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“Helping Indonesia to Grow”

## **AMARTA**

### **Quarterly Report of Project Activities and Achievements**

**Quarter Four, 2008**

**July 1 – September 30, 2008**

## **Project Management**

### **Monitoring and Evaluation**

The following progress was made this quarter against the nine indicators that have been approved by USAID:

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

AMARTA added **6,472 hectares** under improved technologies through implementation of value chain interventions including the following: Rubber (143 hectares), Cocoa (4,251 hectares), Coffee (1,300 hectares), Vegetables (55 hectares), Tropical Fruit and Flowers (723 hectares).

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

AMARTA added **4,474 units** under improved technologies through implementation of value chain interventions, including the following: Aquaculture (2,340 fingerlings), Seaweed (2,134 lines).

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

AMARTA assisted **452 associations** and farmer groups through implementation of value chain interventions, including the following: Cocoa (390 organizations), Coffee (11 organizations), Vegetables (31 organizations), Tropical Fruit and Flowers (1 organization), and Regional Agribusiness and Competitiveness Alliances (RACAs) (19 organizations).

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

AMARTA implemented activities in partnership with **44 agriculture firms**, including:

- PT. Hortijaya
- CV. Sejahtera
- CV. Sentra Tani
- CV. Sentana
- CV. Sumber Rejeki
- Armajaro
- UD. Tunas Jaya
- PT. Askotama Inti Nusantara
- Billaton Plaza
- Toko Pare Jaya
- PT. Bumi Tangerang
- PT. Indo Cafco
- PT. Asal Jaya
- PT. Amarta Sari Lestari
- JC Aren
- Toko 99
- Toko Citra
- Toko Pendawa

- Mega Square
- Timika Indo Mesin
- Yayasan Jaya Mandiri
- Yogya Supermarket
- Carrefour Supermarket
- Makro Supermarket
- PT. Rutan
- Pandu Tani Supplier
- Grace Supplier
- PT. Dharma Precision World
- Starbucks
- Royal Coffee
- Rogers Brothers
- PT. Benua Lima Sejurus
- PT. Sampit
- PT. Hok Tong
- Insan Bonafide
- PT. Karya Sejati
- PT. Darma Kalimantan Jaya
- PT. Karias Tabing Kencana
- PT. Bumi Asri Pasaman
- PT. Sumber Aneka Karya Abadi
- CV. Karya Graha Agung
- Atlantic Coffee
- Coffee Imports
- Bridgestone

#### **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 2008, **12,321 farmers (9,600 men (78%) and 2,721 women (22%))** participated in agribusiness trainings, including the following: Aquaculture (157 participants), Rubber (207 participants), Cocoa (10,101 participants), Coffee (560 participants), Vegetables (168 participants) Tropical Fruit and Flowers (996 participants), Seaweed (46 participants) and Regional Agribusiness and Competitiveness Alliances (86 participants).

The training has proven to be successful in improving overall yields and post-harvest handling practices, thereby increasing sales for farmers as illustrated in many sections of this report.

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

The following exporters reported significant increased values of commodities exported compared to last year's quarterly figures:

**Coffee Aceh, PT. Gajah Mountain Coffee** export value increased 100% or \$369,539

**Coffee Flores, CV. Lion Lestari** export value increased 100% or \$61,650

**Cocoa Bali, PT. Big Tree Farms** export value increased 100% or \$101,799

**Cocoa South & Southeast Sulawesi, PT. Olam Indonesia** export increased 48% or \$11,436,669

**Cocoa West Sulawesi, UD Tunas Jaya** export increased 100% or \$6,909,088

**Cocoa South Sulawesi, Palopo and Luwu District, PT. JBP Armajaro** export increased 87% or \$2,023,147

**Seaweed:** export value increased 100% or \$ 4,171

Exports for the quarter totaled **\$20,906,063**, a significant increase for participating institutions who have been able to purchase greater quantities of higher quality products for the international market during the peak growing season.

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

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

**Coffee Aceh, PT. Gajah Mountain Coffee** value of purchases increased 100% or \$365,596

**Coffee Flores, CV. Lion Lestari** value of purchases increased 100% or \$56,216

**Coffee Wamena, Papua** value of purchases increased 100% or \$17,992

**Cocoa Bali, PT. Big Tree Farms** value of purchases increased 100% or \$101,042

**Cocoa South & Southeast Sulawesi, PT. Olam Indonesia** value of purchases increased 52% or \$10,731,639. Cocoa prices increased to Rp. 24,162 per kilogram in August 2008 from an average price of Rp. 16,673 in 2007.

**Cocoa West Sulawesi, UD Tunas Jaya** value of purchases increased 100% or \$6,478,393, while providing smallholders with an average price of Rp. 24,033 per kilogram.

**Cocoa South Sulawesi, Palopo and Luwu District, PT. JBP Armajaro;** value of purchases increased 49% or \$1,452,192. Cocoa prices increased to Rp. 23,267 per kilogram in August 2008 from an average price of Rp. 14,683 in 2007.

**Seaweed in Gorontalo;** value of purchases increased 100% or \$8,343

**Aquaculture, Fishery in Kokonao, Papua;** value of purchases increased 100% or \$4,615

Smallholder purchases for the quarter totaled **\$19,216,028** an impressive measurement of prices paid to participants in AMARTA's activities providing additional income for farmers and their families. The return on investment from USAID/AMARTA resources is substantial as the total resources devoted to activities noted above during the quarter was approximately \$1,000,000, **earning \$19.22 in direct income benefits for smallholder farmers for every \$1.00 invested by USAID/AMARTA.**

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

AMARTA projects have introduced **33 new technologies** or management practices available for transfer to farmers this quarter, such as:

**Fruit, Banana:** Proper field tool set; preventing the spread of disease; mother, daughter and grand daughter production sequence; tagging fruit with color, deflowering; branch clearing; removal of sick branches and leaves; leaf surgery to prevent sigatoka; removing the mother plant after harvest; bending of follower to protect fruit; planting

material from meristem culture; foliar fertilization; correction of iron deficiency protection for pesticide application; bud injection to control fusarium affected plants.\*

**Fruit, Strawberry:** “Red Ripe” strawberry handling.

**Vegetables:** Soil management; fertilizing system\*; disease control; and post-harvest management; kyuuri cultivation techniques.

**Cocoa:** Garden evaluation and decision making; appropriate pruning for old trees; land preparation before replanting and rehabilitation; preparing natural pesticides; farmer group capacity building initiatives.

**Bio-fuels:** Jatropha seedling nursery; jatropha oil press.

**Coffee:** Quality control of green coffee according to standards of international specialty coffee market; hand sorting; cupping and taste training.

**Rubber:** Bridgestone tapping technique; RRIMFLOW technique.

**Aquaculture:** Nursery intermediate grow out; live feed supply; new filtration system.

\*AMARTA assists some farmers with fertilizing techniques to ensure that environmental concerns are addressed to the maximum extent possible. Some farmers insist on using traditional chemicals, and in these cases AMARTA strongly recommends and provides training on organic fertilizers as a substitution, and never under any circumstances purchases pesticides or chemicals.

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

AMARTA has introduced **5 surveillances and/or control systems** this quarter that serve to detect and/or protect crops from harm such as:

**Aquaculture:** Waste treatment system, new filtration system, good quality artificial feed, and frequent fresh bathing to reduce antibiotics usage.

**Seaweed:** Biofilters.

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

AMARTA activities helped create **1 public private partnership** to enhance agribusiness interventions, including:

- GAPKINDO (Indonesian Rubber Entrepreneur Union) South and Central Kalimantan unit

#### **AMARTA Grants Program**

In the previous quarter AMARTA provided grant funds to support activities in Agimuga Village in Papua, in developing a livestock and food crop value chain working with the Bishop of Timika. AMARTA also provided continuing support to the Indonesia coffee value chain through establishing a specialty coffee association. Total grant funding approved for those projects was \$144,144.

Grants projects approved last quarter include the following:

- Improving Rice Production in Agimuga, Papua, partnership with the Catholic Church-Bishop Timika – awarded April, 2008, \$61,911
- Improving Swine Production in Agimuga, Papua, partnership with the Catholic Church-Bishop Timika - awarded April, 2008, \$59,333
- Coffee Association Capacity Building, partnership with the Specialty Coffee Association of Indonesia (SCAI) - awarded April, 2008, \$22,900

During this quarter, AMARTA provided additional grant funds to support ongoing projects in Papua and Aceh, totaling \$43,037, including:

- Rehabilitation and Development of Sustainable High Value Prawn Production in Aceh-Phase II, \$14,120
- Supporting the Fishery Value Chain in Kokonao, Papua-Phase II, \$28,917

AMARTA is developing the following grants proposals for review and USAID concurrence:

- Developing Market Linkages for Farmers in West Java Through CV Bimandiri's Supply Chain – estimated grant \$15,000
- Developing a coffee quality certification program in Indonesia, partnering with the Specialty Coffee Association of Indonesia – estimated grant \$25,000

### **AMARTA Quarterly Implementation**

During the quarter, a number of activities were postponed or cancelled due to limited financial resources. AMARTA worked closely with USAID in order to ensure that all essential activities continued without interruption, and ultimately funding arrived in early September, however the delay in resources had a significant impact on project implementation during the quarter. AMARTA is, once again, working with USAID to ensure budgetary issues are discussed and addressed for the remainder of the program.

### **Partnerships and Policy Advocacy**

#### **Partnership with the Directorate General of Estate Crops**

The Director General (DG) of Estate Crops invited AMARTA to review implementation of the MOU between the two institutions on July 14<sup>th</sup>. It was suggested that similar coordination meetings should be conducted biannually. AMARTA was also invited to the preparatory discussion at the DG of Estate Crops office in Jakarta on July 18<sup>th</sup>, as well as the official launching of the “National Movement for Accelerating Cocoa

Production Growth and Quality Improvement” by Vice President Jusuf Kalla at the Office of the Governor of West Sulawesi in Mamuju on August 10<sup>th</sup>. AMARTA provided Vice President Kalla with cocoa program success stories, information, and training materials.

#### **Partnership with the Directorate General of Horticulture**

On September 3<sup>rd</sup>, Dr. Dimiyati reinforced the DG of Horticulture’s keen interest in collaborating with AMARTA. He was particularly interested in emphasizing the importance of activating the newly established National Horticulture Board. The DG of Horticulture will provide office space for the secretariat of the organization and asked AMARTA with assistance in providing an executive secretary.

#### **Partnership with the Directorate General of Processing and Marketing of Agricultural Products**

AMARTA agreed to co-organize two trainings for the sub terminal agribusiness (STA) operators and supervisors of ‘Farm Gate Markets’. Training activities were scheduled for August 4<sup>th</sup>-6<sup>th</sup> and 7<sup>th</sup>-9<sup>th</sup>; however they were unfortunately postponed due to AMARTA’s financial considerations.

#### **Partnership with the Deli Serdang Regency Office of Agricultural Services**

AMARTA and the – Deli Serdang Regency Office of Agricultural Services- signed a working agreement in Bogor on July 4<sup>th</sup>, agreeing to collaborate in agricultural extension and technology dissemination.

#### **Partnership with Gabungan Asosiasi Perusahaan Karet Indonesia (GAPKINDO) Union of Rubber Association in Indonesia, South and Central Kalimantan Chapter**

A working agreement between AMARTA and GAPKINDO South and Central Kalimantan was drafted and is ready to be signed. This document formalizes the ongoing partnership in developing rubber planting material nurseries for smallholders.

#### **Network with the Government of North Sumatera Province**

On July 21<sup>st</sup>, AMARTA conducted a meeting with Mr. Yopie S. Batubara, a senator from North Sumatera, and Mr. Syamsul Arifin, SE, Governor of North Sumatera. Mr. Batubara is interested in seeing more AMARTA involvement in organic farming, cold storage assistance to the Merek STA for citrus marketing, rubber training in Nias Island, and seaweed farming along the Sumatera coast. He thanked AMARTA for past successes and current activities, offered assistance in helping implement future activities, and arranged a meeting to see the new Governor of North Sumatera.

Several matters related to horticulture in the Karo Highlands were discussed with the Governor, including: Bananas, rubber, cocoa in Deli Serdang District, and the importance of government collaboration to assist in replicating AMARTA’s pilot project demonstrations over a wider geographic. Mr. Arifin thanked AMARTA and requested a letter that was submitted on July 31<sup>st</sup>, noting any challenges or problems where the Governor could be of assistance.

### **Network with the Ministry of Industry**

AMARTA participated in the workshop on geographical indication organized by the Ministry of Industry in Jakarta, on August 4<sup>th</sup>. It was agreed that registration of geographical indication for Gayo Coffee is a top priority for Kintamani Bali Coffee- in line with the ongoing AMARTA-Specialty Coffee Association of Indonesia (SCAI) activity. AMARTA participated in a preparatory meeting with the Indonesian delegation in the ASEAN Consultancy Committee on 'Standards and Quality of Prepared Foodstuff Products' organized by the Ministry of Industry in Jakarta on August 8<sup>th</sup>. The discussion included AMARTA's focus on coffee, cocoa, and horticulture products.

### **Network with USAID-Indonesia**

AMARTA participated in the Economic Growth Stakeholder workshop in Purwakarta, on July 18<sup>th</sup> in conjunction with USAID's preparation of the 2009-2014 Strategic Plan. AMARTA also welcomed John Mellor to the office on August 6<sup>th</sup> for an Agricultural Sector Review.

### **Network with Other institutions**

- Facilitated a field visit to Bali for BAPPENAS to observe AMARTA cocoa activities from September 17<sup>th</sup>-19<sup>th</sup>. Eka Chandra Buana and Ms. Rika of BAPPENAS joined Jacky Hendrawan from USAID in a series of field visits and discussions with government estate crops agents and personnel from Jambrana and Tabanan Districts. Field visits were also conducted with farmers from a number of different farmer's groups to explore training activities and progress, as well as a site visit to AMARTA grantee, Big Tree Farm's, central cocoa processing unit to learn more about the role of the private sector in the Bali cocoa program.
- Received Mr. Bambang Soekartiko, of the Indonesia Bee Keepers Association at AMARTA on July 7<sup>th</sup> to discuss possible areas of cooperation. As a follow up, Mr. Sukartiko submitted a proposal to AMARTA on utilization of bee pollination for increasing fruit and vegetable productivity on July 28<sup>th</sup>.
- Attended the National Conference 'Indonesian Innovation Breakthrough: Creating Innovation through Research and Development-Business-Government Synergy', organized by the Ministry of Research and Technology, on August 6<sup>th</sup>.

### **Regional Agribusiness Competitiveness Alliance (RACA)**

#### **National Horticulture Board**

The committee was elected on December 13<sup>th</sup>, 2007 and determined the permanent organizational structure along with officials of the Board who were inaugurated before the Minister of Agriculture while celebrating the International Potato Day in Jakarta on July 23<sup>rd</sup>, 2008. The key positions are:

1. Chairman: Mr. Ishartanto
2. Executive Chairman: Mr. Benny A. Kusbini

3. Secretary General: Mrs. Karen Sjarief Tambayong
4. Treasurer: Mrs. Helen Soegandhi

### **Deli Serdang Barangan Banana Community**

The permanent organization structure and officials were determined on August 11<sup>th</sup>, including three committees with 19 members chaired by Mr. Joseph Barus: 1) Technology transfer and infrastructure, 2) Input supply and financial access, and 3) Post-harvest handling, processing and marketing. AMARTA facilitated training on proposal writing and policy advocacy from September 8<sup>th</sup>-10<sup>th</sup>.

## **Aquaculture**

### **Grouper Nursery and Grow Out Development in Loh Mbongi**

During the quarter, a number of monitoring visits and discussions with grantee PT Karamba occurred to solve the ongoing issue of fingerling survival rates. In an effort to improve the system and increase production of grouper, PT Karamba faced some challenges with space availability in the nursery tanks. The fingerlings that did not survive have been replaced, while an additional 1,000 fingerlings that have already reached 5cm have been graded and counted. Steps have been taken to remedy the outstanding issues and activities are now back on track to reach the target of six hatchery tanks producing 20,000 fingerlings monthly. Substantial construction was completed expanding the hatchery facilities and installing the generator.



**Hatchery expansion and generator pad construction**

### **Village Based Net Cage Pilot Program in Warloka Village**

After successfully stocking the net cages in Warloka Village, PT Karamba provided additional training and technical assistance on fish cultivation. The mortality of fingerlings was less than 10%, which was caused by the stress during handling and transportation for the inauguration ceremony that occurred last quarter. About 2,300 fingerlings are growing well, and two additional cages were prepared for an 800 new fingerlings that were delivered in July. During the next 12 months, villagers will harvest approximately 500 fish weighing a total of 250kg with a total market value of more than \$10,000, benefiting over 400 people.

After analyzing the feasibility of introducing seaweed to Warloka Village, AMARTA and PT Karamba transferred *Caulerpa lentillifera* “grape seaweed” planting material on July 12<sup>th</sup> from Bali. Thus far, the seaweed has grown well in the village and can add a significant contribution toward incomes as it currently sells for Rp. 20,000 per kg wet.



Grape seaweed tied to lines in Warloka



A fisherman in Warloka overseeing the grouper net cages

### **Rehabilitating Shrimp in Aceh**

Black tiger shrimp was one of the most important livelihoods for decades in Aceh. Most Acehnese people live as traditional shrimp farmers in Bireun and the east coast. The business has unfortunately been declining since 1997 due to virus disease outbreaks and the competition with non-indigenous white shrimp species. AMARTA continues to work with PT Aceh Windu Lestari to install a modern laboratory equipped with the latest technology and microbiology equipment. During the quarter, AMARTA delivered the remaining equipment and materials, which will be installed in October. The grantee will have a formal opening ceremony and begin testing for fishermen in the region. A full scale marketing plan will be completed next quarter, along with market linkages for the shrimp, which has extremely high demand both domestically and abroad.

### **Potential Public Private Partnership with PT Karamba Linking Turtle Preservation Activities with the AMARTA Aquaculture Program**

On July 23<sup>rd</sup>, AMARTA COP David Anderson joined USAID CTO, Rafael Jabba, and the USAID Chief of Basic Human Services/Natural Resources Manager, Alfred Nakatsuma to explore the possibility of establishing a new project to protect the endangered turtle population near the Flores island chain. One of the most promising islands for saving the turtle population, Hataming also known as “Turtle” island, is owned by AMARTA grantee, PT Karamba who has been actively involved in turtle protection for many years. Another island that shows excellent potential is Sabolo, where the delegation saw

evidence of tracks, nests, and fresh turtle skin. AMARTA will coordinate with USAID next quarter to determine a strategy for future efforts as appropriate.



Hataming or “Turtle” island



Freshly broken egg found near three nests



Turtle tracks on Sabolo island

## Livestock

### **Secretary of Directorate General for Livestock Services (DGLS) and the Director of Livestock Breeding Visit Beef Cattle Program in Kupang**

On September 11<sup>th</sup>, the Secretary of DGLS, Prof. Syamsul Bahri, and the Director of Livestock Breeding, Dr. Gunawan, along with other government officials, visited the beef cattle breeding program in Kupang, West Timor. AMARTA works closely with farmers who are members of Puskud Nusa Tenggara Timur (NTT) with the *Koperasi Ternak Sapi Potong*, (KOPNAK) in supporting livestock extension agents to visit farmer’s groups twice a week to help them with problems and provide guidance to improve cattle health. In the fattening program- sponsored by the National Cooperative Business Association (NCBA) one farmer receives two to six feeder cattle raised until they reach 250 kg and are then sold in auction. The participating farmer will share 70% of the purchase price. Due to the lack of feeder cattle, AMARTA became involved in this project to provide heifers or young cows for breeding.

Puskud identified which farmers were eligible to be involved in the program- each receiving one young healthy heifer or pregnant cow from AMARTA and two feeder cattle from NCBA. These breeding cattle are kept in the colony barn and when calves are



**Cattle farmers showing senior government officials the cattle pens**

born they are raised until reaching 1.5 years old with the farmer receiving 80% of the purchase price at sale. If a female calf is born the farmer is obligated to buy that calf for breeding stock. When male calves are born Puskud buys them and provides it to the same farmer for the fattening program. Puskud also immediately replaces sick or infertile animals in an effort to achieve a 90% calving rate. A novel and respected approach that the DGs of Livestock appreciated.

The strength of this operation is that all activities are planned together between Puskud, AMARTA, and the farmers. After seeing the results of this program, Puskud will soon provide another 60 breeding cattle for three additional farmer's groups. And by the end of 2008, there will be 23 farmer's groups participating in Kupang District.

After receiving a briefing and visiting the site, the Head of Dinas Peternakan NTT, and Prof. Syamsul Bahri promised to invite the DG of Livestock Services to also visit Kupang, and agreed to make a video recording supporting the project that will be distributed to farmers throughout Indonesia.

### **Bio-fuels**

AMARTA's pilot program in bio-fuels assists villages in substituting jatropha oil for fossil fuels. During the quarter, AMARTA and its grantee, Lion Lestari, continued to assist farmer's groups in the villages of Legu and Uluwae to set up jatropha seedling nurseries. These nurseries produced 75,000 seedlings, which were supplemented by an additional 25,000 plants previously grown from cuttings.

The plants are now more than 500 cm tall, and are on schedule to produce their first harvest in early 2009. Farmers in both locations are tending and weeding the plants. During the next quarter, farmers will be advised to "ratoon" their plants, or cut off the upper branches. This practice causes the trees to develop lateral branches, increasing the opportunity for seeds to develop and reducing the eventual height of the trees for easier harvesting.



**Producing jatropha oil that will be used to fuel the generator**

AMARTA has procured small dynamos and other electrical equipment to test the concept of generating electricity using diesel engines fuelled by Jatropha oil. Appropriate equipment is being shipped to Flores and will be installed in October.

Farmers are currently collecting wild jatropha seed to produce the oil. In Uluwae, the cooperative has built a small shed for the generator and welding machine.

## **Cocoa**

### **AMARTA Sulawesi Kakao Alliance (ASKA) Training program**

The AMARTA Sulawesi Kakao Alliance (ASKA) training program is now running two different intensive trainings for cocoa smallholders- basic and follow-up training- in South Sulawesi, West Sulawesi, and Southeast. The Basic Training program includes nine core topics incorporating skills and knowledge underpinning good on-farm agricultural practices, appropriate post-harvest handling to improve quality, and improving access to the export cocoa market. ASKA technical assistance continued in the follow-up support training for farmers who have completed basic training, as a means of enabling the consolidation and strengthening of core knowledge and skills taught, exposure and development to new skills, and allowing AMARTA to track productivity and quality progress.

### **Overview of Basic Training Activities (June-August 2008)**

The second cycle of Basic Training for 350 farmer's groups (FGs) and approximately 8,750 cocoa smallholders in three provinces was completed in June 2008. Another 350 FGs for Cycle 3 of Basic Training were selected in late June, located nearby previous ASKA targeted FG sites. As Cycle 3 of the Basic Training began, baseline surveys were taken of each farmer- conducted at the first and second socialization meeting. During this preliminary training meeting initial aspects of good agricultural practice were taught, along with best practices and defining quality knowledge, access to export markets, and macro economic conditions.

In South Sulawesi, a total of 80 FGs or approximately 2,000 farmers are included in the ASKA program of which 70 FGs are located in North Luwu and 10 FGs in Pinrang District. Initial socialization of ASKA training in both districts was attended by 2,271 participants, which included a range of stakeholders: Farmers, local NGOs, local government officials, as well as ASKA private partners (PT. Olam Indonesia and PT. JBP-Armajaro). During the implementation of Basic Training, two different topics were transferred to each of the FGs over the span of a month: 1) Pruning was taught to 1,894 farmers in North Luwu and 2) 247 farmers from Pinrang District were trained in identification and mitigation of pests and disease. In the following two weeks 1,856 farmers from North Luwu received training on improved fertilizer practices and pod sleeving, while 221 farmers from Pinrang District learned about effective pruning practices.

In West Sulawesi, 120 FGs or approximately 3,000 farmers are involved in the ASKA program, with 60 FGs from Polewali Mandar, Polman District and another 60 farmers from Mamuju District. Unlike other ASKA program locations the on-the-ground challenges in Mamuju are quite different where a combination of issues: i) poor genetic planning material, ii) Vascular Streak Dieback, (VSD) iii) *Phytophthora sp.*, iv) and the old

age of trees has seen a dramatic decline in on-farm productivity. This situation has resulted in the development of new training materials to support farmer capacity to conduct replanting and rehabilitation of their gardens based on the concept of a formal garden evaluation, including AMARTA produced materials for assessing quality. Given the severe nature of declining productivity as a result of diseases, specifically VSD and *Phytophthora sp.*, the AMARTA technical team determined that it was best to replant affected cocoa gardens with more tolerant improved planting materials where productivity had declined to below 200 kilograms per hectare per year.

In Mamuju the basic training program started in the third week of August. In the first training cycle socialization and pests and diseases training was delivered to 1,720 participants, while the initial socialization was attended by 1,691 participants from Polman District. The first topic of basic training in Polman District was pests and diseases attended by 1,552 farmers. During the third week 1,532 and 1,613 farmers of Polman and Mamuju respectively, learned pruning techniques.

In Southeast Sulawesi, 30 FGs totaling 752 farmers from Ladongi Sub-district of Kolaka started Basic Training Cycle 2, defining cocoa bean quality. Also, the next cycle of basic training began with 150 FGs or approximately 3,750 participants from 80 FGs in Kolaka District and 70 FGs from North Kolaka District. After preliminary identification of FGs by ASKA farmer trainers in June, socialization of the ASKA program to 4,188 participants in both districts was completed the following month- 12% above the training targets. Following successful identification and socialization training was delivered in the first two weeks of August to 3,883 farmers on pruning and defining cocoa bean quality. In the following two weeks, 1,753 farmers of North Kolaka participated in fertilization while 2,042 farmers from Kolaka learned frequent harvest and sanitation techniques.

**Table I.** Number of participants of ASKA Basic training in Cycle 3

Month	Week	Topic	Attendance		
			Male	Female	Total
June 2008	1 and 2	Defining cocoa bean quality	684	68 (9%)	752
July 2008	1 to 4	Identification and socialization	7,049	1,101 (16%)	8,150
August 2008	1 and 2	Socialization/Pests and Diseases	1,612	108 (6%)	1,720
		Pruning	3,141	488 (13%)	3,629
		Defining cocoa bean quality	1,824	224 (11%)	2,048
		Pest and Diseases	1,410	389 (22%)	1,799
		<b>Total participants</b>	<b>7,987</b>	<b>1,209 (13%)</b>	<b>9,196</b>
	3 and 4	Fertilizing and pod slaving	1,635	221 (12%)	1,856
		Frequent harvest and sanitation	1,790	252 (12%)	2,042
		Fertilizing	1,439	296 (17%)	1,735
		Pruning	2,813	544 (16%)	3,366
		<b>Total participants</b>	<b>7,677</b>	<b>544 (15%)</b>	<b>8,999</b>

## Breaking Free From Money Lenders

Nasruddin, is a 35 year old farmer from Karya Jaya farmer's group in Tojabi Village, Lasusua District, North Kolaka Regency, Southeast Sulawesi. His one hectare cocoa farm that he inherited from his parents is his family's main source of income. Since his early farming days, he knew only one local trader where he could sell his dry beans and borrow money when there was an immediate need for his family. Nasruddin would then pay back his debt during harvest time, with a selling price that the trader had set for him. Since participating in ASKA's basic training facilitated by AMARTA-USAID, Nasruddin has had an intense desire to be free from this system known as *ijon*. Unfortunately, this long term business relationship has turned into a familiar relationship that is difficult to end.

Nasruddin has actively been gathering information about the most up-to-date cocoa prices from PT Olam's buying station staff who have encouraged him to sell his cocoa directly to them in Lasusua District, North Kolaka. His first attempt selling directly to PT Olam did not give him much satisfaction, due to the substantial discount he received for his below export standard beans, and he was unconvinced of the benefits of selling to an exporter. When he shared his disappointment with Mr. Yasin the ASKA farmer trainer, Mr. Yasin convinced him to try again, since selling directly to exporters is still much more profitable than to local traders. Yasin suggested that Nasruddin divide his cocoa beans, selling half to a local trader while selling the other half to PT Olam, and then comparing the price.

Nasruddin followed Yasin's suggestion and in May 2008, he sold 10 kg of cocoa beans to PT Olam's buying station in Lasusua District for Rp 23,000 per kg (\$2.50) with another 10 kg to a local trader for Rp 18,000 per kg (\$1.96) reflecting a of price difference of 28%. Taking advantage of his newly improved quality beans, Nasruddin continued to sell his cocoa to PT Olam, and he managed to pay back all of his debts to the local trader after only one month. Since June 2008, he has been officially free from the "*ijon*" system, and continues to sell his cocoa beans to any exporter or trader who is willing to give him the best price for his export quality beans.



Nasruddin sorting his cocoa by quality

## Follow-Up Training

After the first cycle of basic training finished in December 2007, ASKA continued to provide follow-up training for 116 farmer groups or approximately 2,900 farmers located in three districts of South Sulawesi, two districts of Southeast Sulawesi, and one district of West Sulawesi. During implementation of the training, each FG learned five main topics:

1. Frequent harvesting, pruning, sanitation, and fertilizing
2. Appropriate post-harvest handling, improving quality, and tree rehabilitation
3. Pests and diseases
4. Garden evaluation and cocoa tree revitalization
5. Preparing organic fertilizer and natural pesticides

In South Sulawesi, 56 FGs or approximately 1,400 farmers participated, 26 FGs from North Luwu District, 20 FGs from Luwu, and 10 FGs from Pinrang District. In July, 726 farmers learned appropriate post-harvest handling, improving cocoa bean quality, and cocoa tree rehabilitation techniques. In the following months, 467 farmers from Luwu District were provided with additional training support to assist in their capacity to address issues of pests and diseases, while 604 farmers in North Luwu were taught frequent harvesting, pruning, sanitation, and fertilizing. All of the follow up training activities are implemented in both study gardens and participant cocoa gardens. During the training, follow up trainers also had the opportunity to evaluate current conditions at farmer's cocoa gardens enabling them to identify the major problems facing farmers.

In Southeast Sulawesi, 50 FGs or approximately 1,250 farmers began follow-up training activities, with 40 FGs from Kolaka and 10 FGs from North Kolaka Districts. A range of topics were taught to participants in July, including appropriate post-harvest handling, improving cocoa bean quality, and cocoa tree rehabilitation techniques for 1,245 farmers. Heavy rainfall during this period impacted training activities in cocoa gardens, though, despite the weather 1,267 farmers continued to attend follow-up training learning about pest and disease mitigation in August.

In West Sulawesi, 10 FGs or about 250 farmers from Polewali Mandar were active in training. In July, 239 farmers learned appropriate post-harvest handling, improving cocoa bean quality, and cocoa tree rehabilitation strategies at individual farms. Garden evaluation and rehabilitation was the second topic delivered to 236 farmers which provides recommendations and techniques to revitalize cocoa gardens.

**Table 2.** Number of participants of ASKA Follow up training Cycle I

Province	Topic	Attendance		
		Male	Female	Total
June 2008	Socialization	1,844	407 (18 %)	2,251
July 2008	Socialization	391	178 (31%)	569
	Appropriate post-harvest handling, improving cocoa bean quality, and cocoa tree rehabilitation	1,761	449 (20%)	2210
	<b>Total participants</b>	<b>2,152</b>	<b>627 (23%)</b>	<b>2,779</b>

August 2008	Pests and Diseases	1,442	292 (17%)	1,734
	Garden evaluation and cocoa plants revitalizing	341	126 (27%)	467
	Frequent harvesting, pruning, sanitation, and fertilizing	411	193 (32%)	604
	<b>Total participants</b>	<b>2,194</b>	<b>611 (22%)</b>	<b>2,805</b>

### **Vascular Streak Dieback (VSD) technical meeting**

On June 25<sup>th</sup>, AMARTA facilitated a technical meeting on the issue of Vascular Streak Dieback (*Oncobasidium theobromae*) which has recently increased dramatically in cocoa gardens, particularly in West Sulawesi. AMARTA organized the meeting with national and international experts in order to address the following:

- Identify the severity of the VSD disease based on rapid field assessments from several parties
- Assess the impact on cocoa production and quality
- Facilitate an in-depth technical discussion and overview of VSD and the key strategies to mitigate its spread
- Present the initial AMARTA interventions that are proposed to help address the issue.

The event was attended by the Director of the Indonesian Coffee Cocoa Research Institutes (ICCRI) and a strong contingent of cocoa experts, technical experts from the Australian Center for International Agricultural Research (ACIAR), including Professor Philip Keane, David Guest and Peter McMahon, national and provincial crop estate department representatives (Jakarta, South, West and Southeast Sulawesi), and ASKA private sector partners PT. Olam Indonesia and PT JBP-Armajaro who provided an overview of the industry perspective on declining productivity and quality.

As a result of the event, a number of short, medium, and long term strategies were proposed by ACIAR and ICCRI to assist farmers, including regular pruning of VSD affected trees, organic fertilizing, and ensuring the availability of shade trees.

Following up on the momentum achieved by the meeting, AMARTA continued to develop and improve training field staff capacity and skills, as well as completing additional reference materials such as: fact sheets, garden evaluation booklets, and garden evaluation training modules. Building on this effort, AMARTA completed the core topics underpinning a new training program that will be used specifically in Mamuju that focuses on improving the capacity of farmers to conduct a garden evaluation, carry out the grafting (side and chupon) or green budding in the nurseries, as well as the understanding of the specific fertilizers, land management, and good agricultural practices that are needed to manage newly planted or rehabilitated trees.

“Success to the AMARTA-Kolaka team who has trained 3,000 cocoa farmers from 120 farmer’s groups and is planning to train 2,000 more farmers in follow-up trainings. The intensive trainings from AMARTA bring optimum benefits for our farmers, such as improved on farm management, improved access to export markets, and cocoa bean quality, which in the end will improve farmer’s income.

Ir. M. Kasim Madaria, The Head of Kolaka Estate Crops

### **Clonal Genotype Trial and Production Demonstration Plots**

In an effort to seek tolerant or resistant VSD cocoa clones, AMARTA and ICCRI have collaborated together to facilitate a number of trial demonstration plots in Polewali Mandar and Mamuju District since the beginning of June 2008. The basis of the trials is to establish a potential source of VSD resistant materials for farmers and as a means of testing locally identified and selected clones. Comprising these trials are cocoa clones from three sources: The first from ICCRI has seen the provision of 8 ICCRI sourced in West Sulawesi, the second sourced from other regions of Sulawesi that show potential, while the third category of clones are those that have been identified by farmers and trainers and are undergoing additional trials.

In addition to the four clonal trial plots with ICCRI, ASKA has also initiated a production demonstration plot with its private sector partner in West Sulawesi exporter UD. Tunas Jaya, and local farmers. The aim is to serve as a model demonstration cocoa garden where good cocoa management practices are actively applied. UD. Tunas Jaya has been very committed to supporting this initiative seeing it as a key means of transferring knowledge and skills through a model cocoa garden for other cocoa farmers.

### **An Innovative Device Increases Revenue**

Haji Yaru is the head of the Sipatuo Farmer’s Group, of Lembah Subur Village, Ladongi Sub-District, Kolaka District, Southeast Sulawesi. When the ASKA program was first introduced in June 2007, many of Haji Yaru’s cocoa trees on his one hectare farm had poor yields largely due to PBK (Cocoa Pod Borer) and Helopeltis. After participating in the ASKA cocoa training program, Haji Yaru learned about techniques to improve his cocoa and gradually the productivity of his farm improved.

After an introduction to PT Olam’s buying station in Ladongi, Haji Yaru realized that there are four important elements to meet export standards for cocoa beans: moisture less than 7%, waste less than 2.5%, mold less than 4%, and a bean count of 110/100 gr. The first time he sold his beans to PT Olam he received a discounted price due to high waste levels and below standard bean count. Realizing this deficiency, he invented a sorting device in the form of a sieve that filters out larger size beans, and separates waste at the same time. His simple idea was utilized not only by the Sipatuo Farmer’s Group, but also by six other farmer’s groups in Lembah Subur Village.

Haji Yaru now sells his sorted cocoa beans to exporters and the smaller sized beans in the local market. He anticipates that by using this simple sorting device he can produce higher quality beans and a higher selling price. He also hopes that his simple device can help other farmers in sorting their beans. Haji Yaru stated, “Thank you AMARTA, Olam, Blommer, and USAID. Through the basic trainings, we are able to have higher quality cocoa beans, and now earn more money by selling them to exporters.”



Haji Yaru sharing his thoughts in a farmer's group meeting

### **Solar Dryers and Farmer Study Gardens**

The first solar dryer constructed by AMARTA was in August 2007 at the PT. Olam Indonesia buying station, in Kolaka District. Solar dryer training and construction has continued to extend and develop in other ASKA program locations, though with a range of different modifications including size, design, and materials. ASKA has completed constructing 74 solar dryers in Southeast Sulawesi, 15 in South Sulawesi, and four in West Sulawesi. There are 22 solar dryers that will be completed in the three provinces by October 2008. Initially, solar dryers were erected at ASKA partner buying stations as a model to illustrate effective drying methods for FGs to see when they visited, however as the program evolved solar dryers were constructed for both FGs and individual farmers to reduce the time for drying cocoa and improve post-harvest handling quality. Replication by both farmers and FGs has occurred due to the increased efficiency and improved quality achieved.

### **Technical Training for Bali Government Extension Personnel**

From August 10-12 AMARTA provided training and technical assistance to district extension officers from Tabanan and Jembrana District government agencies in order to enhance their knowledge of innovative techniques being used in Sulawesi. The two day on-site training provided an opportunity for ASKA to demonstrate a variety of practical applications and answer questions from the participants. All of the AMARTA training materials created were shared with the participants.

## **Training of Trainers in Garden Evaluation, Rehabilitation, and Replanting Efforts in Mamuju**

On September 22<sup>nd</sup>, ASKA held an internal training of trainers for AMARTA personnel in Mamuju to transfer additional skills and materials to field personnel. This is an innovative training program as it is the first farmer led replanting and rehabilitation training program of this type anywhere in the world. The solid foundation of core materials and lessons learned provided a wealth of important insights in addressing the replanting and rehabilitation efforts now facing the Sulawesi cocoa sector. The materials and curriculum being developed will become an important part of the way in which cocoa stakeholders transfer the necessary information, skills, and capacity to smallholder farmers.

“We had been trained before, but it was just classroom training. When we returned to our farm, we still did not know what to do because the theories that we learned were very different from the real conditions of our farms. But now with AMARTA and its SustaIndonesia Kakao Alliance (SKA) training program for farmers in subak abians [FG] in Tabanan, I can breathe a sigh of relief. Farmer trainers from AMARTA teach us how to perform correct practices of pruning, and we practiced the classroom theory at the study farm directly. I used to think that pruning my cocoa plants would reduce the pod production. But I am glad to learn that pruning, combined with balanced fertilizing actually improved my pod production. And there are no more pest and diseases (VSD and pod rot) in my farm.”

Mr. Sadya, cocoa farmer from Tabanan

## **ASKA and SKA Relations with Government Agencies**

As the ASKA and SKA programs continue to evolve, government agencies are becoming increasingly interested in what is being developed. In addition to the close collaboration with ICCRI as a fundamental component to support government relations, numerous district and sub-district extension agents frequently attend ASKA and SKA training to provide support. AMARTA field coordinators also routinely conduct monthly coordination meetings with district counterparts and district agencies who are responsive to replicating ASKA/SKA initiatives. AMARTA has- through its ongoing efforts to liaise with government extension services- also invited extension personnel to internal training and training-of-trainers activities.

The Mamuju District government has been extremely supportive and interested in supporting and replicating the AMARTA replanting program to cocoa farmers. District government agencies have proposed that 40 government extension workers should be trained by AMARTA technical staff. AMARTA has already shared training materials, training implementation modules, budgets and other background materials with district agency staff to assist in developing 2009-2010 district cocoa initiatives. AMARTA personnel from both Makassar and Bali have also conducted discussions and coordination efforts with Tabanan and Jembrana District agencies with positive responses from both district agencies.

### **BAPPENAS Field Visit to Bali**

From September 17<sup>th</sup>-19<sup>th</sup>, AMARTA welcomed a contingency from BAPPENAS during a field trip to Bali to observe cocoa activities. Eka Chandra Buana and Ms. Rika of BAPPENAS joined Jacky Hendrawan from USAID in discussions with government estate crops agents and personnel from Jembrana and Tabanan Districts. Field visits were also conducted with farmers from a number of different FGs to explore training activities and progress, as well as a site visit to AMARTA grantee, Big Tree Farm's, central cocoa processing unit to learn more about the role of the private sector in the program.

### **Disseminating Successful Practices Throughout Indonesia Using VCDs**

Last year on November 29<sup>th</sup>, 2007 USAID and AMARTA hosted the launching of smallholder cocoa training films. The films were shot on location in South Sulawesi. Since the launch a variety of government agencies at the national, provincial, and district level have requested the cocoa training films with 858 sets distributed to support government training activities or distributed directly to cocoa farmers at agricultural fairs, and 400 sets provided to the Directorate General of Estate Crops who distributed these films to 38 provincial estate crops agencies throughout Indonesia. Another 405 VCD sets have been provided to provincial and district estate crops counterparts in Bangka Belitung, South Kalimantan, West Kalimantan, South, West, and Southeast Sulawesi.

The films are also being used by AMARTA in its cocoa training throughout Indonesia. To date 2,900 smallholders from Cycle I of the *AMARTA Sulawesi Kakao Alliance (ASKA)* program in South, Southeast, and West Sulawesi have seen the films. Mr. Atto, a 39 year old cocoa farmer from Tappang Indah Farmer's Group (Polewali Mandar District, West Sulawesi) stated: "I am very happy with the VCD because I can watch it at home with other farmers anytime, the techniques in the film are simple and easy to apply in my garden, particularly the best cocoa cultivation practices and side grafting topics." Also, Mr. Sulaeman, a 51 year old cocoa farmer and member of the Padakita Farmer's Group stated: "Now we can recognize different cocoa diseases and address them, especially *Phytophthora sp.* (black pod and trunk kanker). We are excited about the VCD films as we can watch them many times and lend it to other cocoa farmers."



Use of VCD in ASKA follow-up training with Sipakamasse Farmer's Group, South Sulawesi



SKA farmers from Kembang Sari Farmer's Group in Sangketan Village, Bali view the film

### **SustaIndonesia Kakao Alliance (SKA) - Smallholder Training in Bali**

In this quarter, the SKA Basic Training program in Bali completed Cycle 1 in Tabanan District with 12 training modules for 40 FGs. The SKA Basic Training for Cycle 2 began in early July 2008 with socialization of the program for 40 FGs in Jembrana District. AMARTA grantee- Big Tree Farm's (BTF) staff and local agricultural extension agents were also invited to the training.

The first step undertaken in the SKA Basic Training Cycle 2 was the identification of FGs situated in Jembrana District based on information provided by the Estate Crops Office. Criteria for selection included a location close to BTF's central cocoa processing unit, the willingness of members to join the program, and the importance of cocoa as a source of income for farmers. After the initial process of coordination, identification, and consultation a total of 40 FGs located across two sub-districts were selected; Pekutatan with six villages and the sub-district of Mendoyo with nine villages. Similar to the first cycle of SKA basic training, the four farmer trainers from Tabanan are leading training sessions.

On August 22, socialization for the second SKA basic training was completed and at the end of August and early September, AMARTA trainers invited each FG to prepare study gardens that would be used for practicing the new technology. To date, all of FGs have established their own study garden and will allow AMARTA to utilize the sites for other beneficiaries.



**An AMARTA trainee showing improved cocoa pods**

## **Coffee**

### **Arabica Coffee**

AMARTA is supporting the activities of the Specialty Coffee Association of Indonesia (SCAI), which now has 46 members from all segments of the industry. The largest segment continues to be exporters, followed by farmer's cooperatives and retailers. The seven coffee cooperatives that have joined the association have 8,050 members.

Worldwide, the specialty coffee industry has adopted the Q-Cup system to measure the quality of specialty coffee. This system, developed by the Coffee Quality Institute (CQI), exists in every major coffee consuming and producing country in the world, except Indonesia. To rectify this constraint to competitiveness, AMARTA and SCAI organized a series of coffee quality trainings for the staff of SCAI members.

In the first phase of this program, 73 cuppers from farmer's cooperatives, exporters, roasters and retailers were trained by Ted Lingle, the Director of CQI, in the use and benefits of the Q-Grading system. These trainings, held in Medan, Takengon, Surabaya, Bali, and Jakarta between July 15<sup>th</sup> and 24<sup>th</sup>, were a success from two standpoints:



**Ted Lingle of CQI providing Q-cupping training**

- Half the trainees demonstrated the skills necessary to complete the full course and become certified, which includes a written exam and 21 different tasting, smelling, and cupping exercises. Among these, 23% of the students demonstrated a very high level of sensory skills, passing all of the tests during the day long training program. According to Mr. Lingle, "I was impressed with the skills of Indonesia's coffee cuppers and look forward to bringing the full Q-Grading system to Indonesia."
- Secondly, the Arabica coffee industry strongly supported the training program through training fees and in-kind contributions of staff, equipment and other costs, with a total value \$5,550. This demonstrates the industry's interest in bringing the full Q-Cup program to Indonesia.

AMARTA and SCAI are currently planning an activity to map all the Arabica Coffee growing areas in Indonesia. During the next quarter, workshops will be held focusing on each coffee origin. Stakeholders will develop maps for each origin, which could become the basis for geographical indications that acknowledge the location of specific high quality products and are already an important part of the wine and cheese industries. Geographical indications are now spreading to coffee and other food products, and Indonesia recently passed a law governing the creation of them for Indonesian products.

### **AMARTA Coffee Grantees**

AMARTA continued to monitor and support its two grantees in the coffee sector, PT. Gajah Mountain Coffee in Aceh and C.V. Lion Lestari in Flores, both of whom are SCAI members. During the reporting period, the members of the Gayo Mountain Cooperative were certified as organic producers by Bio-Inspecta, a Swiss certification agency. The cooperatives working with both companies have completed their applications for Fair Trade certification, and are now awaiting inspection.

Between April and June, P.T. Gajah Mountain Coffee purchased 110,300 kg of coffee from the Gayo Mountain Cooperative and CV. Lion Lestari purchased 70,000 kg. Both companies sorted and graded the coffee using the equipment purchased under the AMARTA grant. These companies exported six containers of coffee during the quarter, with a total value of \$418,850. This is an 80% increase over the previous quarter.

### **Brocap Traps Prove Successful in Combating Pests**

The Coffee Cherry Borer (CCB) is a major coffee pest in Indonesia. AMARTA and its partners have distributed 1,000 Broca Traps to 150 farmers in Sidikilang, Toraja and Aceh to capture CCB.

Initial data show that using the traps can save a farmer with one hectare of coffee \$189 per year, if the farmer sells his or her coffee at the green bean stage. These farmers can easily recover the cost of the traps in the first year.

AMARTA will continue to collect data through the peak production seasons in each area. This data will then be presented to farmers at trainings in each area, showing them economic benefits that the traps can provide. AMARTA will also identify sales outlets to make the traps available in coffee production areas.



**A farmer in Sidikilang with a Brocap trap**

“I have noticed a drastic reduction in the CCB damage on my farm and I am ready to buy more brocap traps and supplies. I have been fighting pests on my coffee plants for years and have finally found a great product.”

Mr. Zacharia, coffee farmer from Sumatera

## **SCAI Website Finds Buyers**

In May 2008, The Specialty Coffee Association of Indonesia (SCAI) launched its website at [www.sca-indo.org](http://www.sca-indo.org), with technical assistance from AMARTA. SCAI is a trade association with 46 members from all segments of the specialty coffee industry. The largest segment is exporters, followed by farmer's cooperatives and coffee retailers. SCAI exporters sell 30% of Indonesia's Arabica coffee, while the cooperatives have more than 8,000 farmer members.

In addition to educating people about Indonesian coffee, the website is linking buyers and sellers. In the past five months, the site has received 5,100 unique visitors and 90,000 hits, compiling more than 50 inquiries from companies interested in buying or selling Indonesian coffee and processing equipment. These leads have been passed on to relevant SCAI members so they can follow up directly. Seven of the companies who visited the website joined the association, including coffee importers from the United States, Australia, and Russia.



From the home page of [www.sca-indo.org](http://www.sca-indo.org), showing links to regions

## **High Value Horticulture**

### **Strawberry Support Program in Bandung, Garut and Majalengka**

During the quarter, AMARTA finalized an agreement with the Department of Quarantine to destroy 500,000 units of frozen strawberry planting material that were imported from California, USA based on a finding of *Xylella Fastidiosa*. AMARTA worked closely with USAID throughout the process to ensure that everything possible was done in order to save the planting material; unfortunately numerous efforts and documentation were not enough to convince the Department of Quarantine that the plants were disease free.

In order to reduce losses incurred by farmers who expended resources preparing planting sites, AMARTA purchased 30,000 local strawberry seeds from Bandung and then distributed 25,000 to Garut farmers, 3,000 to Majalengka farmers, with the

remaining 2,000 planted in the Indonesian Vegetable Research Institute (IVEGRI) trial land as a demonstration plot. These 30 day old nursery plants are expected to be harvested in late September and Early October, though in August 2008, some of the plants had already started to fruit and were harvested every two to three days. Rancabali's growers are considered some of the most experienced and their Agribusiness and Agrotourism Association (ASGITA) – comprised of 11 farmer's groups with more than 700 members – are willing to train and share their experience with Garut farmers and help in marketing the strawberries. AMARTA is planning to assist ASGITA with packing facilities in order to improve efficiency and decrease post-harvest losses caused by poor packing methods and farm to market roads.

Strawberries are a very promising commodity to increase farmer's income. Based on interviews with Bandung farmers, 1,000 polybags placed on approximately 1,000 m<sup>2</sup> of land, harvested every two days for 15 months, with the current farm-gate prices of Rp. 10.000 per kg, can provide gross income of approximately Rp. 20 million. If family labor is utilized income projections increase to over Rp 35million.

In September, AMARTA conducted a program called the "Red-Ripe Strawberry" project providing training and facilitating market access for harvested berries. "Red ripe" means that the fruit is harvested at 90-95% ripeness or above; not 75% as commonly done by farmers in Indonesia, helping produce a higher market price and increase farmer's income significantly due to the higher quality.



**Bandung farmers help train Garut farmers**



**90% ripe strawberries**

### **Broccoli in Lembang and Bandung**

During the quarter, AMARTA continued to strengthen the 1,000 m<sup>2</sup> broccoli demonstration plot in Manoko, Lembang run by the Palmarosa-3 Farmer's Group. The produce was sold to Carrefour Supermarket through a specialized wholesaler, CV Bimandiri. In addition to training and technical assistance, AMARTA provided tray based nurseries, replacing the previous seed bed based units, and provided a water pump to allow farmers to continue production during the dry season in order to earn a higher sales price- currently Rp. 3,000 per kilogram.

The new nursery cost Rp. 9 million and helped curb the instances of club root disease caused by a virus that attacked through the root during transplanting. By utilizing the tray based method, the broccoli was only transferred once rather than multiple times which increases the likelihood of the disease. During the quarter, utilizing 30 total plots, farmers generated Rp. 15 million in revenue with production costs of Rp. 8.1million; leaving a profit of Rp. 6.9 million and providing a compelling case for the new technology since the nursery house lasts for three years. In addition, the nursery house also provides Palmarosa 3 with the opportunity to provide high quality seeds. It can sell 3,000 broccoli plants- enough to grow 1,000 m<sup>2</sup> – including replacement seed- for Rp. 500,000.



Farmers in Lembang picking ripe broccoli



New tray based nursery improves quality

### **Water Pump Provides Opportunities for Providing Services**

Water pumping equipment was also provided to the Palmarosa 3 Farmer's Group to grow broccoli during the dry season to receive a better price compared to the rainy season. The cost of the investment was Rp. 8,500,000 for the water pump, small generator, and 1,000 m of hose. The investment also provides the FG with an opportunity to become a water service provider to other farmers. The cost of one unit of watering service is Rp, 30,000 including fuel and labor, while revenue was Rp. 50,000. From June through August, Palmarosa 3 provided water services for 13 plots consisting of 84 units of watering. Total revenue during that period was Rp. 4,200,000 while costs were only Rp. 1,260,000, resulting in a profit of Rp. 2,940,000. The Rp. 8,500,000 investment that is expected to last five years is compelling, and the group is considering additional purchases.

### **Organic Vegetable Demonstration Plot in Tarogong-Garut**

Efforts continued on the 1,000 m<sup>2</sup> organic vegetables demonstration plot in Tarogong-Garut, overseen by the Agribusiness of Kudangsari Youth Group, which includes seven young members who AMARTA believes will make excellent horticultural private extension agents in the future. Additional training and technical assistance was provided in common cultivation techniques and organic fertilizer and pesticides. In appreciation

of AMARTA's efforts, the local government offered 3.5 hectares of land to use for additional demonstration plots.

Unfortunately, the demonstration plot faced a high rate of pest infestation, reducing expected results by about 50%. In addition, high transportation costs to the site reduced revenues produced, however capturing the entrepreneurial spirit the group decided to expand the demonstration plot to 1,500 m<sup>2</sup> and used income to replant damaged crops. They also began to sell produce door to door in order to boost sales. Organic lettuce and eggplant were harvested and discussions with potential buyers showed strong demand for these products.



**Organic pesticide grinding**



**Organic lettuce and eggplant produced by the Kudangsari Farmer's Group**

### **Post-Harvest Training with IVEGRI and the Indonesian Retail Association**

Vegetable perishability may lead to high price fluctuations over a very short period of time, dramatically impacting farmer's income. It is reported that in developing countries product loss due to post-harvest handling is as high as 30-40%. In order to address this issue, AMARTA and the Indonesian Vegetable Research Institute (IVEGRI) in collaboration with the Indonesian Retail Association (APRINDO) conducted a two day workshop on fresh vegetable handling utilizing supermarket procurement quality standards. APRINDO trained farmers in wrapping techniques to match supermarket standards, as well as providing insight into sorting and grading. IVEGRI also introduced sterilization equipment, designed by the Indonesian Science Institute (LIPI). This equipment can kill bacteria and reduce pesticide residue, using ozone gas. The event

provided farmer's with an understanding of quality demands required by the local market.



**Sterilization equipment**



**Wrapping technique training provided by supermarket staff**

### **Rapid Assessment of Singapore Fruit and Vegetable Market**

AMARTA COP, David Anderson, conducted a rapid assessment of the Singapore Fresh Fruit and Vegetable Market from September 9<sup>th</sup>-13<sup>th</sup> and identified many opportunities for Indonesian high value horticulture products. A full report will be released in the next quarter.

### **Training on Best Agricultural Practices for Citrus in Berastagi, Karo District, North Sumatera**

AMARTA activities continue improving production of citrus by training farmers in Standard Operating Procedures (SOPs). The training includes: Pest and disease control, tree pruning, and thinning. During the quarter training was conducted for 36 FGs including 79 females and 194 males covering 322 hectares of citrus fields in three villages; Pernantin in Munthe Sub-regency; Raya in Berastagi Sub-regency; and Kubu Colia in Barus Jahe Sub-regency. Each village has a demonstration plot where farmers can share and discuss implementation of best agriculture citrus practices. AMARTA followed up the training every two months with monitoring and evaluation visits to track progress. AMARTA also conducted 15 additional citrus field school trainings during the quarter focusing on SOPs.



**Citrus farmers participating in AMARTA's training**

## Rejuvenating Citrus Trees in North Sumatera

Evangelista Bangun, a 30 year old citrus farmer from Tanjung Barus Village and his 29 year old wife, Siskawati br. Barus, along with their two children, have rejuvenated their citrus trees by cutting off the branches causing the tree to resprout new branches. Mr. Bangun's citrus farm is 0.25 hectare with 65 trees. The original trees were planted about 30 years ago and for more than 10 years the citrus farm was essentially abandoned with bushes covering the land.

AMARTA trained Mr. Bangun and his wife last year on best agricultural citrus practices using the standard operating procedures (SOPs) manual. At the farm, Mr. Bangun also planted new citrus seeds for the comparison of production with the rejuvenated trees. The rejuvenated citrus trees Mr. Bangun's family cultivated produced more than 25 kilograms per citrus tree. On the other hand, the trees grown from seed produced only 15 kilograms per tree after four years. Mr. Bangun stated, "USAID and AMARTA have improved my family's economic state from no hope to an overflow of success, thank you for the training and continued assistance on my farm!"



**Mr. and Mrs. Bangun with their children at the newly rejuvenated citrus orchard**

### **Improved Production and Marketing of Vegetables in Berastagi, Sumatera**

AMARTA and PT Hortijaya, a producer and exporter of vegetables to Malaysia and Singapore, as well as to local supermarkets in Medan, cooperated in determining an appropriate broccoli variety for the export market, which has a regular crown shape, no hollow stem, and cat eye. Broccoli is a high value vegetable that requires specific cultivation techniques and post-harvest practices. To resolve the problem of a hollow stem and cat eye, AMARTA and PT Hortijaya have made trials of eleven varieties from the US, Japan, and Taiwan. AMARTA also provided technical assistance in land preparation, seed preparation, planting, fertilizing, and post-harvest handling. On June 18<sup>th</sup>, 2008, AMARTA and PT Hortijaya planted and observed the growth process with harvesting in August. The field planting trial was followed by a post-harvest trial to determine resistance in cold storage. Final results determined that the Green Magic, Gypsy, Varitas 6, and Everest varieties were the most suitable alternatives. The trial process will be repeated in order to confirm that the varieties consistently produce strong results. AMARTA and PT Hortijaya will conduct another trial in October in order to verify the results and establish linkages with exporters.

AMARTA COP, David Anderson, procured additional improved variety vegetable seeds in the United States during the quarter for further variety trials to be conducted during the next quarter in Berestagi and West Java.



**PT. Hortijaya and AMARTA check newly harvested broccoli**

### **Introducing Carrots in North Sumatera**

The four villages of Basam, Kuta Mbelin, Bunuraya and Merdeka have harvested carrots



**AMARTA's carrot demonstration plot in North Sumatera with a rich harvest**

from the AMARTA demonstration plot. The results proved in the field that utilizing best practices can result in superior quality and higher yields. More than 120 carrot farmers worked on the site and received hands on technical assistance. Demand appears strong from local buyers in Sumatera and other markets are being explored to ensure the best price for farmers.

## **Carrot Farmer Improves Production and Shares New Technology**

Mrs. Maria Br. Tarigan is a 50 year old farmer living in Bunuraya Village, Tiga Panah Sub-district, Karo District who took on the duty of simultaneously running a household and becoming a carrot farmer. She currently farms a 5,000 m<sup>2</sup> carrot field, which she established in 2005, learning from other farmers in her neighborhood and from her own experiences. Her maximum production was previously four tons with an average price of Rp 800 per kg, providing total net income of Rp 2,200,000 after deducting maintenance fees of Rp 1,000,000.

Since April 2008, USAID/AMARTA continuously supported Mrs. Tarigan's, Damai Sejahtera Bunuraya Farmer's Group. The support was given through theoretical and practical trainings, including establishing a group demonstration plot. According to Mrs. Tarigan, she immediately applied lessons from the demonstration plot in her own garden. The results were remarkable: Since participating in carrot cultivation training, and implementing recommendations on land preparation, seedlings preparation, maintenance, and harvesting, Mrs. Tarigan was able to see increased productivity of 50%, totaling six tons per 0.5 ha, and a market value of Rp 1,000 per kg, while her total net income increased by 127% to Rp 5,000,000 excluding the same Rp 1,000,000 maintenance fee.

The significant increase convinced Mrs. Tarigan that proper cultivation practices will improve production and increase quality and provide a higher price for her carrots. She has also become an avid supporter of other farmers, sharing techniques and information with her peers. She stated: "Thank you to USAID and AMARTA for helping me empower myself as both a mother and a farmer. I now have more carrots that are higher quality than what I grew before. My family can now afford to buy additional food and my children have new clothes and books to study. You have changed my life, helped my family, and helped farmers in the Tarigan's Damai Sejahtera Bunuraya Farmer's Group."



**Mrs. Tarigan with her improved quality carrots**

### **Training on Best Practices for Bananas in Deli Serdang District**

AMARTA continued training farmers, government extension agents, university students, and Government Agriculture Research Station representatives (BPTP). During the quarter, AMARTA trained 195 female and 399 male banana farmers, in five villages, in addition to eight students, 19 government extension workers, and five government researches. Fifteen of the top students were selected to disseminate the training in their respective villages.



**Julian Velez, STTA, demonstrates banana packaging**

AMARTA STTA Julian Velez demonstrated dry banana handling in the Tiga Juhar packing house where farmers learned the proper use of tools and equipment, and proper procedures to ensure freshness and minimal damage.

### **Replicating Success: Government Extension Agent Adopts Double Row Technology for Bananas**

USAID and AMARTA conducted training on July 20<sup>th</sup> and 21<sup>st</sup>, 2007 at STM Hilir Sub-district for more than 150 participants, including: banana growers, associations, NGOs, government extension agents, and sub-district leaders. Mr. Syahril was one of the government extension agents from Deli Serdang District who participated. He immediately began adopting the new double row planting technology in September 2007 at his small plantation behind his house in Klumpang Kampung, North Sumatera.

Using the system, Mr. Syahril has harvested four bunches containing eight and nine hands for every bunch. The grade of his banana fingers are also grade A and grade super, which is the top quality for banana production. Mr. Syahril has also applied the technology adopted from AMARTA such as: seed selection, de-leafing, de-handing, de-budding, de-flowering, bunch clearing, organic fertilizing, and de-tipping or banana leaf surgery. Now Mr. Syahril is supporting AMARTA as a trainer from Deli Serdang District Agriculture Department to train banana growers and other government extension workers using the new technology.



**Mr. Syahril now trains others on the double row system**

### **Deli Serdang Barangan Banana Community Active in Policy Advocacy**

It began in a workshop in Medan on May 29<sup>th</sup>, 2008 co-hosted by AMARTA and the Deli Serdang Regency Office of Agricultural Services, where barangan banana stakeholders in Deli Serdang realized the need for an alliance to advocate policy and regulatory matters related to establishing an enabling business environment. The participants then elected a committee of 14 members to formally establish the Deli Serdang Barangan Banana Community, including 19 members, coordinated by a chairman. The community focused on three top priorities, requests to the Regency Government for: 1) Developing access roads, 2) Activating the Sub Terminal Agribusiness Talun Kenas, and 3) Developing an appropriate scheme to access credit. The three activities will result in earlier harvests for farmers enhancing the committee members' self-confidence and the organization's credibility.

### **A Champion of Improved Technology**

Mr. Mambar Sembiring is a 50 year old farmer cultivating bananas in Talun Kenas, Sub-district of STM Hilir-Deli Serdang District. Mr. Sembiring has a wife and five children between 14 and 28 years old. In 2001 the government through BPTP staff- introduced a new method in cultivating bananas, and Mr. Sembiring started to cultivate bananas on his land; however, Mr. Sembiring adopted only the single row planting method where the population is only 1,100 trunks per hectare.

In July 2007, AMARTA provided extensive training and technical assistance on the double row planting system for barangan banana growers in Deli Serdang, and Mr. Sembiring with his entire family attended the training provided by AMARTA. Before his family adopted the new method, they could only harvest about 20 bunches per week. After participating in training and receiving technical assistance the harvest improved to 100 bunches with an average of 6.5 hands per bunch per week priced at Rp 4,470 per hand: His total weekly income dramatically improved to Rp 3,087,500 per week. Mr.

Sembiring and his family have gained a staggering 80% in production improvement as well as an incredibly impressive Rp 1,587,000 per week in additional net income after expenses of Rp 1,500,000. Mr. Sembiring's family does not pay for any labor because his family members provide the labor.

Mr. Sembiring noted: "USAID and AMARTA have made my family's dreams come true. We gain a very large income through our family banana business by working hard, using new knowledge gained during training, and working with AMARTA staff on site to improve our bananas. We could have never succeeded without help and we are thankful that USAID and AMARTA have provided opportunities for us and our neighbors."



**Mr. Mambar Sembiring transporting his harvest from the field**

## **Floriculture**

### **Prototype Greenhouses Provide Flexibility to Meet Demand**

Chrysanthemums are one of the most popular flowers to be used as decorations in parties and ceremonies in residences, hotels, restaurants and other public places. With the various colors and shapes, the flowers have excellent potential to be cultivated and marketed at specific times of the year, especially during holiday seasons. Many farmers in Berastagi, especially in Raya Village, Karo Regency, North Sumatera have cultivated chrysanthemums traditionally, making them highly dependent on climate and weather that is not always conducive to quality production.

To resolve this issue, AMARTA provided training for 128 farmers, and constructed a greenhouse prototype that incorporates irrigation and light control systems. Additional lighting is crucial in good chrysanthemum cultivation to plan and regulate simultaneous harvest times, and to adjust the harvest time with the seasons of increased demand.

Chrysanthemums will bloom two months after planting, and in order to ensure a simultaneous harvest, additional lighting is required to imitate daylight. Additional lighting can be achieved with the installation of 20-25 watt neon lights -equating to a 100 watt regular light bulb- every two meters placed in between rows of plants. Lights



should be turned on for three hours. Chrysanthemums blooming after only two months have reached a desirable height. The plants will naturally continue their generative growth and bloom, and in the third month of growth the flowers can be harvested.

### **Chrysanthemum Farmers Field Day in Berastagi**

AMARTA's objective in floriculture is to establish commercial quality cut chrysanthemums grown in greenhouses for a group of more than 125 flower farmers in Berastagi, North Sumatera. The greenhouse models show farmers first-hand proper cultivation techniques. Throughout the process, lectures and practical field days were conducted, and the farmers began to ask questions and became more engaged in the activities. The concept of providing continuous light to chrysanthemums during the growing process was a new concept and the participants were intrigued, especially when they found out that through additional targeted lighting they would be able to predict and pinpoint when flowers would be ready for harvest. Traditionally, flower farmers used to harvest for several weeks, and even months, because they could not control the timing of flowering. The first harvest was observed by the entire group and their spouses; the women were in charge of the post-harvest handling. Lectures and demonstrations were conducted regarding post-harvest production and handling, grading, bunching with rubber bands, cutting stems the same length, removing one-third of the lower leaves, wrapping, and placing flowers in buckets with clean water for display in a suitable area.

AMARTA beneficiaries harvested all of the chrysanthemums at the greenhouse demonstration plot and sold the entire supply within minutes at Rp 3,000 per stem or Rp. 30,000 per bunch of 10 stems, Rp 21.000 more than the Rp 9,000 per bunch predicted in the feasibility study- approximately the same price farmers receive for their crop in Java. The excitement of the farmers was evident and they are committed to following all of the recommendations in the future.



**STTA Benny Tjia meets with the female participants during the Farmer's Field Day**

Farmers are now convinced that they can recoup their investment within 8-9 months, after two growing cycles, by growing in simple bamboo and plastic houses. The major obstacle for these low income farmers is generating Rp 4-5 million to purchase UV plastic. AMARTA is exploring opportunities with the farmers to expand the project and address abundant markets in Aceh, Medan, Palembang, and even in Batam.

## **Rubber**

### **Bridgestone Visits Smallholder's Rubber Farms in Sumatera**

In an effort to connect buyers directly with farmers, AMARTA facilitated a visit for three senior members of Bridgestone Sumatera Estate in Sanggau District. The group observed the quality, quantity, type, and price of raw rubber produced, and calculated transportation costs of approximately Rp. 1,800 from Sanggau to Bridgestone, Dolok Merangir, and North Sumatera. Bridgestone Sumatera will buy the rubber sheet from farmers at Pana and Bereng Bekawat Villages when the quality is 60% dry rubber content (DRC). The visit provided Bridgestone with a first hand look at AMARTA's training and technical assistance activities and provided the farmers with direct testimonials from Bridgestone that emphasized high quality production.

### **Latex Processing Units and latex processing training**

Placing an emphasis on improving the quality of rubber sheet, AMARTA planned to establish latex processing units at Pana and Bereng Bekawat Villages, West Kalimantan in August. Due to financial considerations during the quarter the activity was postponed, however the farmer's groups finished preparing the location for the processing units. Intensive training for latex processing at Pana and Bereng Bekawat Village was provided for five female and 92 male participants.

### **Tapping Technique Training Increasing Rubber Productivity**

Currently Indonesia is the second biggest natural rubber producer in the world with 84% of the total production area managed by smallholder rubber plantations. However, rubber smallholders tend to have lower productivity and quality than estate plantations. Some factors identified that cause low productivity include planting material from jungle rubber, poor maintenance, and inappropriate tapping practices. In an effort to address the smallholder rubber problems, AMARTA developed tapping technique training for smallholders in Bentok Darat Village, South Kalimantan. The objective of the training was to transfer technology from Bridgestone Kalimantan Plantation (PT BSKP) to rubber smallholders in order to increase latex productivity. As a result of this activity, farmers have decreased their bark consumption, providing a longer lifespan for the trees and increasing productivity.



**Tapping training participants practice**

### **Certified Rubber Nurseries Produce Improved Planting Material in South Kalimantan**

Continuing previous efforts of the AMARTA rubber nursery program, on July 29<sup>th</sup> in the South Kalimantan Provincial Estate Crops Office, AMARTA and Bridgestone Kalimantan Plantation, together with the South Kalimantan Estates Crops Office, provided rubber nursery certification credentials (*Tanda Registrasi Usaha Pembibitan - TRUP*) to four farmer's groups: Sari Murni from Kait-Kait Village; Karya Mufakat from Kait-Kait Baru Village; Karya Bersama from Martadah Village; and Karya Baru from Bentok Darat Village. The event was opened by the Director of Estate Crops Services of South Kalimantan with representatives from the South and Central Kalimantan Branch of the Indonesia Rubber Association (GAPKINDO), Bridgestone Kalimantan Plantation, Greenfield Malaysia, the East Kalimantan Forestry Training Center, and other farmer's groups.



**Newly certified rubber farmer's groups**

Besides presenting the TRUP certificates, a stakeholder discussion followed the ceremony focusing on the current AMARTA program and the broader status of rubber nurseries in South Kalimantan. Several outcomes were achieved as a result of the discussion: the Estate Crops Service of South Kalimantan Province congratulated and thanked AMARTA and Bridgestone for improving the quality of rubber planting materials and will continue to monitor the rubber produced by FGs. GAPKINDO expressed their hope that the FGs would continue to produce high quality rubber planting materials to increase rubber productivity in Kalimantan. Bridgestone expressed their commitment to continue providing technical assistance to FGs and requested that GAPKINDO continue to support rubber smallholders and entrepreneurs.

### **Providing Support for Establishing Bud Wood Gardens**

During the quarter, AMARTA and Bridgestone Kalimantan Plantation supported bud wood gardens in four villages. Field visits to the four FGs rubber nurseries showed the evolution of bud wood gardens and two key constraints: maintenance of sufficient bud wood and the location of gardens- those that are farther away from farmer's homes are more difficult to maintain. On July 30<sup>th</sup>, AMARTA met with Bridgestone and as a result in 2009, Bridgestone will contribute 10,000 rubber planting materials in polybags to establish bud wood gardens in Banyu Irang Village, Bati-Bati Sub-district. In addition Bridgestone offered technical assistance for the East Kalimantan Forestry Training Center for rubber cultivation training, as well as rubber planting materials. AMARTA is presently monitoring and providing support for rubber nursery producers in South Kalimantan prior to initiating the next step- providing clonal purification certification for clonal nurseries and providing training for FGs.

### **Enhancing Rubber Production Through Training and Certification**

Mr. Suwardi is the leader of the Karya Mufakat Farmer's Group at Kait-kait Baru Village, Bati-bati Sub-district, Tanah Laut District, South Kalimantan. He has been working with AMARTA since September 2007. He has consistently participated in AMARTA and Bridgestone training, such as rubber nursery management, certification (TRUP), and tapping. He also received 2,000 units of PB 360 clone rubber planting materials for bud wood gardens.

Before he joined AMARTA's activities he did not have sufficient knowledge or resources and for each grafting period he needed to purchase bud wood eyes from Bridgestone and other nurseries since his own garden could not produce sufficient bud wood eyes. Today, through expanded knowledge and new certification he has developed his rootstock nursery, increased bud wood eyes in his garden, and hired eight new grafters to assist him in implementing good rubber practices.

Mr. Suwardi stated: "By following AMARTA and Bridgestone's technical assistance and training, I did not need to buy the bud wood eyes as I had in the past. I now save Rp 150,000 each day in production costs and produce extremely high quality rubber. Thank you to AMARTA for preparing TRUP certification for smallholders because it is very difficult and expensive to do by ourselves."

## **Market Information System Provides Updated Rubber Pricing, West Kalimantan**

In order to provide more transparency and the most recent rubber pricing, AMARTA is working with the market information staff in West Kalimantan to provide daily rubber prices to farmers in Pana and Beduai Villages by SMS via mobile phones, as well as through personal visits to the villages. Price information is provided by large traders in Sanggau District and crumb rubber factories.

## **Attendance at National Rubber Agribusiness Workshop**

AMARTA attended the 'Rubber Agribusiness Workshop' in Jogjakarta on August 20<sup>th</sup>-21<sup>st</sup>. The workshop focused on utilizing the newest technologies to improve rubber productivity, quality, and competitiveness. AMARTA provided information regarding ongoing efforts and explained updated rubber technology, while other participants discussed the current rubber situation, including: government deregulation, current demand and prices, and the new scheme of Standard Indonesian Rubber/SIR. The Director of GAPKINDO, Mr. Daud Husni Bastari presented estimations based on the Institute of Rubber Study Group (IRSG) that in 2010 demand for natural rubber will increase 5% with production increasing 4%.

## **Seaweed**

AMARTA is assisting seaweed farmers to expand production at two locations in Northern Sulawesi, Lemito in Pohuwatu District and Kwandang in North Gorontalo District. The program is implemented in conjunction with the Makassar-based NGO, SEAPlant Net, which is providing technical assistance and planting material. AMARTA completed three main activities during the reporting period:

- Mapped existing seaweed farms in Lemito and Pohuwatu using GPS. The data will help AMARTA to document growth in the industry.
- SEAPlant Net provided planting material to 51 new farmers and transferred the Kulit Buaya variety of seaweed from Kwandang, where it was discovered by AMARTA and SEAPlant Net, to Lemito. Manufacturers have confirmed that this variety has excellent carrageenan content.
- Conducted trainings for a total of 140 farmers on improved production and post-harvest processing methods. In August, the trainings focused on a new technique for drying seaweed. Rather than removing the seaweed from the lines and spreading it on bamboo platforms, farmers were shown the advantages of



**A new way to dry seaweed**

leaving the seaweed on the line using a wooden frame, where it dries faster, saving time and improving quality.

In September, 25 % of the farmers began to experience a condition called "ice-ice", when the tips of the seaweed turn white and die back. This common condition is caused by high salinity and stagnant water, which prevents the seaweed disposing of waste materials and extracting sufficient nutrients from the water. AMARTA provided training on how to reduce the occurrence of "ice-ice". One recommendation is to tend the farm daily, removing any silt and parasitic plants from the crop. In some circumstances, farmers are advised to move their farms to areas with greater water flow. It is hoped that the Kulit Buaya variety may be more tolerant of stagnant water than the Tambalang variety, which originally came from the Philippines.



**A farmer in Lemito cleans his lines to prevent ice-ice**

### **An Expanding Seaweed Business Helps A Farmer Pay Off Debts**

Yusef Rahim, who is known as Ka' Ote, began growing seaweed in 2000. Using his savings, he built a farmhouse on stilts (called a pondok) and bought lines, floats, and planting material. He faced difficult times in 2002, when his crop was damaged by high water temperatures and stagnant water. He was able to continue, though always lacking planting material to expand. Ka' Ote belongs to the Gemar Indah seaweed farmer's group, one of the 15 groups in Lemito Bay working with AMARTA.

In March 2008, AMARTA provided planting material to the lead farmer in Gemar Indah to establish a nursery for the group. The small clumps of seaweed that are used as planting material are called "seed" by farmers. In April, this nursery provided Ka' Ote with a loan of 150 kg of seed to expand his farm. By May, the seaweed had grown so rapidly that he was able to repay the loan by providing three more members of his group with a total of 350 kg of seed so that they could increase their yields.

Later in May, he attended a technical workshop sponsored by AMARTA. One of the important lessons he learned in the workshop was to increase the size of his planting material. Previously, he had used portions of 100 grams, however now he is using portions of 150 to 200 grams. This practice allows the crop to gain weight more rapidly, producing new seed every 25 days.

He has also adopted a new method of drying his seaweed, which was introduced by AMARTA in August. Instead of drying the seaweed on a bamboo platform, he now dries it on the line. This new technology has reduced the drying time from three days to two days. In addition, he found that the dried weight from 35 meters of line was 28 kg, instead of the 22 kg he expected.

Now that he has repaid his seed loan, Ka' Ote is selling both planting material and dried seaweed. In July, he sold 400 kg of seed to two farmers outside his group at Rp. 1,500 per kg and 200 kg of dried seaweed at 12,000 IDR per kilo. This seaweed, which came from 175 meters of line, earned him a total of Rp. 3,000,000 (\$326). In 45 days, he will harvest another 350 meters of line. Using the money he earned, Ka' Ote was able to pay for his son Imrawan's wedding. Imrawan currently lives in Gorontalo, but he is planning to come back to Lemito to join the growing family business.



**Ka' Ote selecting planting material**

## **Papua Agriculture Development Alliance (PADA)**

### **Kokonao**

#### **Ice Factory and Improved Fish Pricing**

PADA provides assistance to increase productivity and prices paid for fish to support the Komoro Community in Kokonao. Undoubtedly, the main challenge is the inability of fishermen to preserve their catch. Hence, fish are merely caught for local consumption even though demand for fish from Timika is high. Fishermen were paying Rp15,000 to Rp. 20,000 for 15kg of ice from a Timika based ice plant, a substantial amount since they



**Fishermen cleaning their catch and removing ice**

only make Rp. 30,000 for the largest fish that they sell. AMARTA-PADA works closely with the Maria Bintang Laut Cooperative to ensure that fishermen receive the maximum benefit from the recently built ice factory in Kokonao operated by Maria Bintang Laut. The Cooperative only charges Rp 12,500 per block of 15 kg ice and the affordable price enables fishermen to purchase more ice to bring with them on the water in styrofoam boxes provided by PADA.

In the past, the price of fish was determined by size and not necessarily the weight of the fish. After discussions with the fishermen organized by PADA, the Cooperative decided that it would pay Rp10,000 per kg of Baramundi fish and Rp 8,000 per kg of other fish varieties. With these prices the fishermen earn more because payment is made per kilogram, and therefore they do not have to accept the flat price usually dictated by the buyers such as local businesses and traders. The Cooperative is then able to sell the bulk catch to traders or transport the fish to Timika in order to receive a premium.

Activities concluded this quarter include expanding ice production, purchasing fish from local fishermen, data collection for economic evaluation, and training beneficiaries in maintenance of facilities. Maria Bintang Laut, has taken over most of the daily operations and management, while PADA continues to assist in providing technical assistance in running the ice factory, maintaining



**Weighing the fish before selling**

electrical and mechanical components, providing basic resources such as fuel, and assessing improvements in ice production. Additionally, evaluation is underway to calculate more precise prices to charge for fish and ice in order for the Cooperative to increase sales and begin making a profit to become sustainable. As a result of these activities participating fishermen have seen a dramatic increase in their daily income from Rp. 20,000 to Rp. 75,000 based on access to ice for storing their catch and selling based on weight rather than size. Over Rp 34,000,000 of income was earned by fishermen in Kokonao during September.

### **Fiberglass Boats**

Another focus of PADA activities in Kokonao is introducing a new method of boat construction and repair by using fiberglass material to cover the outer part of the wooden boats and canoes currently used along the Mimika River and for making new canoes. Training was provided for 25 participants, all local men, focusing on fiberglass handling procedures and building molds for different fiberglass objects. The training was divided into three sessions each lasting between two and three weeks. At the end of the training session in June participants managed to coat four boats with fiberglass material. These boats include three canoes and one medium sized boat. In addition the training participants also finished 13 simple cool boxes.

Local contractor CV. Canary Imandaya delivered a substantial quantity of raw fiberglass materials in early July. A slight modification was made to the building mold and by the end of July the contractor was able to produce new molding for small canoes and begin working on a new mold for larger canoes, which will be completed in October. Local fishermen can now purchase a larger size fiberglass canoe 20% cheaper than an equivalent wooden canoe, and can do so on credit. The access to locally manufactured boats has already produced significant economic advantages for both buyers and sellers.



**Three completed canoes**

### **Transport Boat**

The transport boat KM Maria Bintang Laut made several trips during the quarter to deliver fish from Kokonao to Timika. STTA, Franz Goetz, continued to train the local crew selected to operate the boat. In addition, work is underway to install specially fitted fiberglass tanks for fish and ice transport, as well as modifying the gear box to increase the speed of the boat.

### **Soft Shell Crab Production**

During July, PADA and Maria Bintang Laut Cooperative provided two days of training on technical procedures for the women owned soft shell crab operators. The event also

provided both AMARTA and the Cooperative an idea of how many women were capable of actively participating, providing a basis to determine the quantity of tools and equipment to be provided. It was also agreed that future extension of this component will be completed by private family-based operators with marketing coordinated through the Cooperative. PADA and Mr. Alphonse of Maria Bintang Laut Cooperative will prepare a business plan, marketing arrangements, and sensitivity analysis documents for the soft shell crab business. Further socialization of the integrated activities planned for Kokonao, including the establishment of an accounting and micro-credit scheme, will take place in October 2008.

### **Papua Coffee Development**



**Sorting coffee at the Jagara processing unit**

On September 3<sup>rd</sup>, the AMARTA-PADA team met with the Provincial Head of Estate Crops in Jayapura and estate crops representatives from all regents in the highlands of Papua. The Head of Provincial Estate Crops shared his enthusiasm and interest in expanding the Arabica coffee export activities to other Arabica coffee producing regencies in the highlands of Papua. Also in attendance was a representative from the Papua Provincial Trade and Commerce Department who reported briefly on the progress of work being done to make Papua a coffee exporting zone. All of the required documents have been submitted to the

Directorate General's office in Jakarta. The first Baliem Arabica Coffee export will be conducted by an Indonesian intermediary appointed by Starbucks. This action is required to ensure the quality of the first shipment. Once Baliem Arabica Coffee is registered with the Indonesian Coffee Exporters Association, which is currently underway, it is envisioned that the Cooperative will conduct direct exports, as all necessary documentation to conduct direct exports from Papua have essentially been completed. The first container of coffee is 66% completed and PADA anticipates that it will be completed by December 2008. Landslides and other unexpected interruptions to coffee buying activities have delayed coffee procurement and processing.



**Transporting coffee from the Baliem Valley even after a landslide**

After significant success working with the government in Papua, another achievement was made when the Jayawijaya Regency Department of Estate Crops committed Rp. 100,000,000 to assist the Baliem Arabica Cooperative in paying for transportation to different villages throughout the Baliem Valley for coffee purchasing. In addition, the Department committed to provide two extension workers to help with quality control and promised to help with other administrative matters required for the export of the Arabica coffee from the town of Wamena to the port city of Jayapura.

Two major milestones were achieved this quarter as the supply line was established and three trucks are currently being used to purchase and transport coffee from collecting points throughout the Baliem Valley to the processing facility, which is producing 500kg to 1 ton of green coffee daily. Also, there is currently around 12 tons of coffee stored in the Jagara warehouse ready for export. The coffee buying increased during the quarter because more farmers have been socialized and started selling coffee only to the Cooperative. The increase in coffee purchased- and amount processed at the processing unit- is encouraging as PADA aims to hit the target of 36-tons of coffee exported before the end of March 2009. As a result of PADA's efforts, farmers are now generating income up to Rp. 1,875,000 per month per hectare of coffee where they previously received an average of only Rp. 400,000- an increase of 370%.



**Ms. Lena, a PADA beneficiary, shows off her coffee beans**

### **Moanemani**

The AMARTA-PADA project grantee, Cooperative Santo Isidorus started purchasing coffee in August in different locations throughout the Kamu Valley in Moanemani, Papua. Didimus Tebay, from the Cooperative, continues working with two extension agents, conducting village-to-village coffee quality control and assisting farmers in completing organic certification. Prices paid to farmers have risen from Rp. 5,000 to Rp. 17,500 increasing income by 250%. Samples of the coffee have been collected and will be sent to the market in November for assessment.

Coffee processing machinery was delivered and installed at a processing unit in Moanemani. Due to transportation difficulty to Moanemani the delivery of a 5-KVA generator set purchased in Timika to power the coffee processing unit has been delayed and the delivery is now planned for early October.

## **Agimuga**

During the quarter, PADA was able to complete reconditioning of the 12km supply road between Aramsolki and Kiliarma and rehabilitating the 2 km of road to the swine farm. Aramsolki Village is remotely located far away from other towns and villages. PADA designed a project to create sustainable farming, and eventually extend throughout the District of Agimuga in the Mimika Regency. Currently, the people of Aramsolki depend heavily on the market in the town of Timika for daily subsistence, including purchasing rice. To reach the town of Timika, villagers have to first travel 12km by foot to the Kiliarma Village where they then board a wooden boat and travel for 8-12 hours to Timika, depending on the condition of the water tide. PADA seeks to assist the villagers to become self sufficient by planting and producing their own rice for consumption and selling the excess to nearby villages and districts. In addition, the project will assist local groups by building a swine farm where they can raise pigs to sell in Timika.

To clear the 12km road the villagers divided themselves into three groups with each group taking responsibility for clearing approximately four km of road. By dividing the task, the groups were able to finish clearing the 12km long, 2 meter wide road, sooner than expected. The road to the swine farm, although only 2km, proved to be much more challenging since a majority of the track had become puddles of mud and at one point a huge pool had formed and cut off the road completely. After only two weeks the road was cleared and the big pool no longer existed. Instead there was a well built dry road with drainage systems on both sides made of wood and stones.



**12km compacted road during rehabilitation**

Also completed during the quarter was the rehabilitation of the rice processing building as rice planting began in September. Two hand tractors for rice cultivation were shipped to Agimuga and are being used by local farmers, while AMARTA grantee CV Lion Lestari kindly donated two rice hullers to Aramsolki Village that have been installed and are fully operational. AMARTA also completed the purchase of a medium sized John Deere model four wheel drive farm tractor, which was shipped in September. PADA also continued ongoing efforts with the Catholic Church in Agimuga and Timika to manage production and marketing of rice and pigs. The rice hulling equipment has been installed and farmers in Agimuga are now able to process rice that has been sitting idle waiting for processing since the 2005 and 2006 season. Already, two tons of rice has been processed using the new equipment and has been added to the local food supply. Each farmer is now saving approximately 50% of his monthly living costs through

the machinery installed by PADA. Previously, villagers were forced to purchase imported rice at Rp. 350,000 per 25 kg bag, where today they can produce 25kg of rice for only Rp. 80,000.



**PADA Coordinator, Kornel Gardner, provides rice huller training to Aramsolki women...**



**..... While the men receive training on operating the new small tractor**

## AMARTA Indicators for Quarter 4 (July - September 2008)

INDICATORS	Aqua culture	Natural Rubber	Cocoa	Coffee	Beef Livestock	Vegetables	Tropical Fruit & Flowers	Biofuels	Seaweed	RACA	Total	
Number of additional hectares under improved technologies or management practices as a result of USG assistance	2007	-	-	4,215	-	-	-	1,137	-	-	-	5,352
	Q4 2008	-	143	4,251	1,300	-	55	723	-	-	-	6,472
	2007 - 2008	-	535	20,803	7,200	-	665	2,161	40	-	-	31,404
	LOP Target	-	500	20,100	10,313	-	550	1,630	60	-	-	33,153
Number of additional units of animal, fish and other aquaculture products under improved technologies or management practices as a result of USG assistance	2007	-	-	-	-	-	-	-	-	-	-	-
	Q4 2008	2,340	-	-	-	-	-	-	-	2,134	-	4,474
	2007 - 2008	14,140	-	-	-	300	-	-	-	2,203	-	16,643
	LOP Target	120,330	-	-	-	300	-	-	-	300	-	120,930
Number of producer organizations, water user associations, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	2007	-	-	150	-	-	-	9	-	-	-	159
	Q4 2008	-	-	390	11	-	31	1	-	-	19	452
	2007 - 2008	5	18	900	301	16	120	70	2	15	110	1,557
	LOP Target	29	38	910	247	6	97	64	2	24	60	1,477
Number of agriculture related firms benefiting directly from USG supported interventions	2007	-	-	3	-	-	-	4	-	-	-	7
	Q4 2008	3	9	10	5	-	9	7	-	1	-	44
	2007 - 2008	11	10	13	16	2	16	10	1	2	24	105
	LOP Target	61	5	4	20	3	49	4	1	2	5	154
Number of individuals (men and women) who have received USG supported short-term agriculture sector productivity training	2007	-	-	10,100	-	-	957	579	-	-	-	11,636
	Q4 2008	157	207	10,101	560	-	168	996	-	46	86	12,321
	2007 - 2008	322	445	31,459	7,500	275	915	2,512	718	148	994	45,288
	LOP Target	920	595	32,000	10,100	300	3,162	1,610	2,900	600	900	53,087
Percent change in value of international exports of targeted agricultural commodities as a result of USG assistance	2007	-	-	-	-	-	-	-	-	-	-	-
	Q4 2008	-	-	84	100	-	-	-	-	100	-	95
	2007 - 2008	-	-	119	100	-	-	-	-	100	-	106
	LOP Target	46	10	110	105	-	30	20	-	50	-	53
Percent change in value of purchases from smallholders of targeted commodities as a result of USG assistance	2007	-	-	-	-	-	-	-	-	-	-	-
	Q4 2008	100	-	75	100	-	-	-	-	100	-	94
	2007 - 2008	100	-	89	100	-	-	87	-	100	-	95
	LOP Target	83	50	42	47	-	42	90	-	100	-	65
Number of new technologies or management practices made available for transfer as a result of USG assistance	2007	-	-	5	-	-	-	5	-	-	-	10
	Q4 2008	3	2	7	3	-	5	12	-	1	-	33
	2007 - 2008	24	14	23	13	1	23	28	3	5	-	134
	LOP Target	25	15	24	14	1	24	29	3	5	-	140
Number of additional surveillance and/or control systems in place for agricultural threats	2007	-	-	-	-	-	-	-	-	-	-	-
	Q4 2008	4	-	-	-	-	-	-	-	1	-	5
	2007 - 2008	6	2	1	3	1	-	1	-	1	-	15
	LOP Target	6	2	1	3	1	3	2	1	1	-	20
Number of public-private partnerships formed as a result of USG assistance.	2007	-	-	2	2	1	-	-	-	-	4	9
	Q4 2008	-	1	-	-	-	-	-	-	-	-	1
	2007 - 2008	2	3	4	4	1	2	1	1	-	-	18
	LOP Target	3	3	4	3	1	3	1	1	-	1	20