009 to map out the production area of Arabica coffee. The July workshop intended to socialize the benefits of GI and endorse the formation of the “Toraja GI Protection Community”, consisting of all stakeholders; this action is the first step to apply for certification. The major deliverable from this event was finalizing and submitting the “Book of Requirements” to the Directorate General of Intellectual Property Rights as part of the certification process. The Book consists of the necessary criteria for a coffee GI, including best practices such as elevation, land information, varieties and other agronomical definitions, defining quality including sensory tests, processing, traceability, and a list of stakeholders in the area.

A total of 140 participants, including farmers, government officials, and coffee companies attended the event. The workshop was opened by the Secretary of Toraja Utara, Dr. Ek. Lewaran Rantela’bi who emphasized the importance of protecting the Toraja name to create greater benefits for the area.



As a result of this event two farmers’ cooperatives representing 1,600 farmers joined SCAI. These farmers produce 24 tons of coffee per year in an area covering 800 ha. By applying GI, it is expected that the production average will increase from 350 kg per ha to a level of 500-750 kg per ha. The establishment of area boundaries will minimize the entrance of non-Toraja coffee to the area and should encourage greater

Workshop in Toraja

production. The impact of premium prices being paid by buyers will come to fruition once the quality becomes consistent from one batch of production to another.

GI Socialization for Gayo Coffee Farmers

Coffee from the Gayo Highlands in Aceh succeeded in achieving formal GI certification in January 2010. The next step is to socialize the “Book of Requirements” with all stakeholders. Drs. Mustafa Ali, the Director of the Aceh Coffee Forum, and a member of SCAI, is leading the Gayo GI Protection Community and requested SCAI assistance in socializing the upcoming tasks with farmer groups.

The target for 2010 is to reach 300 farmer groups or approximately 3,000 farmers that represent 5% of the total 66,000 farmers in the Gayo Highlands. Those farmers cultivate over 33,000 ha. Initially, the socialization will cover 100 farmer’s groups. For SCAI, promoting the GI of Gayo Coffee has established its reputation as the primary resource for GI certification.



GI event for Gayo farmers in Aceh

High Value Horticulture

Garut Farmers Produce Quality Potato Seed

Potatoes are staple crops for farmers in Sukatani Village, Garut, and a key crop for Dirgantara Farmer’s Group. Unfortunately, farmers continually face difficulties in acquiring high quality potato seed. Most of the seed available in the market is from unknown origins and undetermined health quality (some contain seed borne diseases). In addition the price is very expensive at about Rp 30,000 per kg. In an effort to remedy the situation, AMARTA, in cooperation with the Indonesian Vegetable Research Institute (IVEGRI) and Syngenta Foundation, introduced good quality, virus free seeds and new varieties that were produced from tissue cultures called Granola and Margahayu.

On May 15th, 2010, 1,000 knolls (mounds) of Granola and 1,000 knolls of Margahayu seeds were planted on 200 m² of land. The seeds were produced from ‘G0’ (Generation 0) that originated from tissue culture production in IVEGRI. The ‘G0 seeds can be propagated to produce ‘both G2’ and ‘G4’. The ‘G0’ planted in a green house is considered to be the



Dirgantara FG produced high quality potato seed

standard- as it meets seed production requirements- and produces good results, then the 'G0' seeds can be propagated to 'G1'. If the 'G0' seeds are planted directly in the field and produce healthy plants, then seeds from those plants can be propagated as 'G2'. The seed production process is presently being implemented by Dirgantara Farmer Group.

The objective of the effort is to assist farmers of Sukatani Village and the surrounding areas to produce good quality potato seeds that will, in turn, create improved crops. On September 2nd seeds were harvested producing 4,014 Granola and 5,185 Margahayu varieties. The seed will be planted during the next quarter to produce 'G3' and 'G4'. AMARTA expects that the successful nursery will fulfill the needs of Dirgantara Farmer Group, as well as providing them a new business in producing and selling potato seed.

“With USAID/AMARTA’s assistance, farmers can now produce their own healthy potato seed. They no longer have to purchase unknown, expensive, and poor quality seed from outside dealers. Good seeds produce higher quality crops and provide better prices for potatoes. Thank you AMARTA and IVEGRI, for teaching us how to improve our lives.”

Mrs. Popi, the Head of Dirgantara Farmer’s Group

Replication of Broccoli Seed Technology Increases Productivity

Tauhid is a union of several farmer groups who have partnered together in Lembang, Parongpong, and Cisarua. One partner is Gapoktan Lembang Agri in Cikidang, Lembang who works with AMARTA on introducing broccoli seedling technology using trays with baked rice husks and sterilized composts. Since many farmers have stated they feel that the transplanted seeds distributed by AMARTA using trays have grown much more productively, Tauhid decided to replicate the seedling growth process. As a result, they created a 100 m² nursery house to produce seedlings.

Tauhid has total land area of seven ha at Parongpong, cultivated by 30 farmers, who plant a few commodities such as beans, lettuce, and broccoli. Tauhid provides seeds, fertilizer, and other materials to farmers, including 6,000- 10,000 broccoli seedlings per week.



Tauhid Broccoli screen house in Lembang

To fulfill the requirements of farmers, Tauhid buys transplants on the market at a price of Rp135 per transplant. In August, Tauhid started distributing transplants to farmers from their own nursery produced at a higher quality and less expensive than what was offered in the market. Total cost of production for the group was only Rp100 - Rp120 per transplant.

Mr. Husein, the 29 year old manager of Tauhid said, *“Preparing seedlings using trays is much better for us, maintenance*

becomes easier and the resulting seedlings are better quality and less expensive.” Currently, AMARTA has introduced new broccoli varieties planted in Tauhid’s nursery house. In just 21 days, the new variety showed higher germination rates than Primaseed varieties: 90% compared to Primaseed’s 60%. By producing the transplants in their nursery, Tauhid anticipates assisting farmers in decreasing costs while increasing quality and improving overall productivity. During the quarter the Tauhid Farmer Group sold Rp 84,439,700 (\$9,382) worth of broccoli to farmers.

Berastagi Carrots Introduced in West Java

The quality of local carrots planted by farmers in Garut was no longer able to compete with imported carrots. AMARTA introduced new Berastagi carrots from North Sumatera to farmers in Girijaya Village, Cikajang, Garut. The reason for selecting the Brastagi variety was the similarity of characteristics with imported carrots in size, color, and taste.

On August 12th, one of AMARTA’s carrot demonstration plots was harvested, and the 400 m² of land produced 839 kg. In total, 20% of the carrots met export or super market standards, 60% were sold to local markets, and the remaining 20% of the carrots were below acceptable quality. AMARTA partner, Bimandiri bought the highest grade carrots at a price of Rp 3,500 per kg, almost 100% higher than the price of local carrots that sells for Rp 1,800 per kg. If 50% of the crop reaches export standards, farmers will receive increased revenue of 60%-70% compared to local carrot prices. To achieve this goal, AMARTA, in October, will return to demonstration plots with new farmers to replicate the successful activity.



New Berastagi carrot seeds introduced by AMARTA in West Java

Bappenas and USAID visit AMARTA’s Lembang Sites

AMARTA assistance in West Java continues to provide positive results. In an effort to showcase some of the highlights, on August 9th and 10th, USAID and a contingent from Bappenas visited demonstration plot sites and AMARTA’s partners in West Java. Bappenas representatives included Ms. Citra and Ms. Intan, who joined USAID’s Contracting Officer Technical Representative (COTR), Anna Julaistuti, visiting broccoli demonstration plots in Parongpong and Cikidang, Lembang, observing a farm management training session for the Kawani Asih Farmer Group in Cikidang, and visiting a green bean demonstration plot in Cibodas, Lembang. The Baby French Farmer Group in Lembang sold Rp 105,000,000 (\$11,667) worth of product to buyers this quarter.

On the second day, Mr. Nono from Bappenas also joined the delegation to see the green bean demonstration plot in Cibodas. AMARTA introduced technology for land processing using a hand tractor as a solution to minimize the difficult labor required to

till the land. The team then visited LPPM Padjajaran University to meet the Value Chain Center (VCC) team to discuss issues impacting farmers. Finally, a meeting was held with PT. Alamanda Sejati Utama in Banjaran, a partner of AMARTA, where discussions occurred with the staff of PT. Alamanda and visitors saw the packing process for vegetables to be exported to several countries in Asia.

According to the Bappenas staff, the pattern of support witnessed from the farm level to



Bappenas and USAID at a demonstration plot in Lembang, West Java

the exporter’s level is useful in addressing many problems; AMARTA not only enhances farmer productivity and quality production, but also helps to connect them directly with buyers. The collaboration with LPPM Padjajaran University through the VCC provides a forum for numerous stakeholders to share ideas, and ideally will allow AMARTA’s interventions to become sustainable. Mr. Nono from Bappenas stated, “Collaboration with LPPM Padjajaran University is one effort that can sustain AMARTA’s intervention”.

Collaboration with IVEGRI and Syngenta Foundation

Cooperation between AMARTA and IVEGRI started in 2008. Many achievements have been accomplished during this time, and in 2010 Syngenta Foundation joined in efforts to provide additional support to help farmers in West Java.

On July 23rd, all three organizations conducted potato seed production and virus detection training and good agricultural practices (GAP) for seed production techniques. This activity was followed on September 4th when field training on post-harvest handling for potato seed production was provided. To support the potato seed production demonstration plot, IVEGRI provided a technical expert, while AMARTA and Syngenta Foundation supported the construction of a screen house to train farmers in higher quality seed production.

Additional activities that will soon be implemented include farmer field days to introduce vegetable varieties and market oriented agricultural technology innovations. AMARTA expects that farmers will replicate GAP learned at the field days in their own farms. The event is scheduled for October 12th and 13th with more than 200 farmers, buyers, suppliers, and related government



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In collaboration with AMARTA, IVEGRI and Syngenta trained Garut farmers on seedling production

offices expected to attend. IVEGRI will display demonstration plots for several commodities, including: potatoes, green beans, tomatoes, carrots, broccoli, chili, and leafy greens. As a result of this initiative, farmers, suppliers, and government officials can cooperate to determine mutually beneficial strategies to increase productivity and quality of fresh produce benefiting farmers with increased income and market awareness.

Bandung Horticulture Value Chain Development Strategy: A One Village One Product Approach

Hosted by The Bandung Development Planning Board (BAPPEDA), on August 4th, AMARTA in collaboration with LPPM-UNPAD conducted focus group discussions (FGD) on the 'Bandung Horticulture Value Chain Development Strategy'. The discussion centered on strawberry development, a commodity that Bandung local governments feel is a priority. Twenty participants including: UNPAD, farmers, traders, the Directorate General of Horticulture from Jakarta, Bandung Agriculture Office, Bandung Cooperative Industry and Trade Office, and BAPPEDA attended.



Focus Group discussion in Bandung, West Java

Based on assessment results presented by UNPAD, strawberry production has been declining sharply, especially during the last two years. Necessary interventions raised in the meeting included establishing mother plant plots to produce good quality and certified seeds, better access to technology, agro-inputs, financing, good post-harvest handling, and better program coordination among offices within local governments to avoid overlapping and improving effectiveness of the program.

As a result of this effort, the Bandung Strawberry Development Consortium will be created, inviting all strawberry development stakeholders to devise integrated activities, to improve both horizontal and vertical coordination among players, and improve coordination among offices within local governments. Secondly, activities will be linked to a national agriculture development program called the One Village One Product (OVOP). This is a national inter-ministerial program adopting a successful Japanese model. BAPPEDA, the Agriculture Office and Cooperative, and the Industry and Trade Office will be responsible for the implementation of the program.

Sweet Pepper Focus Group Discussion in West Bandung

The second FGD was conducted to support the West Java Horticulture Development Strategy. Twenty eight people participated, coming from the Directorate General of Horticulture in Jakarta, the West Bandung Agriculture Office, The Netherlands Agriculture Consulate, East-West Seed Company, exporters PT Alamanda and PT Momena, cooperatives, local traders, and farmers. Since sweet pepper was the

commodity of discussion, Pasir Langu Village was selected as the location of the event since it is the major production area where sweet pepper is grown in West Bandung. Out of a total 36 hectares of sweet pepper planting area in the region, around 27 hectares are located in Pasir Langu. Sweet pepper farming is more expensive compared to other horticulture commodities and as a result production is declining.

Currently the average production per tree is 2.5 kg. The older green houses utilized are about four years old with dirty plastic roofs, leading to insufficient sun shine required for flowering and fruiting. In addition, the high mortality rate of around 30% leads to high costs of production. Unchanged cropping patterns have also contributed to high pest attacks, and farmer's use of excessive pesticide is resulting in high pesticide residue.

In an effort to remedy the current situation, the Dinas Office will contact the Bandung Branch of the National Land Board for a mass land certification program to enable farmers to use their land for bank collateral in order to access credit. In addition, the Directorate General of Horticulture noted there are funds allocated for sweet pepper and expected the funding to increase in the coming year, and he will invite other agencies within and outside the Ministry to participate in the program. Finally, participants agreed to establish a Sweet Pepper Forum to improve understanding, communication, and establish an integrated sweet pepper development program.



Focus Group Discussion on sweet pepper

Farm Management Training Phase Two

The ultimate goal of Farm Management Training is to change farmers' behavior from subsistence to become more commercial oriented. Very few farmers have maintained farm activity records, so in an effort to assist them in regular book keeping activities the key message delivered during AMARTA's training activity is the importance of documentation and note taking. As a result of this training farmers will be able to maintain basic records of expenses and revenues and create farm budgets, including the cost of production, expected revenues, and estimated profit.

Beginning in August, the second phase of farm management training took place, with new material on cash flow, business management, and accessing financial services. The training was conducted for 107 people including 61 men and 46 women. To support the training,



Farm management training for women in West Jaya

AMARTA has created a handbook that includes a number of important topics and examples that allow farmers to begin to manage their farms like professional businesses.

AMARTA established the training program in response to an overwhelmingly positive response from farmers to the initial book keeping courses provided. AMARTA's training events have been oversubscribed as many farmers realize that they must improve their financial and management savvy and document financial transactions to prove they are indeed profitable in their farms, as well as providing necessary documentation for banks in an effort to access financial services such as loans.

Daily Book Keeping Provides New Information for Farmers

Mr. Dedi Kusdiana is a 33 year old vegetable farmer and cattle breeder in Desa Girijaya, Garut. Previously he provided labor for Hade Tani Farmer's Group, but three years ago he started producing on his own land where he works with his brother cultivating potatoes, cabbage and carrots. Although Mr. Kusdiana is a small business owner he has never taken the time to calculate or record his financial information. He never counted wages for laborers or wrote down the total sales price of each crop- rather he tried to remember the figures in his head. Basic revenues and expenditures were simply estimated and when he went to a bank to request a loan he found it difficult to apply because he had no documentation about his farming business.

During four months of technical assistance from AMARTA, Mr. Kusdiana worked diligently, routinely recording each expenditure and receipt of his agribusiness. One example of finished recording he made was on his potato crop. Through his documentation, he now knows the cost of potatoes are Rp. 2,815 per kg so that he can choose the market and ensure a price above his cost of production. The same calculations were completed for cabbage, and after analyzing his daily book keeping, he realized he had made a net profit of approximately Rp 10 million on his farm.

As a result of this activity, Mr. Kusdiana has gained a new understanding of both his business and personal finances and has set up a basic budget to control his costs. He intends to expand his farm in the near future and is now confident he will be able to access a small loan from a bank who he met during AMARTA's training session. He also realized that he had some additional funds available to help his family.



Mr. Kusdiana records daily expenditure and revenue into his accounting book

"I will continue recording the expenses and revenues and I hope to continue to develop my farm business. I never knew before if I was making a profit or losing money- now I can calculate costs and look for ways to increase my profit."

Mr. Kusdiana, farmer from West java

High Value Horticulture in North Sumatera

Improving Banana Production and Quality

Training and technical assistance in demonstration plots are the focus of AMARTA's training program for improving banana production and quality. The training starts at the village level and is followed by further guidance in AMARTA's double row system demonstration plots. The materials covered in basic training include an introduction to double row cultivation, basic barangan banana principles, pest and disease control, and post-harvest handling. After participating in the initial activities, farmer groups continue in their own study gardens, where they implement the technology package. During the quarter, AMARTA completed intensive training for 2,464 banana farmers in Deli Serdang, Karo Highland, and Simalungun, North Sumatera, including 1,394 (57%) men and 1,070 (43%) women with 53 farmer groups- three of which are women's farmer groups, covering 2,159 hectares of land under improved technology.



Farmers join AMARTA banana training in Bintang Meriah demonstration plot in Deli Serdang

Banana Training Results

In an effort to quantify measurable achievements, AMARTA conducted surveys with farmers who were trained by selecting and sampling farmers from each village and farmer group. Comparing harvest production, income before and after implemented banana technology, and selling price per hand the following successes were recorded:

- Harvest production increased 77%, from 1,293 bunches to 2,287 bunches per ha
- Average monthly income from banana fields increased 95% from Rp 2,035,984 to Rp 3,960,227
- Average selling price increased 36% from Rp 4,432 to Rp 6,023 per hand

By surveying farmers who adopted the training package during the quarter, total production of barangan bananas was 987,663 hands with a total value of Rp 5.9 billion or \$650,000 sold at an average price of Rp 6,000 per hand.

Marketing of Deli Serdang Bananas Using the Packing House

By utilizing the packing house in Tiga Juhar, Deli Serdang, the Deli Serdang Agribusiness Cooperative delivered 8,400 hands to Medan prison, 9,600 hands to the local Medan market, and 3,200 hands to hypermarkets in Jakarta. The total value of bananas delivered was Rp 274 million or \$30,444, which also helped provide employment for 13 laborers. PT Sewu Segar Nusantara delivered 120,000 banana hands to hypermarkets in Jakarta with a total value Rp 600 million or \$66,667.

Citrus Cultivation Training Using SOPs in North Sumatera

During the quarter, North Sumatera citrus cultivation training using GAP was carried out in three districts: Karo Highlands, Simalungun, and Pak Pak Bharat. The goal of the program is to enhance the knowledge of farmers on agriculture practices in order to improve local knowledge, improve production, and acquire proper standards of good agriculture practices. During the quarter 111 farmer groups, totaling 941 farmers, consisting of 717 (76%) men and 224 (24%) women participated in citrus cultivation training covering 712 hectares.



Citrus training in Karo Regency

The material provided is based on GAP soil management and pest and disease control. In order to enhance farmers' skills with advanced knowledge, AMARTA conducted field schools at demonstration plots. Through direct exposure in the study gardens using proper practices, citrus farmers can directly access and easily absorb materials, as well as become adept at replicating successful practices in their own citrus fields.

Collaborating With Syngenta Foundation

AMARTA recently formalized a partnership with the Syngenta Foundation in an effort to help farmers in West Java and North Sumatera. The first activity in North Sumatera consisted of training on pest and disease control. This event was conducted over two days from July 27th through 28th, and included intensive training and identification of common pests and diseases, specifically the most appropriate control methods to prevent attacks.

AMARTA and Syngenta plan to continue similar activities directly in the field at project sites located in Karo and Simalungun, North Sumatera.



Participants after joining pest and disease training

Citrus SOP Training Results

In an effort to quantify measurable achievements, AMARTA conducted surveys with farmers who were trained by selecting and sampling 10 trained farmers from each village and farmer group. Comparing harvest production, production costs, and income before and after implemented citrus SOP procedures the following successes were recorded:

- Harvest production is about 6,587 kg per 0.5 ha of land
- Monthly production costs reduced from Rp 1-1.5 million to Rp 0.5-1 million, or about 50-100%.
- Average monthly income increased from Rp. 0.5-1.5 million to Rp2-2.5 million, or about 66 -300%.

Citrus Rejuvenation Provides New Opportunities

Before Ardi Tarigan, a 29 year old citrus farmer, participated in AMARTA training he was jobless and a self described reckless young man. Every day he would spend time with his friends and did not accomplish much toward creating a better life for himself and his family. Although his parents owned a one half hectare citrus field it was damaged and not productive. AMARTA continuously conducts training directly in villages to assist citrus farmers in the Karo Highlands. Ardi joined several training sessions in his village, Ujung Bandar, Barus Jahe Sub-district, and the staff and facilitator also motivated him to have the courage to rejuvenate his parent's citrus field so that he could be proud of himself and help his family by earning more money.

After following the recommended practices in his citrus field, Ardi began to see the results of imparting good agricultural practices (GAP), observed immediately by spending less money through minimizing the usage of pesticides and fertilizer.

Eventually, after two years of dedicated effort, he began harvesting citrus from the previously barren land. From zero production he transformed his trees to become a profitable source of income. With only around Rp 3 million of investment capital, he gained Rp 10 million in revenue, which he expects to increase as he expands his plot.



Ardi Tarigan's effort in rejuvenating his parent's citrus field provides a bright future

"The entire USAID/AMARTA team not only helped me in improving my technical knowledge of GAP in citrus, but also showered me with motivation so that I believed that I could do it! A million thanks to AMARTA who changed my life from no one to become someone. I have earned the respect of my family and can now provide food and clothing for them."

Ardi Tarigan, Citrus Farmer from Karo Highlands

Crysant Women's Farmer Group Harvests Their Flowers

Raya Village, Berastagi is the center of floriculture production for local markets in Medan. In the past few years the quality of flowers produced was declining so many local buyers began looking elsewhere for quality products. AMARTA re-established flower activities in early March 2010 in Raya Village and the results have been extraordinary.



One of the major efforts in improving traditional cultivation was building a green house located in a strategically important area where AMARTA provides technical assistance in good agricultural practices in floriculture cultivation. AMARTA fully supports empowering women and helped create the Crysant Women's Farmer Group and provided them with access to the green house.

Crysant women harvest their flowers

In August, the women from Crysant harvested their first flowers from the demonstration plot. The price of chrysanthemums ranged from Rp 500 - Rp 3,000 per peduncle and was sold in a nearby local market immediately. The women estimate that this season they can earn around Rp10 million in profit, and they can harvest three times a year. The Farmer Group will divide the proceeds among the members based on each woman's contribution. Mrs. Ulin Ras, a member of Crysant stated, *"Thank you USAID/AMARTA for teaching us improved techniques for growing flowers. We hope AMARTA can continue helping us in improving floriculture and accessing markets so in the future we can do all of the work ourselves and expand the business to show other women what is possible."*

Improving Floriculture Production and Marketing



Completed greenhouse in Raya Village



New green house construction

During the quarter, AMARTA completed building four greenhouses, bringing the total to six fully operational greenhouses in Raya, Berastagi constructed by AMARTA and female farmers. The approximate cost share in labor, bamboo, and other support

provides an approximate 50% contribution from the women, while AMARTA provides plastic UV and planting materials. The greenhouses have proven to dramatically increase the productivity and quality of flowers, as well as allowing year round harvesting. The latest flowers to blossom include several chrysanthemum varieties and leafy ornamentals that are brand new for the women farmers since they are sourced from West Java. The varieties are excellent quality and unique in North Sumatera, thereby increasing current market demand.

The snap dragon variety was recently harvested totaling 4,200 cut flowers that were sold at a price of Rp 3,000 per stem, totaling Rp 12,600,000 in revenue, and there will be 10,000 new flowers ready to harvest next quarter that will provide Rp 30 million in revenue. The chrysanthemums that are scheduled for harvest in October will provide an additional Rp 50 million in revenue and should be ready for sale around the Christmas season- December 2010- when the women will receive a premium price. By directly practicing new technology in the field the overall knowledge of the farmers has increased and they are effectively controlling the pests and diseases.

By constructing bamboo greenhouses and introducing improved management practices, the female farmers can improve productivity by 80%, and increase income from approximately Rp 2 million per month to Rp 5 million per month (150%). The additional income allows for greater purchasing power of food, clothing, school fees, and other necessities.

Improving the Raya Village Floriculture Market

AMARTA has completed improvements to the local flower market, including painting lines of rows for each farmer's space for selling their flowers, as well as preparing a water bucket for flowers to improve marketing. The new and improved site is cleaner, better maintained, and much more attractive for prospective buyers to visit. The total value of flowers from Raya Village is approximately Rp 60 million per week or around Rp 240 million per month (\$27,000).



AMARTA supported farmers selling their flowers in the new market space

During the quarter, AMARTA worked in Karo, North Sumatera on developing five demonstration plots in horticulture, including tomatoes, carrots, broccoli, sweet corn, and leafy vegetables. The objectives are to introduce the new vegetables, drip irrigation technology, plastic tray seedlings, and improve farmer's practices in greenhouse and pest management. Many Berastagi and Karo farmers had problems growing tomatoes in the open field, facing pests and diseases, however by growing in greenhouses the farmers are able to grow year round and decrease the challenges faced outside. Due to the fact that rain in Karo has been extremely high, as is the case throughout Indonesia, many diseases have attacked vegetables, yet the tomatoes grown in the greenhouses were growing much better and can reduce input costs by 30%. Mr. Markasta Sinulingga said, *"It is amazing that by growing tomatoes in the greenhouse I could increase production by 100% and increase the growing season from only two months to five months in the greenhouse."*



Tomatoes growing well in the greenhouse