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# Agribusiness Market and Support Activity (AMARTA)

Year Three Work Plan:  
October 1, 2008 – September 28, 2009

September 2008

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## Acronyms

|          |   |
|----------|---|
| AMARTA   | Agribusiness Market and Support Activity                              |
| APHIS    | Animal Plant Health Inspection Services (Agency of USDA)              |
| APRINDO  | Asosiasi Peritel Indonesia (Indonesia Retail Association)             |
| ASGITA   | Asosiasi Agribisnis dan Wisata (Agribusiness and Tourism Association) |
| ASKA     | AMARTA Sulawesi Kakao Alliance (South, West, Southeast Sulawesi)      |
| ASKA     | AMARTA Sulawesi Kakao Alliance  |
| BAP      | Best Agricultural Practices   |
| BBI      | Balai Benih Induk (Department of Agriculture North Sumatera)          |
| BPTP     | Indonesian Institute for Agriculture Technology and Dissemination     |
| BSKP     | PT Bridgestone Kalimantan Plantations                                 |
| BTF      | Big Tree Farms (PT. Bening Bali Private Sector Partner)               |
| CCPU     | Central Cocoa Processing Unit   |
| CPB      | Cocoa Pod Borer   |
| DG       | Directorate General   |
| DISBUN   | Department of Estate Crops (Provincial and District levels)           |
| FAQ      | Fair Average Quality (cocoa)  |
| FDA      | US Food and Drug Administration                                       |
| GAPKINDO | Rubber Association of Indonesia                                       |
| GHP      | Good Handling Practices   |
| GMP      | Good Manufacturing Practices  |
| ICASEPS  | Indonesian Center for Agriculture Socio Economic Policy Studies       |
| ICCRI    | Indonesian Coffee and Cocoa Research Institute                        |
| IPM      | Integrated Pest Management  |
| IVEGRI   | Indonesian Vegetable Research Institute                               |
| KTNA     | KTNA – North Sumatera (Farmer Group of North Sumatera)                |
| MJI      | Masyarakat Jeruk Indonesia/ Indonesia Citrus Society                  |
| MBMC     | Mitra Bina Mandiri  |
| MoU      | Memorandum of Understanding   |
| NACA     | Network of Aquaculture Centers in Asia-Pacific                        |
| NCBA     | National Cooperative Business Association                             |
| NTT      | Nusa Tenggara Timur   |
| PADA     | Papua Agriculture Development Alliance                                |
| PCR      | Polymerase Chain Reaction   |

|        |  |
|--------|--|
| PT PAS | PT Putra Agro Sejati                                 |
| PT SSN | PT Sewu Segara Nusantara                             |
| PSP3   | Center for Development Studies                       |
| RACA   | Regional Agribusiness Competitiveness Alliances      |
| RPO    | Rural Producer Organization                          |
| SKA    | Sustainindonesia Kakao Alliance (Bali Cocoa Program) |
| SOP    | Standard Operating Procedures                        |
| STA    | Sub Terminal Agribusiness                            |
| STTA   | Short-term Technical Assistance                      |
| USAID  | United States Agency for International Development   |
| USDA   | United States Department of Agriculture              |
| USU    | North Sumatra University                             |
| VCD    | Video Compact Disc                                   |

## I. INTRODUCTION

The management of the Agribusiness Market and Support Activity (AMARTA) is pleased to submit to USAID – Indonesia the Third Year Annual Work Plan for the period October 1, 2008 to September 28, 2009, as revised on February 4, 2009 in response to a Notice of Change from USAID dated December 4, 2008.

This Work Plan builds on the lessons learned and accomplishments of the Year One and Two activities, which will continue to be reported in AMARTA's Quarterly Reports.

We are pleased to report that a considerable number of accomplishments were achieved and substantive positive impact produced for farmers and other agribusiness stakeholders during the second year to address constraints to competitiveness in the Indonesian agriculture economy. Many of the successful interventions resulted in dramatically improved yields and higher income for citrus and banana farmers in North Sumatera, while significant improvements in cocoa production in Sulawesi and Bali also resulted in higher yielding improved quality beans resulting in more income for farmers, particularly those who sold their cocoa to AMARTA's partners who pay a premium based on quality. Successes were also apparent in improved aquaculture practices in Flores and Warloka, coffee exports through various international buyers, livestock reproduction in West Timor, agriculture in Central Java, and many other initiatives. AMARTA was also successful in integrating women into virtually every activity as over 5,600 women have participated in intensive AMARTA training activities, or 16% of the total 35,000 individuals.

In addition to conducting highly successful training and technical assistance, AMARTA continued to emphasize and implement an effective policy and regulatory dialogue component addressing constraints to agribusiness in Indonesia, via implementation of Regional Agribusiness Competitiveness Alliances (RACA) activities. RACA forums have become an important tool to assist farmers, agribusiness firms, input suppliers, and other stakeholders to identify, address, and resolve important policy and regulatory issues constraining productivity, quality, access to better markets, and the sustainability of agro-enterprises. One particularly successful initiative was the creation of the Karo Horticulture Community (MHK) a community based organization established in Karo District, North Sumatera Province who submitted a proposal to the Karo District House of Representatives and Executive Board resulting in the government's commitment to asphalt two kilometers of road to a central production site for farmers in Tanjung Barus Sub-district that will be completed this year.

Another area where AMARTA focused efforts in the second year involved relationships with the various Government of Indonesia officials, institutions, agencies, and departments at the local, provincial and national level. AMARTA is proud of the relationships formed with our implementing and collaborating partners that have enabled us to reach a wider range of stakeholders as project participants and beneficiaries. One prime example of government collaboration occurred in Papua through PADA interventions: The Governor of Papua held a workshop on September 5<sup>th</sup>, 2008 to present and socialize this program in order to ensure cooperation with the numerous development projects in the region. AMARTA and PT Freeport were identified by the Governor as a model due to the outstanding progress and results achieved. He also noted to the different participating districts and international organizations that PADA provided the standard for working at the district and village level. The meeting was

followed up by a visit with the US Ambassador to Papua on September 11 who learned more about AMARTA's activities and visited the newly constructed ice factory in Kokonao.

As we move forward to Year Three, AMARTA will present in this document a detailed description of the planned activities by location, stakeholder involvement, and expected contribution to project indicators. In addition we will provide a value chain intervention timeline showing expected completion of significant steps for each activity. We hope that our work in this last year will contribute to actions resulting in sustainability of the important lessons learned during our initiative in Indonesia and the solutions to constraints in competitiveness in the chosen nine agribusiness value chains assisted.

**The following revisions will be made to the Year 3 Work Plan Draft submitted to USAID on September 15, 2008:**

1. Partnership and Policy Advocacy – Activity 1: Network and Partnership Development – a) Cease collaboration with the Directorate General of Processing and Marketing of Agricultural Products in revitalizing STA and Cool Storage facilities due to inadequate implementation of the assistance delivered to date; b) Cease further assistance to the formation and strengthening of the National Horticulture Board due to inadequate private sector leadership for formation of the proposed Board; c) cease formalization of Working Agreement with Gapkindo in Southern and Western Kalimantan due to a change in type of activity resulting in better collaboration with Bridgestone, ICCRI, and local governments agencies.
2. Activity 2: RACA Establishment and Activation – Activity Description a) Cease assistance to the National Horticulture Board for the reasons stated in No. 1 above.
3. Activity 5: Public Awareness – Task 3: Public Expose (National and Regional Conferences/Workshops as well as exhibitions). The majority of this activity will be ceased as we have received very minimum response by government agencies to adopt and implement our value chain pilot project demonstrations on a wider basis. Since activities will be wound up in 2009, there is no need to participate in exhibitions. We will, however, continue to work with ICASEPS, PSP3 and those government agencies willing to work on the implementation of extension activities pilot projects. Task 4: International Conferences/Conferences. We propose to maintain only the 2009 Specialty Coffee Association of America Annual Conference and Exhibition for the reasons stated, and to involve the Ministry of Agriculture, Directorate General of Processing and Marketing of Agricultural Products, Directorate of International Marketing Promotion to build their capacity in planning and participating in USA agricultural commodity tradeshow.

#### **4. AMARTA Value Chain Interventions by Region**

We will delete or modify the following activities at the request of USAID per their Notice of Change to DAI on December 5, 2008:

**Value Chain Interventions - Medan Region:**

Activity 4: Training and Campaigning for Safe and Judicious Use of Pesticides – N. Sumatera. This activity has been ceased.

Activity 5: Improve Production of Cut Flowers (Chrysanthemum) – Berastagi. This activity was ceased in December 2008.

Activity 10: Improving Natural Rubber Production – Bangka Belitung and N. Sumatera Provinces. The Bangka Belitung activity will be ceased and the N. Sumatera activity will be completed by the end of January, 2009.

Activity 11: Conduct Coffee Cherry Borer (Broca) Trap Demonstrations and Training – Sidikalang, N. Sumatera and Takengon – Aceh. This activity was finalized in December, 2008.

**Value Chain Interventions – Bali Region**

Activity 5: Grouper Fingerlings Production Improvement – Flores. This activity will be ceased in February 2009.

Activity 6: Grouper Grow Out Pilot Program in Fishing Village – Flores. This activity will be ceased in February 2009.

**Value Chain Interventions – Makassar Region**

Activity 2: Natural Rubber in South and West Kalimantan. This activity was ceased January 31, 2009.

Activity 3: AMARTA Gorontalo Seaweed Activity (Kwandang/Anggrek Bay – Pantura District and Lemito / Popayato - Pohuwato District). This activity was ceased on January 31, 2009.

Activity 4: Conduct Coffee Cherry Borer (Broca) Trap Demonstrations and Training Program in Sulawesi – Toraja. This activity was completed in December 2008.

As a result of the proposed changes to the revised work plan, this work plan envisages a reduction from 40 activities in 15 provinces of Indonesia, to 28 activities in 12 provinces from Aceh to Papua, improving rural livelihoods of farmers, fishermen, and other stakeholders by focusing on increasing agriculture productivity, improved product quality, enhanced access to new and better markets, and an improved enabling environment, for **“Helping Indonesia to Grow”**.

## Year Three Activity Plans

### Partnerships and Policy Advocacy

#### Activity 1: Network and Partnership Development

**Rationale:** Communication and coordination with implementing partner institutions of the Government of Indonesia is required to ensure sustainability of activities after the AMARTA program ends. In addition, replication of successful pilot initiatives requires strong government support and dissemination. The development of partnerships between private sector entities, government institutions and other public and private institutions is needed in order to facilitate pooling of resources and skills to increase competitiveness.

**Objective:** Institutionalize projects and inform the implementing partner institutions of AMARTA's progress and achievements. Facilitate cooperation between AMARTA and private companies, government institutions as well as other development organizations that have a similar mission and complementary resources. Promotion of partnerships and policy advocacy is also an important factor for the success of the Regional Agribusiness Competitiveness Alliances (RACAs). The technical lead for this activity is Pantjar Simatupang.

#### Activity Description:

AMARTA will:

- Conduct project coordination with Bappenas and implementing partner Directorate Generals of Estate Crops, Horticulture, Processing and Marketing of Agricultural Products, and Fishery Aquaculture:
  - Consultation on year two achievement and year three plan
  - Field visits
- Consultation on mid-year progress
- Collaborate with Directorate General of Processing and Marketing of Agricultural Products in revitalizing STA and Cool Storage Facilities by providing training and technical assistance in construction design and layout
- Collaborate with DG Horticulture in activating the National Horticulture Board
- Formalize Working Agreements with the Governments of Karo, Tabanan and Jembrana Regencies for collaboration with local government extensions and research personnel
- Formalize Working Agreement with the GAPKINDO Southern and Western Kalimantan Region for provision of technical assistance for rubber nurseries
- Participate in workshops, seminars, and discussions on relevant issues conducted by other institutions

### Outcomes Year Three:

| Indicator   | Target<br>September 2009 |
|---|--------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                      |
| Indicator 2: Number of organizations and associations assisted            | N/A                      |
| Indicator 3: Number of agriculture related firms assisted                 | N/A                      |
| Indicator 4: Number of individuals receiving productivity training        | N/A                      |
| Indicator 5: Percent change in value of exports                           | N/A                      |
| Indicator 6: Percent change in purchases from smallholders                | N/A                      |
| Indicator 9: Number of Public-Private Partnerships formed                 | 4                        |

Note: Indicators resulting from the Activity 1: Network and Partnership Development will be reported under each of the value chain activities.

### Activity 2: RACA Establishment and Activation

**Rationale:** The implementation of value chain interventions and other project activities to improve competitiveness involves the whole range of value chain participants, from input suppliers to banks to food safety specialists to exporters, as well as institutional and policy and regulatory issues related to productivity enhancement. The AMARTA format for coordinating these essential relationships is the establishment of Regional Agribusiness Competitive Alliances (RACAs).

**Objective:** To establish additional RACAs as an instrument for creating an enabling business environment and removing policy and regulatory-related constraints to Indonesian agribusiness competitiveness. The technical leads for this activity are Pantjar Simatupang for Jakarta, Bharaty for Sumatera, Sjaiful Bahri for West Java and Gede Sedana for Bali, in collaboration with Pantjar Simatupang.

### Activity Description:

AMARTA will:

- Help empower the following organizations to accomplish effective policy and regulatory reform dialogue and advocacy capabilities: Karo Horticulture Community, Deli Serdang Barangan Banana Community, Tabanan Cocoa Community
- Help activate the National Horticulture Board
- Help establish and continue support for the following organizations: Cocoa RACA in Jembrana Regency, aquaculture RACA in Aceh, horticulture RACA in West Java.

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                              |
| Indicator 2: Number of organizations and associations assisted            | 5                                |
| Indicator 3: Number of agriculture related firms assisted                 | N/A                              |
| Indicator 4: Number of individuals receiving productivity training        | 2000                             |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | N/A                              |

**Activity 3: Policy and Regulatory Assessment**

**Rationale:** Policy and regulatory assessments are needed in order to identify constraints to competitiveness and growth, provide informed advocacy activities for an improved enabling environment, and to remove constraints to competitiveness. The assessments will be conducted based on outcomes of RACA dialogues to address pressing issues and constraints.

**Objective:** Analyze policy and regulatory issues of greatest concern to farmers and agribusiness enterprises for action steps by the RACAs and for public awareness purposes. The technical lead of this activity is Pantjar Simatupang.

**Activity Description:**

AMARTA will fund at least six assessments, including the following:

- Workshop on ICASEPS and PSP3 assessments conducted in 2008
- Policy and regulatory issues in the horticulture sector in North Sumatera by the Center for Development Studies (PSP3).
- Emerging issues as identified in the RACA dialogues.

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                              |
| Indicator 2: Number of organizations and associations assisted            | N/A                              |
| Indicator 3: Number of agriculture related firms assisted                 | N/A                              |

|  |     |
|--|-----|
| Indicator 4: Number of individuals receiving productivity training | N/A |
| Indicator 5: Percent change in value of exports                    | N/A |
| Indicator 6: Percent change in purchases from smallholders         | N/A |
| Indicator 9: Number of Public-Private Partnerships formed          | N/A |

**Activity 4: Support to the Specialty Coffee Association of Indonesia to improve the quality of Indonesia’s Arabica coffee and promote increased exports.**

*Rationale:* The Specialty Coffee Association of Indonesia (SCAI) is a national trade association with 58 members exporting 50% of Indonesia’s Arabica coffee worth \$100 million. SCAI members include Arabica coffee exporters, cooperatives of coffee growers and coffee retailers, from all the coffee growing areas of Indonesia. The seven cooperative members include more than 8,000 farmers. SCAI members export 30% of Indonesia’s Arabica coffee, worth an estimated \$71 million annually.

AMARTA is currently providing technical and financial support to SCAI. Continued support to SCAI will allow the organization address two key constraints in the industry: perceptions of poor quality among buyers due to blending of origins and high defect levels and lack of a standardized system to measure coffee quality. The technical leads for this activity are Dieter Fischer and Edi Susmadi (Jakarta).

**Objectives:** To train members of farmers’ associations to reduce defects and increase production. To begin the process of developing Geographic Indications for Indonesia’s Arabica coffee origins, by mapping the origins and creating “type” samples of coffee from each origin. To promote Indonesia’s Arabica coffees through various media, visits by coffee buyers and trade shows. To establish the Q-Grading system, which has become the worldwide standard for measuring specialty coffee quality.

**Activity Description:**

AMARTA will work through SCAI to:

- Develop maps all production areas for Indonesia’s Arabica coffee. These maps will be developed by stakeholders and could form the basis for the establishment of Geographic Indications (GI).
- Produce type samples of coffee for each origin, to educate the marketplace. It is expected that more than 100 coffee importers and roasters in the U.S. would order these samples
- Provide farmers with productivity and quality training
- Promote Indonesia’s Arabica coffee at trade shows, through the development of promotional materials and support to coffee buyers visiting Indonesia
- Work with the Coffee Quality Institute to bring the Q-Grading system to Indonesia by training and certifying coffee cuppers who work for SCAI members.
- Identify funding sources to insure SCAI can maintain its operations beyond the end of AMARTA. This will include administration of the Q-Grading system.

### Outcomes Year Three:

| Indicator   | Target<br>September<br>2009 |
|---|-----------------------------|
| Indicator 1: Additional hectares under improved technologies or practices |                             |
| Indicator 2: Number of organizations and associations assisted            | 10                          |
| Indicator 3: Number of agriculture related firms assisted                 | 60                          |
| Indicator 4: Number of individuals receiving productivity training        | 1,000                       |
| Indicator 5: Percent change in value of exports                           | 5%                          |
| Indicator 6: Percent change in purchases from smallholders                | 5%                          |

### Activity 5: Public Awareness

#### **Task 1: Media Campaign (Activity will be minimized at request of USAID.)**

**Rationale:** A media campaign to disseminate the successes of AMARTA activities is necessary in order to create awareness of and promote a common message focused on the benefits of improved agribusiness competitiveness.

**Objectives:** Utilize local, regional, and national resources to increase public and private awareness and the benefits of improved competitiveness, stimulate demand for AMARTA services, build the credibility necessary for effective public-private partnerships, and promote a common message.

#### **Activity Details:**

In year three the main focus of activities will strengthen public outreach efforts and expand the scope and type of awareness programs provided to the public. Activities will include:

- Media campaigns and press releases to advocate policy actions of concern to RACA stakeholders, release findings from AMARTA-sponsored policy and regulatory assessments, and sharing AMARTA success stories focusing on pilot projects implemented, new technologies developed and introduced, new markets established, and new agro-enterprises established.
- Focused attention on ensuring that Government institutions and international agencies are aware of successful initiatives.
- Engaging local press to interview beneficiaries and farmers for increased media exposure, with an emphasis on AMARTA's training films as educational tools.
- Distributing fact sheets, monthly newsletters, brochures, posters, booklets and other printed and visual materials- such as DVDs and VCDs- for wide dissemination to the press, government representatives, AMARTA partners,

stakeholders, NGOs, Universities, other donors, and an international and domestic audience.

**Task 2: Maximize the use of the AMARTA Website**

**Rationale:** The AMARTA website: [www.AMARTA.net](http://www.AMARTA.net) is currently on-line in two languages. The Internet is an excellent medium for expanding public awareness of AMARTA and improving communication and outreach to maximize impact of the public advocacy, awareness, and communication component, in order to deliver a concise and consistent message.

**Objective:** Increase awareness of AMARTA activities and objectives through establishing and promoting of a project-dedicated website, [www.AMARTA.net](http://www.AMARTA.net).

**Activity Description:**

AMARTA will:

- Continue to update the contents of website, including upcoming events, recent activities conducted, and success stories.
- Respond to queries regarding the content of the website and stimulate knowledge sharing between agribusiness stakeholders.
- Provide links to participating partner organizations and associations, as well as identify and promote market opportunities.

**Task 3: Public Expose (National and Regional Conferences/Workshops as well as exhibitions)**

**Rationale:** The public expose will create a targeted, regional based opportunity to invite government officials and stakeholders to learn about successful initiatives and how to support pilot projects in order to sustain positive impact.

**Objective:** Provide a focused event to inform government stakeholders of successful initiatives and engage them in considering replication through their agencies.

**Activity Description:**

AMARTA will:

- Organize additional workshops on policy and regulatory assessments in collaboration with the Indonesian Center for Agriculture Socio Economic Studies (ICASEPS) and the Center for Development Studies (PSP3).
- Support workshops in collaboration with partners, such as the Directorate Generals of Agricultural Processing and Marketing on STA, Horticulture on floriculture development, and Estate Crops on implementation of extension services.
- Design exhibitions in Makassar, Jakarta, Denpasar, and Medan for relevant value chains to promote activities, educate a wider audience on new technology, and expand networks.

- Conduct public exposes for an open dialogue between government officials, stakeholders, and farmers to promote replication of pilot projects.

#### **Task 4: International Conferences/Workshops**

**Rationale:** International conferences and workshops are an effective way to increase AMARTA's exporting objectives and increase Indonesia's profile among export markets.

**Objective:** Highlight value chains for export.

#### **Activity Description:**

In Year three activities will include:

- 2009 Specialty Coffee Association of America Annual Conference and Exhibition in Atlanta, US on April. Continuing the last participation in May 2008 in Minnesota, AMARTA sponsored a booth for the Specialty Coffee Association of Indonesia to promote marketing of Indonesia Specialty Arabica Coffee. **(Activity deleted at request of USAID.)**
- World Cocoa Foundation Workshop in Hamburg, Germany in October, 2008 providing AMARTA the capacity to inform the broader international cocoa community of the range of innovations that AMARTA is currently executing in both the ASKA and SKA programs. Completed as scheduled.

### **AMARTA Value Chain Interventions by Region**

#### **Value Chain Interventions – Medan Region**

##### **Activity I: Improve Banana Productivity – Deli Serdang, North Sumatera**

**Rationale:** Fresh banana demand continued to grow for Lakatan Bananas, known as Pisang Barangan, one of Indonesia's favorite varieties. AMARTA's efforts were focused on this activity in North Sumatera during year two with outstanding results. In conjunction with PT Sewu Segar Nusantara (PT SNN), who holds a 30% share of the Indonesian retail banana market, AMARTA supported farmers supplied 10,000 hands per day receiving a superior price. Continued technical assistance and training for 15 farmer's groups will help support and stabilize the supply and increase farmer's incomes further, and improve chances of long-term production and marketing sustainability with continued assistance from AMARTA. The technical lead for this activity is Erik Meliala.

**Objectives:** Increase banana productivity by 70% by continuing to expand the double row planting method, improved cultivation methods, and post harvest handling practices for improved quality, as well as accessing additional markets where appropriate.

#### **Activity Description:**

AMARTA will:

- Continue maintaining 3 hectares of demonstration plots in 3 sub-districts of STM Hilir to serve as models for improved post-harvest technology and handling.

STTA will continue to provide assistance in production and post-harvest technology, packaging, transportation, distribution, and sales.

- Continue demonstrations to farmers using good agricultural practices including pruning, removing buds and false hands, de-handing, de-flowering, de-leafing, and protecting the fruit from damage caused by friction from leaves and other mechanical agents.
- Implement the newly devised system for moving de-handed bananas from the field to the packing shed using stacking baskets to decrease bruising.
- Train and mentor the Banana Cooperation Mandiri (Koperasi Serba Usaha Pisang Mandiri) in improving management skills and overall capacity building.
- Continue commercial shipments with PT Sewu Segar Nusantara and other banana distributors to resolve logistical problems and other bottlenecks with the objective to identify problems during transport of bananas by ship and trucks, before further solutions are determined.
- More vigorously involve local agriculture agencies and institutions in participation of training events, to prepare them to continue activities post AMARTA.
- Provide technical assistance and funding for an additional banana packing shed in another strategic location to improve the supply of better quality bananas to the marketplace.

**Implementing Partners:**

- PT Sewu Segar Nusantara
- Koperasi Serba Usaha Pisang Mandiri (Mambar Sembiring and Josep Barus)
- Extension agents from Agricultural service offices of Deli Serdang.
- Researchers from the BPTP
- University of North Sumatra

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 50                               |
| Indicator 2: Number of organizations and associations assisted            | 40                               |
| Indicator 3: Number of agriculture related firms assisted                 | 1                                |
| Indicator 4: Number of individuals receiving productivity training        | 900                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | 50                               |

## **Activity 2: Improve Citrus Productivity and Post-harvest Handling – Berastagi, Sumatera**

**Rationale:** Several supermarkets have used the brand name “Jeruk Medan” or Medan Citrus, but market penetration of citrus from the Medan area has been low due to stiff competition from Chinese imports. Chinese citrus prices are similar to local production, however the quality is better. Many farmers in North Sumatera lack knowledge of proper production methods, including use of pesticides and fertilizer, and tree pruning and thinning. These factors contribute to quality problems. In addition, because farmers are concerned more with quantity rather than quality of produce, the quality of fruit is poor and sorting and grading are not common practices. This is a major barrier to competition in the Indonesian modern retail market. Training is necessary to teach improved production, post-harvest handling, and marketing practices to improve competitiveness. The technical lead for this activity is Erik Meliala.

**Objectives:** Improve productivity with technical assistance and training on Standard Operating Procedures (SOPs) for citrus to continue ongoing efforts to reduce production costs by focusing on pest control, pruning, fertilizing, thinning, and post harvest handling.

### **Activity Description:**

AMARTA will:

- Provide training of trainers (ToT) for each target village to disseminate training to farmer’s groups on improving soil condition and management of soil fertility, using dolomite and fertilizer, identification and control of pests and diseases. The training will combine class discussions and field demonstrations.
- Demonstrate better citrus growing practices in demonstration plots in each village as a learning tool for farmer’s groups. Select two people in each group to record the implementation of new production methods.
- Mobilize participants in conjunction with the field extension service and village farmer group chiefs; arrange the venue and field trip demonstrations.

### **Implementing Partners:**

- MJI ( Masyarakat Jeruk Indonesia/ Indonesia Citrus Society) (Usaha Barus, Paham Girsang, Kardi Ginting dan Berlin Kemit)
- Karo Agriculture Department
- Natal Agriculture Department
- Simalungen Agriculture Department
- Dairi Agriculture Department
- North Tapanuli Agriculture Department
- Pak Pak Agriculture Department
- Padang Lawas Agriculture Department

- PT Sewu Segar Nusantara

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 2,000                            |
| Indicator 2: Number of organizations and associations assisted            | 20                               |
| Indicator 3: Number of agriculture related firms assisted                 | TBD                              |
| Indicator 4: Number of individuals receiving productivity training        | 8,000                            |
| Indicator 5: Percent change in value of exports                           | NA                               |
| Indicator 6: Percent change in purchases from smallholders                | 20%                              |

**Activity 3: Improve Production and Marketing of Vegetables – Berastagi**

**Rationale:** One of the constraints that continue to hamper market access for many traditional smallholder farmers is the lack of proper post-harvest handling techniques which results in low quality produce that is not desirable in domestic or international markets. AMARTA has been providing training in post-harvest handling to improve the quality of produce and enabled farmers to access and become competitive in the Indonesian modern retail market. Carrot and broccoli are crops with potential markets in Indonesia as well as Singapore, Taiwan and Japan. Continuing to build on earlier assistance improving post-harvest handling techniques will help farmers to further penetrate these markets. The technical lead for this activity is Erik Meliala.

**Objectives:** Improve quality and quantity of vegetable production in Berastagi through training in best agricultural practices and post-harvest handling techniques. Increase PT Hortijaya sales in fresh carrot and broccoli for the retail market in Medan and export markets in Taiwan, Malaysia and Singapore. Provide farmers with further skills to increase revenues from improved quality and quantity of vegetables.

**Description:**

AMARTA will:

- Continue to mobilize carrot and broccoli farmers in coordination with farmer's group leaders and government extension staff to conduct field training in best agricultural practices and post harvest handling with field staff from PT Hortijaya.
- Demonstrate carrot and broccoli field trials with farmer's groups and PT. Hortijaya using better seeds provided by AMARTA of better varieties adaptable to local conditions.
- Work with PT Hortijaya to introduce products through several export distributors and conduct trial shipments in refrigerated containers.

**Implementing Partners:**

- PT Hortijaya (Sunario Chan)
- Farmer Group in Berastagi area
- Karo Agriculture Department/Government field extension (Ir. Sidharta Pinem)

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 50                               |
| Indicator 2: Number of organizations and associations assisted            | 5                                |
| Indicator 3: Number of agriculture related firms assisted                 | 5                                |
| Indicator 4: Number of individuals receiving productivity training        | 100                              |
| Indicator 5: Percent change in value of exports                           | 30%                              |
| Indicator 6: Percent change in purchases from smallholders                | 30%                              |

**Activity 4: Training and Campaigning for Safe and Judicious use of Pesticides– North Sumatera (Activity deleted at request of USAID.)**

**Rationale:** Karo Regency is the third largest volume producer of horticulture after West and Central Java Provinces, and 93% of the population works in agriculture. Unfortunately, exports have declined in the last decade due to high levels of pesticide residue on produce as a result of improper pesticide application. The improper use of pesticides increases production costs, making producers less competitive, and also makes produce undesirable for the international market, due to health concerns.

AMARTA's assistance in year two illustrated that most farmers lack adequate knowledge of proper pesticide use and rely on guidance from input suppliers who are not usually qualified to provide technical assistance and frequently espouse excessive use of chemicals. AMARTA's SJUP (Safe and Judicious Use of Pesticide) training focused on a combination of cultural, biological and chemical measures has proven to be beneficial. The technical lead for this activity is Erik Meliala.

**Objectives:** Increase new participating farmer's awareness regarding proper pesticide use. Demonstrate to 30 new villages how SJUP can reduce production costs and improve quality. Reduce overuse of pesticides and increase use of SJUP techniques to lower production costs and improve quality of production. Improve access to local and international markets through reduced pesticide residue levels.

**Activity Description:**

AMARTA will:

- Conduct a baseline survey of field conditions in conjunction with the government extension service for the new participants.
- Conduct training of trainers (ToT) for farmers, government plant protection service, and agrichemical company staff.
- Training 600 Farmers in Karo highland and Simalungen, principally the sub districts producing horticulture products.

**Implementing Partners:**

- Crop Life Indonesia
- Agriculture research center / Badan Pengembangan Teknologi Pertanian
- Karo Agriculture Department
- North Sumatera plants protection service

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 250                              |
| Indicator 2: Number of organizations and associations assisted            | 6                                |
| Indicator 3: Number of agriculture related firms assisted                 | 4                                |
| Indicator 4: Number of individuals receiving productivity training        | 600                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | 30%                              |

**Activity 5: Improve Production of Cut Flowers (Chrysanthemum) - Berastagi**  
**(Activity deleted at request of USAID.)**

**Rationale:** AMARTA has been working with local farmers in order to enhance Indonesia's competitive opportunity in the production and marketing of high value flower products to local, regional, national, and international markets, due to low cost of labor and land, and favorable climatic conditions as compared to Singapore and Malaysia. Further efforts will be conducted in cultivating chrysanthemums and other floriculture activities in Berastagi. The technical lead for this activity is Erik Meliala.

**Objectives:** Improve the quality and quantity of production of cut flowers in Berastagi by providing technical assistance and training. Improve extension services by facilitating training for field extension agents and farmers regarding disease diagnosis. Promote the

Berastagi highland area as a leading cut flower center in Indonesia, with Raya Village as a center for cut flower production in North Sumatera.

**Activity Description:**

AMARTA will:

- Continue demonstration techniques at the completed greenhouse in Raya Village to propagate new flower varieties.
- Design and deliver a training program for best agricultural practices including cultivation techniques, disease diagnosis, marketing, post harvest handling, and packing. Training will be offered to both farmers and extension agents.
- Assist in procuring improved seed varieties for the nursery and greenhouse from Java and other areas.
- Assist in improving marketing of cut flowers, including coordination with the district government of Berastagi to print promotional materials, and promote the wholesale market to local and regional customers.

**Implementing Partners:**

- Departments of Agriculture in Medan City and Berastagi
- KTNA – North Sumatera (Farmer Group of North Sumatera)
- PT. MJ Flora (Benny Tjia)
- Raya flower’s farmers group (Ternalem Ginting)

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 30                               |
| Indicator 2: Number of organizations and associations assisted            | 4                                |
| Indicator 3: Number of agriculture related firms assisted                 | 3                                |
| Indicator 4: Number of individuals receiving productivity training        | 300                              |
| Indicator 5: Percent change in value of exports                           | NA                               |
| Indicator 6: Percent change in purchases from smallholders                | 20%                              |

**Activity 6: Improving Productivity, Quality, and Marketing of Gayo Mt. Coffee in Aceh**

**Rationale:** Demand for specialty Gayo coffee from Aceh is very high, but providing a consistently high quality product to buyers is a major problem faced by the Gayo

Mountain Coffee Growers Cooperative members, located in the Takengon, Bener Meriah Kabupaten. There is a significant opportunity for a private entity to develop the Gayo coffee product and organize Fair Trade and Organic certification of local farmers to fulfill international buyer requirements for Fair Trade and Organic coffee, and enable producers to obtain premiums paid by international buyers for those types of coffee. The technical leads for this activity are Dieter Fischer and Edi Susmadi (Jakarta).

**Objectives:** To strengthen and empower the Gayo Mountain Coffee Growers Cooperative with coordinated marketing and technical support by Gajah Mt. Coffee Company, to become Fair Trade and Organic certified in order to receive premiums paid by international buyers.

**Activity Description:**

AMARTA will:

- Assist the Gajah Mountain Coffee Company and Gayo Mountain Coffee Growers Cooperative to achieve organic and fair trade certification. This process is underway, and will be completed at the end of 2008.
- Monitor purchases of coffee from the cooperative and exports of coffee by Gajah Mountain Coffee Company.

**Implementing Partners:**

- PT. Gajah Mountain Coffee Company
- Gayo Mountain Coffee Growers Cooperative, including 36 farmer groups.

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 2,100                            |
| Indicator 2: Number of organizations and associations assisted            | 36                               |
| Indicator 3: Number of agriculture related firms assisted                 | 4                                |
| Indicator 4: Number of individuals receiving productivity training        | 2,100                            |
| Indicator 5: Percent change in value of exports                           | 150%                             |
| Indicator 6: Percent change in purchases from smallholders                | 150%                             |

**Activity 7: RACA Intervention in the Karo Highlands Produce Industry - Berastagi**

**Rationale:** During the second year the Karo Highlands stakeholder alliance named Karo Horticulture Community accomplished notable policy advocacy results by

conducting the presentation of a white paper on Karo highland horticultural potential and constraints. The four committees formed in the Karo Horticulture community RACA which will work to further the points of policy and regulatory reform, especially at the district level. Respective committee has worked with AMARTA assistance and will continue to exert pressure at the executive and legislative levels as a paramount importance in creating the enabling environment for the competitiveness and development of horticulture in District Karo.

**Objectives:** Resolve policy and regulatory constraints affecting the productivity, quality and access to markets of Karo Highlands produce. Help train farmer groups and stakeholders to conduct policy analysis and to prepare and submit policy and regulatory changes to government officials to improve competitiveness of the sector.

**Activity Description:**

AMARTA will

- Further enhance the committee capabilities in removing the key constraints identified by the horticulture communities related to the policy advocacy agenda.
- Follow on with technical and financial assistance for the stakeholder committee formed for further activities planned.

**Implementing Partners**

- Karo Highlands Horticulture RACA Committee
- Karo Highlands District Government

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                              |
| Indicator 2: Number of organizations and associations assisted            | 25                               |
| Indicator 3: Number of agriculture related firms assisted                 |                                  |
| Indicator 4: Number of individuals receiving productivity training        | 50                               |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | N/A                              |

## **Activity 8: RACA Intervention in the Talun Kenas Banana Industry – Deli Serdang**

**Rationale:** Talun Kenas in Deli Serdang District is one of the central production areas of Barangan bananas in North Sumatera, which includes the high value and well known variety that is only produced in this area. The wide market demand regionally and nationally make these bananas attractive for farmers, however the lack of local government awareness to support the growers has created competitiveness constraints. An effective and transparent stakeholder dialogue and forum will provide a strong alliance to improve production and marketing throughout North Sumatera. The technical lead for this activity is Bharaty

**Objectives:** To remove the constraints of the banana growers at the policy and regulatory level that impacts the competitiveness and the development of banana production.

### **Activity Description:**

AMARTA will:

- Follow up the dialogue and workshop on creating an enabling environment for the competitiveness of the tropical fruit value chain in Deli Serdang District; AMARTA has already formed the stakeholder alliance to work on policy advocacy.
- Support and facilitate the committee's goals of empowering the legislative and executive level in submitting and presenting the banana community's vision and requests from the government.

### **Implementing Partners**

- Community Committee of Barangan Banana Growers, Deli Serdang
- Deli Serdang District Government
- Banana Mandiri Deli Serdang Corporation

### **Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                              |
| Indicator 2: Number of organizations and associations assisted            | 20                               |
| Indicator 3: Number of agriculture related firms assisted                 |                                  |
| Indicator 4: Number of individuals receiving productivity training        | 30                               |
| Indicator 5: Percent change in value of exports                           | N/A                              |

|  |     |
|--|-----|
| Indicator 6: Percent change in purchases from smallholders | N/A |
|--|-----|

### **Activity 9: RACA Intervention in Tiger Shrimp Production and Marketing – Bireuen, Aceh**

#### **Rationale:**

As one of the key shrimp production areas in Aceh, AMARTA has identified District Bireun for focused aid for black tiger prawn production. AMARTA will promote development of the aquaculture industry by revitalizing black tiger prawn rearing and hatchery farms, that include production of virus free and certification of shrimp fries for sustainability of the shrimp production in order to increase the aquaculture shrimp farmers' welfare in Bireun. A policy and regulatory related enabling environment is essential for the revitalization initiative. The technical lead for this activity is Bharaty

#### **Objective:**

To help establish a stakeholders alliance for advocating aquaculture business enabling environment in Bireun.

AMARTA will:

- Hold shrimp aquaculture workshop in Bireun – Aceh, as an initial dialogue forum.
- Identify and describe fishery business organizations, research and academic institutions as well as government institutions that have great interest or concern in improving the enabling environment (government policy and regulatory related) for aquaculture business development in Bireun.
- Find potential partners to establish the RACA forum.
- Shrimp club establishment and lobby power to the interrelated organization.

#### **Implementing Partners:**

- PT. Aceh Windu Lestari and NGO's
- Dept. of Fisheries, BAPPEDA, and Dist. Gov. of Bireun

#### **Outcomes Year Three:**

| Indicator    |  | Target<br>September 2009 |
|--------------|--|--------------------------|
| Indicator 1: | Additional hectares under improved technologies or practices |                          |
| Indicator 2: | Number of Organization and Association assisted              | TBD                      |
| Indicator 3: | Number of Agriculture related firms assisted                 |                          |
| Indicator 4: | Number of individuals receiving productivity                 | TBD                      |
| Indicator 5: | Percent change in value exports                              |                          |

|              |  |  |
|--------------|--|--|
| Indicator 6: | Percent change in purchase from smallholders |  |
|--------------|--|--|

**Activity 10: Improving Natural Rubber Production – Bangka Belitung and North Sumatera Provinces (Activity deleted at request of USAID.)**

**Rationale:** Indonesia is the world’s second largest supplier of natural rubber. Ninety percent of the natural rubber produced in Indonesia is done by smallholder rubber farmers. These farmers lack information on use of better planting material, better tapping practices, and improved coagulum quality due to absence of sufficient technical assistance and training programs by the government or industry. They also suffer from incorrect market information, further reducing their income levels. This activity will demonstrate best practices for a selected group of smallholder rubber farmers, which can be replicated by others in the same communities. The technical lead for this activity is Ilahang (based in Sanggau, Kalimantan).

**Objectives:**

- Establish certified nurseries for production of improved planting material at the local level which will enhance farmer access to improved rubber planting materials as well as acting as plots to demonstrate better agricultural practices.
- Train key farmers in established farmer groups and organize new groups as needed in improved rubber garden management practices, rubber tapping, post-harvest handling and understanding of quality.
- Introduce smallholder rubber training to cover technical know-how and best practices for marketing and business skills.

**Activity Description:**

AMARTA will

- Facilitate to get the bud-wood garden certification for PT Karini Utama nursery and Berkah Nursery at Bangka Belitung Province. Total sizes of budwood gardens are 2 ha.
- Training on rubber grafting techniques to enhance the grafting knowledge of farmers to avail of better planting material. This training will cover 50 farmers.
- Provide training on latex processing, quality and marketing to improve the quality of raw materials such as slab, sheet or lump with the recommended coagulant, and to enhance the farmers’ knowledge of how to calculate the Dry Rubber Content (DRC). 200 farmers will be involved.
- Tapping technique training is to improve the quality of tapping and to reach the economic life of rubber trees of up to 25-30 years. AMARTA will provide demo plot for good practice tapping and give 150 tapping cups for 20 people. This training will collaborate with Dinas Perkebunan Province Bangka Belitung. This training will be cover around 200 farmers.

- Training on introduction to rubber disease and control methods to improve the knowledge of rubber diseases such as white root disease, dry panel tapping, Fusarium and how to control them. (100 people at Bangka and 100 people at North Sumatera)
- Establish demo plot and provide training for best rubber practices cultivation at North Sumatera. Improved variety rubber planting materials will be provided by PT Bridgestone Sumatera Estate for 40 hectares in Deli Serdang District. 80 smallholder farmers will benefit.

**Implementing Partners:**

- PT Bridgestone Sumatera Estate, Dolok Marangir, North Sumatera
- Indonesian Rubber Research Institute (IRRI) of Sembawa, S. Sumatra province
- PT Karini Utama/Mendo Sigrid Farmer Group, Bangka Belitung Province
- Dinas Perkebunan Province Bangka Belitung

**Outcomes Year Three:**

| Indicator   | Actual January 2009 |
|---|---------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 535                 |
| Indicator 2: Number of organizations and associations assisted            | 18                  |
| Indicator 3: Number of agriculture related firms assisted                 | 10                  |
| Indicator 4: Number of individuals receiving productivity training        | 445                 |
| Indicator 5: Percent change in value of exports                           | N/A                 |
| Indicator 6: Percent change in purchases from smallholders                | N/A                 |

**Activity 11: Conduct Coffee Cherry Borer (Broca) Trap Demonstration and Training - Sidikalang, N. Sumatera and Takengon - Aceh**

**Rationale:** A coffee pest known as the Coffee Cherry Borer or Broca is attacking smallholder coffee plantings in N. Sumatera and Aceh, causing loss in production and reduction in quality due to the damage to the coffee bean during development. A technology new to Indonesia, but practiced in Latin America, known as the coffee Broca trap, is available for transfer to smallholder coffee growers. Assistance is required to train farmers on the use of this technology to reduce losses in yields and quality, which reduce their incomes. The technical lead for this activity is Edi Susmadi (Jakarta).

**Objectives:** Introduce a new technology to offset biological damage to smallholder coffee plantings by the coffee cherry borer insect that can be used for organic certified Coffee Farms. Demonstrate this new technology by placing coffee Broca traps in smallholder coffee farmer fields to attract and trap the coffee borer and measure

reduction in crop damage. Train selected coffee smallholders in the use and monitoring of the Broca traps to promote wider use of this new technology. Report and publicize the results of the Broca trap demonstration to coffee farmers, urging better agricultural practices which will result in higher yields and better quality, increasing farmer incomes subsequently by 10 to 15% depending on the incidence and severity of the attacks.

**Activity Description:**

AMARTA will

- Cooperate with the Asosiasi Petani Kopi Coffee Farmers Association in Sidikalang and the Gayo Mountain Cooperative in Takengon in the collection, analysis, and dissemination of the Broca trap demonstration results
- Organize a training session for interested farmers to introduce the Broca trap technology and economical justification for its use
- Create a sustainable system to supply the traps and attractant

**Implementing Partners:**

- Asosiasi Petani Kopi (ASPEK)
- Gayo Mountain Coffee Growers Cooperative

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 20                               |
| Indicator 2: Number of organizations and associations assisted            | 2                                |
| Indicator 3: Number of agriculture related firms assisted                 | 1                                |
| Indicator 4: Number of individuals receiving productivity training        | 5,000                            |
| Indicator 5: Percent change in value of exports                           | 10 to 15%                        |
| Indicator 6: Percent change in purchases from smallholders                | 10 to 15%                        |

**Activity 12: Develop Virus-Free Brood Stock and Post-Larvae Production and Marketing Programs for the Black Tiger Prawn Industry - Bireuen, Aceh**

**Rationale:** Prior to the 2005 tsunami that seriously destroyed or affected key shrimp producing areas in Aceh, Indonesia enjoyed a reputation for the production and supply of large, flavorful prawns known as Black Tiger Prawn. Assistance is required to enable fishermen and prawn producers to recuperate their brood stock, ensure that this brood

stock is healthy, and disseminate a certified brood stock supply to producers. AMARTA will provide technical assistance, training, and financial grants to achieve the above. The technical leads for this activity will be performed by our aquaculture short-term technical consultant Franz Goetz.

**Objectives:** Rehabilitate the Aceh Tiger Prawn sub-sector by increasing the availability of certified virus-free stock which will be provided by existing hatcheries and that can be branded and promoted. Promote a new brand marketing strategy for the group of parent stock collectors and hatchery operators in Aceh. Establish initial membership group of collectors and hatchery operators. Establish Best Aquaculture Practices for the community of parent stock collectors and hatchery operators required for the right to use the brand name and certification guarantee. Establish a quarantine station with a laboratory equipped for virus control in parent stock and post larvae. Coordinate with government organizations or NGOs including GTZ, Swiss Contact, the Network of Aquaculture Centers in Asia-Pacific (NACA) and other entities to harmonize Best Aquaculture Practices for the brand name program. Establish supply contracts with international seafood importers for quality branded Black Tiger Prawn.

AMARTA formed the PT Aceh Windu Lestari, a company of 25 private shrimp growers with equal shares focusing on trade, brand advertising and certification of Aceh Black Tiger Prawn in Dec. 2007 to carry out this work, and a grant has been approved for implementation of activities commencing mid January, 2008.

**Description:**

AMARTA will

- Organize 25 prawn hatcheries in the Sigli and Bireuen areas to collect and maintain Black Tiger Prawn parent stock free from viral contamination.
- Establish a laboratory in Bireuen with Polymerase Chain Reaction (PCR) testing equipment as well as organizational support for suitable quarantine and production procedures, funded by AMARTA grant in February/March, 2008
- Restructure a hatchery to function as quarantine station for parent stock testing and certification.
- Organize training programs covering BAP principles for grow-out farmers and hatchery staff.
- Organize a promotional effort for virus-free and tested parent stock and post larvae.
- Support efforts for direct marketing from Aceh by assisting in sourcing finance for processing facilities and equipment.
- Provide one (1) full time technical person to supervise this intervention.

**Implementing Partners**

- PT Aceh Windu Lestari
- Binbiz Bireuen (a Swiss Contact project)
- Dinas Perikanan - Bireuen/ Sigli
- Associations for Hatchery Operators and Parent Stock Collectors

- NACA/IFC Program, Swiss Contact, and GTZ
- Asia Star Laboratories
- Worldfish Center

### **Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2008</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 30                               |
| Indicator 2: Number of organizations and associations assisted            | 1                                |
| Indicator 3: Number of agriculture related firms assisted                 | 50                               |
| Indicator 4: Number of individuals receiving productivity training        | 500                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | N/A                              |

### **Value Chain Interventions - Bali Region**

#### **Activity 1: Fermented Cocoa Production with Big Tree Farms - Bali**

**Rationale:** Bali cocoa producers have been constrained in the marketing of their cocoa due to government-dictated marketing systems, lack of appropriate and timely technical assistance for cocoa production issues, and inappropriate technology for fermenting cocoa. AMARTA believes that Bali cocoa has the potential to see the development of a branded high flavor, single origin fermented cocoa, as well as the opportunity for organic and fair trade certification. Resolution of these issues and opportunities can result in increased production, improved quality of cocoa produced by Bali smallholders, increased employment, higher farmer income, as well as the increased export value of Bali cocoa. The technical lead for this activity is Simon Badcock (based in Makassar) with day-to-day management oversight by Gede Sedana (based in Bali).

**Objectives:** To increase the supply of good quality wet cocoa beans to the Big Tree Farms Central Cocoa Processing Unit (CCPU) for processing into high quality fermented cocoa, so that smallholders have greater access to higher value markets. Increase cocoa farming productivity through training on production fundamentals including frequent harvesting, organic fertilization, sanitation, and pruning as well as rehabilitation/replanting. Reduce the impact of pests and disease through adoption of good on-farm production practices. Provide extension support and training in fermentation practices, post-harvest handling, and quality parameters to permit farmers to supply wet beans and fermented beans that meet the standards for international export quality fermented cocoa. In addition, to assist capacity building through workshops and trainings to farmers, improving both organizational and institutional aspects, as well as agribusiness.

### **Activity Description for the Bali SKA Cocoa Program**

AMARTA will:

- Conduct a new, additional basic training program covering best practices in cocoa cultivation, post-harvest handling, quality and fermentation in Jembrana District focusing on improved smallholder cocoa production practices as stated above for 1,000 farmers.
- Provide follow-up training on topics for 1,000 farmers in Tabanan District and 1,000 farmers in Jembrana District such as post-harvest handling, drying, fermentation, and garden rehabilitation.
- Generate and distribute training materials supporting the socialization and transfer of key concepts and skills, such as booklets, VCDs, poster, and fact sheets on topics including good cocoa cultivation, pest and disease recognition, side-grafting as a means of rehabilitation, post-harvest handling and quality, use of organic fertilizers and non-chemical pesticides, and fermentation.
- Support for improved post-harvest handling practices and improved quality through the construction of 20 solar dryers for farmers and farmer groups.
- Hold two farmer field days to allow farmers to observe and discuss various aspects of production and processing conducted in conjunction with Big Tree Farms.
- Promote and facilitate a handover strategy comprised of distributing technical materials, capacity building of local extension personnel, and continued support and collaboration with private sector partners.

### **Implementing Partners:**

- PT. Bening/Big Tree Farms will employ between 20-24 full time personnel to manage fermentation activities at the Central Cocoa Processing Unit, and will support 4 farmer-to-farmer trainers who will provide extension outreach to participating farmers.
- Provincial and Districts Estate Crops Agency, Tabanan and Jembrana.

### **Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices   | 2,000*                           |
| Indicator 2: Number of organizations and associations assisted including farmer groups of approximately 40 growers each | 80* farmer groups                |
| Indicator 3: Number of agriculture related firms assisted   | 4                                |
| Indicator 4: Number of individuals receiving productivity training  | 2,000*                           |

|  |     |
|--|-----|
| Indicator 5: Percent change in value of exports  | 50  |
| Indicator 6: Percent change in purchases from smallholders   | 40  |
| Indicator 7: Number of new technologies or management practices made available for transfer as a result of USG assistance  | 12  |
| Indicator 8: Number of additional surveillance and/or control systems in place for agricultural threats (biological and environmental) as a result of USG assistance | N/A |
| Indicator 9: Number of public-private partnership formed as a result of USG assistance   | 1   |

\* indicates that indicators will be dependent upon USAID approval and available funding – should funds be cut then targets may be modified.

## **Activity 2: Cattle Breeding Pilot Program – (West Timor, Kupang)**

**Rationale:** The problems faced by the beef cattle industry in Indonesia, specifically in Nusa Tenggara Timur (NTT), are scarcity of good quality feeder cattle for fattening. In an effort to resolve this challenge, AMARTA completed the purchase of 300 female Bali cattle for the grantee, Puskud NTT, in Kupang, West Timor in order to increase the number and quality of Bali cattle calves and, ultimately, feeder calves. This activity has gained notable interest on behalf of local government agencies, including the Directorate General of Livestock and other senior Ministry of Agriculture officials.

**Objectives:** Since inception of the program, 300 cattle have become pregnant through natural means or artificial insemination. The calves produced in the program will be sold to Puskud NTT as fattening cattle, providing the farmer with 80% of the profits, while Puskud NTT retains 10% for a management fee and the final 10% are invested in a cattle breeding fund to procure more females for additional farmers groups.

### **Activity Description**

AMARTA will:

- Continue monitoring the program and oversee Puskud NTT's workshops on innovative technology in breeding reproduction, nutrition, management, and animal health by providing technical assistance and training for the next 6 months. This will require a total of 6 week long trips by technical lead Dr. Kusuma Diwyanto.
- Handover all activities to Puskud NTT, ensuring sustainability through the cattle breeding fund
- Work with local Directorate General of Livestock officials to develop training models based on this activity.

### **Implementing Partners:**

- Cooperative Puskud NTT
- National Cooperative Business Association (NCBA)
- Directorate General of Livestock

### **Outcomes Year Two:**

| <b>Indicator</b>   | <b>Target<br/>September 2009</b> |
|--|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices (1 cow unit = 1 hectare) | 300                              |
| Indicator 2: Number of organizations and associations assisted                                     | 1 + 5 farmer groups              |
| Indicator 3: Number of agriculture related firms assisted  | 3                                |
| Indicator 4: Number of individuals receiving productivity training                                 | 300                              |
| Indicator 5: Percent change in value of exports  | N/A                              |
| Indicator 6: Percent change in purchases from smallholders   | 100                              |

### **Activity 3: Coffee Production and Marketing Improvement - Flores**

**Rationale:** The world specialty coffee market is becoming bigger with more demand for single origin, “development story” sources of Arabica coffee. Flores coffee has been identified as a possible new source of specialty coffee through assistance from AMARTA during the Coffee Value Chain Assessment. Technical and financial assistance is required to enable Flores coffee farmers to improve productivity and quality in order to access this newly emerging market for their coffee, which will generate more employment, increase farmer family income, and reduce rural poverty in this somewhat isolated area. The technical leads for this activity are Dieter Fischer and Edi Susmadi (Jakarta).

**Objectives:** Expand production to a new origin in Flores (Ngada), improve quality image and productivity of specialty coffees, and enhance buyer linkages. Expansion into Ngada is important, because demand for Flores coffee is more than twice the current supply.

#### **Activity Description:**

AMARTA will

- Assist Lion Lestari to achieve organic and fair trade certification. This process is underway in Ruteng, but not yet complete. In Ngada, both fair trade and organic certification are needed.
- Monitor purchases of coffee from the cooperative and sales of coffee by Lion Lestari
- Promote Flores coffees as Fair Trade and organic coffees and capitalize on the unique origin.

#### **Implementing Partner:**

- CV Lion Lestari

#### **Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September<br/>2009</b> |
|---|--------------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 2,500                                |
| Indicator 2: Number of organizations and associations assisted            | 50 farmer groups                     |
| Indicator 3: Number of agriculture related firms assisted                 | 1                                    |
| Indicator 4: Number of individuals receiving productivity training        | 2,900                                |
| Indicator 5: Percent change in value of exports                           | 500                                  |
| Indicator 6: Percent change in purchases from smallholders                | 110                                  |

#### **Activity 4: Biofuel Production Pilot Program – NTT Flores Ruteng**

**Rationale:** Flores Island has favorable climatic conditions and soils for the production of *Jatropha curcas*, a known vegetative supply of oil suitable for use in home lighting, cooking stoves, and fuel for primary agricultural machinery motors. The current supply of kerosene and diesel fuels on Flores is sporadic and expensive. Families spend as much as Rp. 5000 per day for kerosene to light their homes using simple can and wick torches.

Coffee farmers in Satar Mese and Uluwae have planted 100,000 *Jatropha* seedlings, which will begin bearing fruit in early 2009. Cooperatives in the two locations have built small warehouses and installed screw expellers to process *Jatropha* seed. The use of *Jatropha* oil as fuel and for soap making has been demonstrated.

#### **Objectives:**

- To demonstrate the use of *Jatropha* oil to fuel diesel engines for electricity generation.
- To demonstrate the use of *Jatropha* oil as fuel for cook stoves
- To demonstrate the use of *Jatropha* cake as an organic fertilizer for coffee plants
- To assist cooperatives to develop business plans for the sustainable operation of the oil expellers and generators

**Activity Description:** AMARTA will assist the cooperatives to convert diesel engines to operate on *Jatropha* oil. These engines will both drive the screw expellers and generate electricity for household lighting and welding.

AMARTA will also provide on-going technical training on *Jatropha* production, as well as business planning assistance.

BSH is currently finalizing the design of the Protos stove, designed to operate on plant oil. These prototypes stoves are expected to be available in October. Locally produced stoves are expected to be available in January, 2009. Assuming this schedule is maintained, AMARTA will demonstrate the stoves in late 2008. In early 2009, AMARTA will provide each cooperative with 75 stoves, on grant basis. These stoves will be sold to cooperative members on a cost-sharing basis.

#### **Implementing Partners:**

- Bosch und Siemens Hausgeräte (BSH)
- 2 village cooperatives in Ruteng, NTT

#### **Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 60                               |
| Indicator 2: Number of organizations and associations assisted            | 2                                |
| Indicator 3: Number of agriculture related firms assisted                 | 1                                |

|  |     |
|--|-----|
| Indicator 4: Number of individuals receiving productivity training | 500 |
| Indicator 5: Percent change in value of exports                    | N/A |
| Indicator 6: Percent change in purchases from smallholders         | N/A |

**Activity 5: Grouper Fingerlings Production Improvement – Flores (Activity deleted at request of USAID.)**

**Rationale:** The demand for live grouper continues to increase in China and Hong Kong as prices also continue to rise. The grantee, PT Karamba, has established operations and a full fledged hatchery and nursery in Flores and Nusa Tenggara. Efforts will continue in fingerling and fry production to create an environmentally and culturally acceptable sustainable source of supply of grouper fingerlings and grouper grow out market. The technical lead for this activity is David Anderson.

**Objectives:** Increase production to 20,000 fingerlings per month and export grouper to the international markets.

**Activity Description:**

AMARTA will

- Continue to deliver grant support for rehabilitation of tanks in the hatchery and nursery with a capacity of 20,000 fingerlings per month.
- Provide support for exporting mature grouper to international markets.
- Ensure sustainability of ongoing activities by strengthening the business capacity of PT Karamba to avail of the market opportunities.

**Implementing Partners:**

- PT Karamba
- Warloka Fishing Village

**Outcomes Year Three:**

| Indicator  | Actual<br>February 2008 |
|--|-------------------------|
| Indicator 1b: Additional units of animal, fish, and other aquaculture products | 24,000                  |
| Indicator 2: Number of organizations and associations assisted                 | 2                       |
| Indicator 3: Number of agriculture related firms assisted                      | 1                       |
| Indicator 4: Number of individuals receiving productivity training             | 65                      |
| Indicator 5: Percent change in value of exports                                | 100                     |
| Indicator 6: Percent change in purchases from smallholders                     | 100                     |

**Activity 6: Grouper Grow Out Pilot Program in Fishing Village – Flores**  
**(Activity deleted at request of USAID.)**

**Rationale:** AMARTA’s net cage fishing technology has provided technology and opportunities for increased access to high value live fish markets for the Warloka Village in Flores. With PT Karamba’s assistance, an environmentally and culturally acceptable option to develop a sustainable source of income has been established that protects the damaging fishing practices and logging in the Komodo National Park area. The technical lead for this activity is David Anderson.

**Objectives:** Support grouper nursery and grow-out development in Flores near the Komodo National Park protection area to meet increased demand from fish farmers. Increase production of grouper to achieve access to international markets, which requires minimum production of 8-10 tons per harvest. Improve the livelihoods of coastal fishing villages through improvement and diversification of income.

**Activity Description:**

AMARTA will

- Continue efforts to assist PT Karamba for supplying the village-based net cage project to produce approximately 10 tons of grouper per harvest to achieve international market access.
- Evaluate needs of the Warloka fishing village to diversify income by producing seaweed in addition to net cage grouper production.
- Study the possibility of adding additional species of grouper fish to the net cage production scheme in order to accelerate fish sales income (faster growing, but lower priced grouper species).

**Implementing Partners:**

- PT Karamba
- Warloka Fishing Village

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Actual<br/>February 2008</b> |
|---|---------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                             |
| Indicator 2: Number of organizations and associations assisted            | 2                               |
| Indicator 3: Number of agriculture related firms assisted                 | 2                               |
| Indicator 4: Number of individuals receiving productivity training        | 60                              |
| Indicator 5: Percent change in value of exports                           | 100                             |
| Indicator 6: Percent change in purchases from smallholders                | 100                             |

## Value Chain Interventions - Jakarta Region

### Introduction

AMARTA interventions in West Java began in April 2008, collaborating with the Indonesian Vegetable Research Institute (IVEGRI), Lembang-Bandung to conduct various trainings and workshops to improve productivity, quality, and market access for targeted vegetable products. IVEGRI provides the necessary facilities including equipment, materials, demonstration plots, and free office space. The following year three activities are a continuation of the year two initiatives.

### Activity I: Bimandiri Supply Chain Market Linkages

**Rationale:** AMARTA and Bimandiri, a specialty produce wholesaler with large supermarket clients like Carrefour, will improve the post-harvest handling infrastructure by providing technical assistance and a grant to expand a packing house in Garut, to enable farmers to grade and pack their produce close to production centers.

Currently, the packing house capacity is 2,500 kg per day, although it is expected to increase to 6,500 kg after the expansion. There are 21 employees, 37 growers, and 16 local traders who work in the facility everyday. Monthly costs are Rp. 240 million, out of which more than 70% or Rp. 170 million is spent to purchase horticulture from small farmers. Beneficiaries will include rural smallholders, rural farm laborers, local traders (collectors), and Bimandiri.

**Objectives:** To improve product quality through better agricultural and post harvest handling practices, access better market, involve more small farmers, increase small income, and improve the welfare of smallholder vegetable growers.

### Activity Description:

AMARTA will:

- Provide grant funds to expand Bimandiri's existing packing house and distribution center in Garut to purchase farmer's products and involve them in activities.
- Provide technical assistance and training to Bimandiri staff and farmers to match supermarket quality standards including cultivation techniques, post-harvest handling, and farm management.
- Ensure sustainability through long term contracts with Bimandiri and farmers.

### Implementing Partners:

- The Indonesian Vegetable Research Institute (IVEGRI) – Centre for Horticultural Research and Development
- APRINDO (Indonesian Retail Merchant Associations)
- Agriculture Regional Offices in Bandung and Garut.
- CV. Bimandiri
- Farmer groups

### Outcomes Year Three:

| Indicator   | Target<br>September 2009 |
|---|--------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 75                       |
| Indicator 2: Number of organizations and associations assisted            | 9                        |
| Indicator 3: Number of agriculture related firms assisted                 | 21                       |
| Indicator 4: Number of individuals receiving productivity training        | 180                      |
| Indicator 5: Percent change in value of exports                           | N/A                      |
| Indicator 6: Percent change in purchases from smallholders                | 75                       |

### Activity 2: Strawberry Production and Marketing in Bandung, Garut, and Majalengka

**Rationale:** To increase income and welfare of strawberry farmers in Bandung, Garut and Majalengka an emphasis on productivity and quality is necessary, along with access to better markets. Strawberries have great economic impact for farmers and the entire region. Plants totaling 1,000 polybags using 1,000 m<sup>2</sup> will generate revenue of Rp. 50.5 million in 15 months, of which 40% of the revenue or Rp. 20.3 million is profit. Strawberry cultivation also creates sustainable employment opportunities for a significant amount of farmers since they are harvested every other day.

**Objectives:** Improve strawberry production and increase income through better agricultural and post harvest handling practices to access higher value markets.

#### Activity Description:

AMARTA will:

- Provide mother plant plots (kebun bibit) of strawberries to produce good quality local variety plants.
- Provide a revolving fund to 60 ASGITA's farmers Rp. 2 million each or Rp. 120 million in total. This Rp. 120 million (\$ 13,500) of fund will contribute to Rp. 11 billion (almost 10 times) of net household income. This fund will revolve to other members every 6 months. ASGITA is a farmer group association in Bandung, comprises of 11 farmer groups with **730** members.
- Provide training to increase harvests to a minimum 90% of ripe strawberries, improve post-harvest handling, and market access.

- Provide technical assistance and training to 30 strawberry farmers in Garut and 15 strawberry farmers in Majalengka, who have been provided 28,000 local strawberry plants.

**Implementing Partners:**

- The Indonesian Vegetable Research Institute (IVEGRI) – Centre for Horticultural Research and Development
- Agriculture Regional Offices in Bandung and Garut.
- ASGITA farmer groups association in Bandung
- Stroberi Betah Lestari farmer group in Garut
- Jasmine farmer group in Majalengka

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 52                               |
| Indicator 2: Number of organizations and associations assisted            | 13                               |
| Indicator 3: Number of agriculture related firms assisted                 | 3                                |
| Indicator 4: Number of individuals receiving productivity training        | 105                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | -                                |

**Activity 3: Demplots for horticultural crops in Bandung, Garut and Majalengka**

**Rationale:** Workshops on “Bridging the Gap between Farmers and Supermarkets” conducted by AMARTA in January 2008 found that a high percentage of farmers products were rejected due to poor quality. Classroom training and on-farm demonstration plots (Demplots) on farmer’s land will effectively show and teach farmers how to perform best agricultural practices to match modern market quality standards. In the last four months, AMARTA has established Demplots of broccoli in Bandung, kyurii (Japanese cucumber) in Majalengka, organic vegetables in Garut, and local strawberries in IVEGRI’s trial land in Lembang. For year three those Demplots will be expanded covering more crops and areas to reach more beneficiaries.

**Objectives:** By expanding and learning from the experience of existing Demplots of horticultural crops in Bandung, Majalengka, and Garut, AMARTA will train additional farmers on best agricultural practice to produce improved quality high value vegetables.

**Activity Description:**

AMARTA will:

- Establish 1.3 ha Demplots of broccoli in Bandung, 1.3 ha of various high value vegetables in Majalengka and 1.5 ha of various high value vegetables in Garut expanding on the existing 1,000 m2 Demplots. The cost of growing those crops will be recirculated through a revolving fund to allow more farmers to receive benefits, and encourage farmers to improve operations.
- Provide three field assistants- one each from Bandung, Garut and Majalengka- resources to provide record keeping daily technical assistance.
- Conduct class room training, field trainings, field days, and workshops.
- Facilitate farmer’s access to markets in Garut and Bandung through CV Bimandiri.

**Implementing Partners:**

- The Indonesian Vegetable Research Institute (IVEGRI)-Centre for Horticultural Research and Development
- Agriculture Regional Offices in Bandung, Garut and Majalengka
- APRINDO (Indonesian Retail Merchant Association)
- CV Bimandiri in Bandung and Garut
- Palmarosa Farmer’s Group in Bandung
- Cikareo Farmer’s Group in Majalengka
- Kelompok Agribisnis Pemuda Kudangsari Farmer’s Group in Garut

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 45                               |
| Indicator 2: Number of organizations and associations assisted            | 7                                |
| Indicator 3: Number of agriculture related firms assisted                 | 3                                |
| Indicator 4: Number of individuals receiving productivity training        | 90                               |
| Indicator 5: Percent change in value of exports                           | N/A                              |

|  |   |
|--|---|
| Indicator 6: Percent change in purchases from smallholders | - |
|--|---|

#### **Activity 4: IVEGRI's Technology Dissemination, Farmer Groups Empowerment and Market Studies**

**Rationale:** The Indonesian Vegetables Research Institutes (IVEGRI) is the only government research institute with a mandate in conducting vegetable research activities in Indonesia. Disseminating research results in the form of on-farm demonstration plots, conducting training, field days, workshops, and completing relevant studies will convince farmers to implement best farming practices, build a farmer's network, and ultimately empower them.

**Objectives:** To train farmers to implement best farming practices in producing improved quality high value vegetables by establishing Demplots at IVEGRI's trial land, facilitating market access, and conducting market studies on related commodities.

##### **Activity Description:**

AMARTA will collaborate with IVEGRI in order to:

- Establish 0.5 hectare of in-house Demplots for various commodities such as strawberries, broccoli, kyurii, spinach, tomato, eggplant, and chilli. The Demplots will ultimately be used as a training site.
- Establish seed growing venture of Russet Burbank potatoes for processing and Russet Norgold for fresh consumption.
- Improve service delivery for food safety such as safe and judicious use of pesticides in collaboration with Crop Life Indonesia.
- Conduct regional market studies and supermarket studies on selected commodities.
- Provide IVEGRI with capacity building in order to ensure the sustainability of all successful pilot projects that are marketable.

##### **Implementing Partners:**

- The Indonesian Vegetable Research Institute (IVEGRI)-Centre for Horticultural Research and Development
- Agriculture Regional Offices in Bandung, Garut and Majalengka
- APRINDO (Indonesian Retail Merchant Association)
- CV Bimandiri in Bandung and Garut
- ASGITA (Asosiasi Agribisnis dan Wisata) farmer group association in Bandung
- Stroberi Betah Lestari farmer group in Garut
- Jasmine farmer group in Majalengka
- Palmarosa Farmer Group in Bandung
- Cikareo Farmer Group in Majalengka

- Kelompok Agribisnis Pemuda Kudangsari Farmer Group in Garut

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 90                               |
| Indicator 2: Number of organizations and associations assisted            | 10                               |
| Indicator 3: Number of agriculture related firms assisted                 | 2                                |
| Indicator 4: Number of individuals receiving productivity training        | 180                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | -                                |

**Activity 5: West Java Horticulture Network and Partnership Development**

**Rationale:** To improve competitiveness, the implementation of value chain intervention should involve the whole range of value chain participants. In addition, the development of partnerships between private sector entities, government institution is needed to facilitate pooling of resources and skills and increase competitiveness. However, to actively participate in this network, farmers should firstly be empowered, to understand policy issues, aware of factors affecting the improvement of enabling environment, and have enough skill to make a business plan.

**Objectives:** To facilitate the establishment of networking and partnership between farmers, private sector entities, government institution and other public private institution that promote competitiveness and improve enabling environment.

**Activity Description:**

AMARTA will:

- Train farmers on how to create business plan, cost-benefit analysis and farm record keeping
- Conduct regular (monthly) meeting and discussion among AMARTA's farmers
- Conduct dialog among stakeholders and facilitate the establishment of West Java Horticulture Communication Forum
- Conduct Regional Agribusiness Competitiveness Alliance (RACA) Workshop

**Implementing Partners:**

- The Indonesian Vegetable Research Institute (IVEGRI)
- Agriculture Regional Offices in Bandung, Garut and Majalengka
- Indonesian Retail Merchant Association (APRINDO)
- CV Bimandiri in Bandung and Garut
- ASGITA (Asosiasi Agribisnis dan Wisata) farmer group association in Bandung
- Stroberi Betah Lestari farmer group in Garut
- Jasmine farmer group in Majalengka
- Palmarosa Farmer Group in Bandung
- Cikareo Farmer Group in Majalengka
- Kelompok Agribisnis Pemuda Kudangsari Farmer Group in Garut

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 120                              |
| Indicator 2: Number of organizations and associations assisted            | 10                               |
| Indicator 3: Number of agriculture related firms assisted                 | 2                                |
| Indicator 4: Number of individuals receiving productivity training        | 240                              |
| Indicator 5: Percent change in value of exports                           | N/A                              |
| Indicator 6: Percent change in purchases from smallholders                | -                                |

**Value Chain Interventions - Makassar Region**

**Activity 1: AMARTA Sulawesi Kakao Alliance (ASKA) trainings and additional supporting activities - South Sulawesi, Southeast Sulawesi, and West Sulawesi**

**Rationale:**

Indonesia's competitive advantages in cocoa production include low cost, high production capacity, efficient infrastructure and an open trading and marketing system. In recent years this competitive advantage has been threatened by poor and inconsistent quality of cocoa. In order to address these problems, various public and private initiatives have been undertaken to research, train, and transfer improved production practices to smallholder cocoa farmers in Indonesia. This has translated into large

discounts and a lower price paid to farmers, and has also reduced the demand for Indonesian Fair Average Quality (FAQ) cocoa as buyers found other origins to substitute for Sulawesi cocoa.

Collaboration between AMARTA and its partners- PT. Olam Indonesia, UD. Tunas Jaya, and PT. JBP Armajaro- through the AMARTA Sulawesi Kakao Alliance (ASKA) provides a variety of technical assistance through Basic and Follow-Up training to help smallholder cocoa producers to improve both on and off-farm management practices. The establishment and support for up-country buying stations by ASKA industry partners has provided important transparency as well as price incentives for cocoa that meets international export quality cocoa standard. The technical lead of this activity is Simon Badcock.

**Objectives of ASKA Basic and Follow-Up training activities:**

- Facilitate improved access for smallholder cocoa farmers to exporters who will provide a transparent and standardized process in determining cocoa quality at partners buying stations (PT. Olam Indonesia, PT. Armajaro and UD Tunas Jaya).
- Increase overall cocoa farming productivity through training on production techniques and pest and disease control, apply good agriculture practices, establish farmer on-farm studies (*kebun belajar*), technical assistance for rehabilitation and replanting techniques, and enhance skills on selecting promising cocoa local clones.
- Increase farmer knowledge and capacity to provide cocoa beans that meet international export quality standards.
- Support solar dryer training and construction at farmer level for improving quality, particularly in moisture content and mold content.
- Develop and implement a sustainable cocoa rehabilitation/replanting model based on the “garden evaluation concept”.
- Improve knowledge base of field staff and government officials at the district and province level through training of trainers, technical assistance, and support.
- Encourage hand-over of training activity program, materials, and methods to cocoa stakeholders as well as other bridging activities.

**Activity Description:**

1. **ASKA Basic Training** - Focus on improving skills and knowledge of on and off-farm management practices with six month intensive training for 20,500 smallholders of Southeast, South, and West Sulawesi. Basic training to be completed in December 08/January 09.
2. **ASKA Follow-up Training** - Focus on strengthening and helping consolidate smallholder’s skills and knowledge provided in Basic training including additional topics addressing recent issues identified at the farmer level.
3. **Solar dryer training and construction** as an inexpensive and appropriate method of drying cocoa, aiding farmers to reduce moisture content and improve overall quality which has been recognized as a constraint in current post-harvest handling practices.

4. **Training of Trainers** for farmer trainers in Basic and Follow-Up training to receive intensive training as required for supporting implementation of activities.
5. **Handover activities** – Exit activities include: i) submission and distribution of key training and implementation materials to cocoa stakeholder community, ii) 800 farmer group profiles provided upon request to key ASKA partners and stakeholders, iii) technical assistance and capacity building for government counterparts and cocoa stakeholders where requested, iv) public awareness activities – forums, field tours, distribution of media and training materials (see AMARTA public awareness section), v) link ASKA stakeholders to facilitate discussion on how they will proceed with support for the model, and vi) handover of clonal trial gardens to ICCRI to manage.

**ASKA Implementing Partners:**

- PT. OLAM Indonesia is facilitating access to its buying stations quality testing equipment in Southeast and South Sulawesi.
- UD. Tunas Jaya is a local trader with eight up-country buying stations that are located throughout West Sulawesi Province.
- PT JBP-Armajaro recently joined with support for 4 buying stations for farmers of Palopo and North Luwu districts of South Sulawesi.
- Indonesian Coffee Cocoa Research Institute (ICCRI) is an ASKA partner in designing and delivering training and technical assistance.
- AMARTA through the ASKA program is actively collaborating with a range of other stakeholders including provincial and district estate crops agencies.

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices                               | 24,343                           |
| Indicator 2: Number of organizations and associations assisted  | 820                              |
| Indicator 3: Number of agriculture related firms assisted   | 7                                |
| Indicator 4: Number of individuals receiving productivity training                                      | 20,500                           |
| Indicator 5: Percent change in value of exports   | *10+                             |
| Indicator 6: Percent change in purchases from smallholders  | *20+                             |
| Indicator 7: Number of new technologies or management practices made available for transfer             | 15                               |
| Indicator 8: Number of additional surveillance and/or control systems in place for agricultural threats | N/A                              |
| Indicator 9: Number of public-private partnerships formed   | 3                                |

Note: A recent agronomic survey indicates that the 2008 cocoa crop will be substantially reduced due to disease and pest outbreaks. The high cost of Sulawesi FAQ

beans is stimulating some cocoa processors to substitute Sulawesi cocoa beans for higher quality beans from the Ivory Coast.

\* indicates that indicators will be dependent on USAID approval and available funding – should funds be cut to the AMARTA program then there is the possibility that targets will be modified.

### **Activity 2: Natural Rubber in South and West Kalimantan (Activity deleted at request of USAID.)**

**Rationale:** Indonesia is the world's second largest supplier of natural rubber. Approximately 85% of the natural rubber produced in Indonesia is by smallholder rubber farmers. Many smallholder farmers lack information and training on how to use better planting materials, better tapping practices, and improving coagulum quality. It is envisaged AMARTA's activities would serve as a model for smallholders in the vicinity. The technical leads for this activity are Iahang (Sanggau, Kalimantan) in coordination with David Anderson (Chief-of-Party) and Simon Badcock (Makassar Office).

#### **Objectives:**

- Establish certified nurseries for production of improved planting material at the local level enhancing farmer access to improved rubber planting materials and creating demonstration plots.
- Improve the quality of latex, provide daily prices for of rubber, and facilitate exchange between key farmers in established farmer's groups to improve rubber garden management practices, rubber tapping, post-harvest handling and understanding of quality through training and technical assistance.
- Improve extension services through training of the extension agents.
- Facilitate improved access to local markets where demand for high quality rubber planting material is high.

#### **Activity Description:**

AMARTA will:

- Support the establishment of a one hectare bud wood garden, replicating second year activities. Rubber planting materials will be provided by Bridgestone in Banyu Irang Village, Bati-bati Sub-District, Tanah Laut District, and South Kalimantan.
- Support rubber clonal identification training in South Kalimantan and South Sumatera to enhance the knowledge of farmers and extension agents of clonal identification of good rubber materials as well as enhancing collaboration with the Indonesian Rubber Research Institute (IRRI).
- Assist in the establishment of a rubber nursery cooperative with a legal license in Tanah Laut District (*Koperasi Pembibit Karet yang Berbadan Hukum*), South Kalimantan for four farmer's groups.
- Support the establishment of four latex processing units and information center for rubber price information in West Kalimantan for 15 farmer's groups.
- Continue providing training in latex processing, quality, and marketing, to improve the quality of raw materials such as slab, sheet or lump with the

recommended coagulant to enhance farmers' knowledge in South and West Kalimantan.

- Continue providing training in improved tapping techniques at demonstration plots and give 150 tapping cups to 20 farmers in South and West Kalimantan.
- Facilitate farmer field trip (Crumb Rubber Factory) to PT. Sumber Jantin/New Kalbar Processor in order to enhance knowledge for farmers about rubber quality which is required by factory. A total of 7 Farmer Groups and 120 farmers will receive those beneficiaries of this activity.

**Implementing Partners:**

- IRRI Sembawa
- PT Bridgestone Kalimantan Plantations (BSKP), Imban, South Kalimantan
- PT Bridgestone Sumatera Estate, Dolok Marangir, North Sumatera
- Forestry Training Centre (Balai Diklat Kehutanan), Samarinda, East Kalimantan
- GAPKINDO Cabang Kalimantan Selatan and Tengah

**Outcomes Year Three:**

| Indicator   | Target September 2009 |
|---|-----------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 400                   |
| Indicator 2: Number of organizations and associations assisted            | 5+22                  |
| Indicator 3: Number of agriculture related firms assisted                 | 5+22 farmer groups    |
| Indicator 4: Number of individuals receiving productivity training        | 500                   |
| Indicator 5: Percent change in value of exports                           | 10                    |
| Indicator 6: Percent change in purchases from smallholders                | 15                    |

**Activity 3: AMARTA Gorontalo Seaweed Activity (Kwandang/Anggrek Bay – Pantura District and Lemito / Popayato - Puhuwato District) (Activity deleted at request of USAID.)**

**Rationale:** In an on-going effort to achieve the goals and support rural development throughout the Indonesian archipelago, the AMARTA Gorontalo Seaweed Project proposes to provide support for Indonesia’s burgeoning seaweed industry by supporting the production of seaweed as a raw material for local value adding in the Gorontalo province of Northern Sulawesi.

Since the inception of seaweed growing enterprises in the greater Gorontalo area, seaweed farmers have attempted to grow seaweed year round. As observed by both seaweed consultants and extension agents from the department of fisheries, seaweed farmers will likely have at least one complete crop failure during the year, losing almost

all of their seaweed stock. If growers only plant in the best growing seasons, they must purchase seaweed seed at least twice a year. This can be very expensive because the best times of the year for planting usually falls immediately after a time of year not conducive to production of seaweed. Poor farmers do not have the capital required to buy seed for every planting therefore must attempt to grow seaweed year round in order to maintain stock. This makes their operations prone to complete crop failure in poor growing seasons.

Technical assistance on proper farm location and production and post-harvest techniques will facilitate year-round production. The presence of nurseries throughout the production areas will make planting material more available and affordable. Improved drying and post-harvest processing can increase farmer incomes and improve quality. The technical leads for this activity are Saipul Rapi (Gorontalo) and Dieter Fischer (Jakarta).

**Objectives:**

- To facilitate the supply and introduction of good seaweed planting stock to the Kwandang/Anggrek Bay and Lemito / Popayato (Pohuwato District) regions.
- To provide support for nurseries wherein all-year-round seed stock can be produced that will enable farmers to farm seaweed throughout the year
- To provide smallholder seaweed farmers with access to the 'grown-out' seaweed seed stock through a revolving system on a 'pass forward' system that will enable them to obtain good seaweed seed stock.
- To reduce the losses currently incurred by smallholder seaweed producers in Gorontalo from 30% to an expected 10%
- To provide training and technical assistance and support to local stakeholders including local farmer groups.
- To test a mechanical press that removes moisture from seaweed, speeding drying and reducing transport costs. The extracted liquid can be used as a foliar fertilizer for horticulture plants.

**Description:**

AMARTA will continue to provide technical assistance to seaweed farmers in Gorontalo through its staff member in Gorontalo and the purchase order that has been signed with the Makassar-based NGO SEAPlant Net.

The seaweed produced by growers will be sold to one of several possible private sector players CV. Sumber Rejeki (Manado), PT. AMARTA Sari Lestari, or Taksi Mina Bahari for processing in the semi refined carrageenan plant currently being set up in Manado.

Depending on funding levels, AMARTA may support seaweed producers in other provinces, such as Flores.

**Implementing Partners:**

- SEAPlant Net

- Seaweed Growers Farmer Groups

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September<br/>2008</b> |
|---|--------------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 100 tons                             |
| Indicator 2: Number of organizations and associations assisted            | 15                                   |
| Indicator 3: Number of agriculture related firms assisted                 | 2                                    |
| Indicator 4: Number of individuals receiving productivity training        | 200                                  |
| Indicator 5: Percent change in value of exports                           | 50                                   |
| Indicator 6: Percent change in purchases from smallholders                | 100                                  |

**Activity 4: Conduct Coffee Cherry Borer (Broca) Trap Demonstration and Training program in Sulawesi – Toraja (Activity deleted at request of USAID.)**

**Rationale:** A coffee pest known as the Coffee Cherry Borer or Broca is attacking smallholder coffee plantings throughout Indonesia, causing loss in production and reduction in quality due to the damage to the coffee bean during development. A technology new to Indonesia, but practiced in Latin America, known as the coffee broca trap, is available for transfer to smallholder coffee growers. Assistance is required to train farmers on the use of this technology to reduce losses in yields and quality, which reduce their incomes. The technical lead for this activity is Edi Susmadi (Jakarta).

**Objectives:** Introduce a new technology to offset biological damage to smallholder coffee plantings by the coffee cherry borer insect that can be used for organic certified Coffee Farms. Demonstrate this new technology by placing coffee broca traps in smallholder coffee farmer fields to attract and trap the coffee borer and measure reduction in crop damage. Train selected coffee smallholders in the use and monitoring of the broca traps to promote wider use of this new technology. Report and publicize the results of the broca trap demonstration to coffee farmers, urging better agricultural practices which will result in higher yields and better quality, increasing farmer incomes subsequently by 10 to 15% depending on the incidence and severity of the attacks.

**Activity Description:**

AMARTA will

- Cooperate with local coffee growers groups in the collection, analysis, and dissemination of the broca trap demonstration results
- Organize a training session for interested farmers to introduce the broca trap technology and economical justification for its use.

**Implementing Partners:**

- CV Lion Lestari coffee company
- Local coffee growers farmer groups

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September 2009</b> |
|---|----------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 10                               |
| Indicator 2: Number of organizations and associations assisted            | 1                                |
| Indicator 3: Number of agriculture related firms assisted                 | 2                                |
| Indicator 4: Number of individuals receiving productivity training        | 200                              |
| Indicator 5: Percent change in value of exports                           | 10 to 15%                        |
| Indicator 6: Percent change in purchases from smallholders                | 10 to 15%                        |

**Papua Agriculture Development Alliance - PADA**

**Value Chain Interventions - Papua Region**

**Rationale:**

AMARTA has continued to provide assistance through the Papua Agriculture Development Alliance (PADA) program that has received extremely positive feedback from PT Freeport and the Governor of Papua for providing economic growth solutions at the district and village level. Year three activities will expand on successful initiatives and AMARTA will continue coordinating with USAID and PT Freeport Indonesia in socio-economic development issues to create additional employment, increase farmer's income, and alleviate rural poverty that will improve the livelihood of the various villages. Specifically, PADA will expand on the four ongoing activities described below, and continue discussions on possible additional activities.

## Activity I: Kokonao Fish Cooperative Development

Rationale: AMARTA/PADA has provided technical assistance, training, and grants which have provided fishermen access to boats, nets, and ice to properly fish for the abundant seafood found in the nearby mangrove waters. Village income is limited and poverty is serious. Villagers seek assistance to expand their fishing capacity, and access ice to keep their catch fresh during transport to local markets. AMARTA will continue efforts providing technical assistance, training, and grants to form a fishing cooperative in Kokonao benefiting 300 fishermen. The existing market for large quantities of seafood has already created a sustainable long term solution for fishermen to generate income if they are taught and assisted to avail of these opportunities. The technical lead for this activity is Kornel Gartner, assisted by Franz Goetz.

**Objectives:** Increase employment and income through fishing activities. Improve trade and sales linkages for supplies of fishery related equipment. Provide business management and marketing training for the cooperative and its members.

### Activity Description:

AMARTA will:

- Enhance production at the new ice factory in Kokonao Village to provide ice to the village and surrounding area.
- Continue providing a credit facility to acquire fishing boats, nets, ice, and other supplies and materials.
- Continue to provide training and technical assistance on added value fish product processing and marketing strategies at the village level.
- Provide technical assistance to strengthen the Kokonao Maria Bintang Laut Cooperative in conducting fishing related activities, including credit programs, cooperative management, and cooperative democracy.

### Implementing Partners:

- Freeport Indonesia
- Kokonao fisherman and family members
- Catholic Church of Timika
- Koperasi Serba Usaha Maria Bintang Laut

### Outcomes Year Three:

| Indicator   | Target<br>September<br>2008 |
|---|-----------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | N/A                         |
| Indicator 2: Number of organizations and associations assisted            | 1                           |

|  |     |
|--|-----|
| Indicator 3: Number of agriculture related firms assisted          | 9   |
| Indicator 4: Number of individuals receiving productivity training | 405 |
| Indicator 5: Percent change in value of exports                    | 25  |
| Indicator 6: Percent change in purchases from smallholders         | 500 |

## **Activity 2: Moanemani Coffee Development and Marketing Activity (Kamu Valley)**

**Rationale:** AMARTA provided technical assistance, training, and grants to develop the Arabica Specialty Coffee production, processing and exports from the Kamu Valley area. This includes financial assistance to make improvements to the cooperative's processing site, installation of a coffee quality and cupping laboratory, and a Satellite phone service. A coffee huller machine, vertical coffee grading machine, and generator for electric supply was also delivered and installed at the production facility. Work is underway to improve the water supply and sanitary facilities. A baseline survey of farmers has been completed, while Organic and Fair Trade certifications are in progress. The activity is implemented by a team of AMARTA coffee consultants working directly with current and future coffee growers in the village and surroundings. The technical lead for this activity is Kornel Gartner.

**Objectives:** Improve the productivity of current coffee production and expand the production base. Improve the post-harvest handling of the coffee. Complete all requirements for Organic and Fair-Trade certifications, and create access to better, higher value markets for the specialty coffee.

### **Activity Description:**

AMARTA will:

- Establish additional small seedling nurseries with individual growers using seed collected from existing coffee plants in order to expand the coffee production area.
- Assist in obtaining Organic and Fair-Trade certification.
- Demonstrate improved coffee drying and processing practices.
- Develop new branding graphics and logos to tell the story of this unique specialty coffee.

### **Implementing Partners:**

- PT Freeport Indonesia
- Yayasan P-5 Coffee Cooperative Santo Isodorus
- Catholic Church of Timika

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September<br/>2008</b> |
|---|--------------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 312                                  |
| Indicator 2: Number of organizations and associations assisted            | 1                                    |
| Indicator 3: Number of agriculture related firms assisted                 | 7                                    |
| Indicator 4: Number of individuals receiving productivity training        | 450                                  |
| Indicator 5: Percent change in value of exports                           | 100                                  |
| Indicator 6: Percent change in purchases from smallholders                | 100                                  |

### **Activity 3: Wamena Coffee Development and Marketing Activity (Baliem Valley)**

**Rationale:** AMARTA has provided technical assistance, training, and grants to develop the Arabica Specialty Coffee production, processing and export potential of the Baliem Valley area. Improvements have been completed for the cooperative's processing site, including fencing, extension of the production facilities, installation of a coffee quality and cupping laboratory, and a meeting hut (Honai). A coffee huller machine, vertical coffee grading machine, and generator for electric supply were delivered and installed at the production facility. Work is underway to improve the water supply and sanitary facilities. A baseline survey of farmers was also completed, providing information that will help target assistance and measure 2009 improvements. Organic and Fair Trade certifications continue as the first inspection from an organic inspector was completed in July 2008. Two containers of specialty coffee will be shipped to Starbucks in October and December 2008. The technical lead for this activity is Kornel Gartner.

**Objectives:** Improve productivity of the current coffee production and expand the production base. Obtain Organic and Fair-Trade certifications. Improve the post-harvest handling of the coffee harvested. Create access to better, higher value markets for the specialty coffee and expand operations to include additional coffee farmers. Introduce and demonstrate Brocap traps to reduce yield and quality losses due to the coffee cherry borer pest. Improve coffee buying capabilities with 2 – way radio system and sufficient transportation.

#### **Activity Description:**

AMARTA will:

- Established small seedling nurseries with individual growers using seed collected from existing coffee plants in order to expand the production area.
- Assist in implementing recommendations in obtaining Organic and Fair-Trade certification.
- Demonstrate coffee Broca trap technology and improved coffee drying and processing practices.
- Develop new branding graphics and logos to tell the story of this unique specialty coffee.
- Ship additional containers of coffee to new customers.
- Assist the cooperative to acquire logistical systems to improve coffee buying capabilities.

#### **Implementing Partners:**

- PT Freeport Indonesia
- OKESA JAGARA Farmers Group
- Baliem Specialty Coffee Cooperative , KSU Baliem Arabica
- Dinas Perkebunan Wamena

### Outcomes Year Three:

| Indicator   | Target<br>September<br>2008 |
|---|-----------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 2,431                       |
| Indicator 2: Number of organizations and associations assisted            | 23                          |
| Indicator 3: Number of agriculture related firms assisted                 | 16                          |
| Indicator 4: Number of individuals receiving productivity training        | 2,250                       |
| Indicator 5: Percent change in value of exports                           | 100                         |
| Indicator 6: Percent change in purchases from smallholders                | 100                         |

#### Activity 4: Agimuga Agriculture Development and Marketing Activity

**Rationale:** AMARTA provided technical assistance, training, and grants to develop the swine and rice production, processing, and marketing potential of 179 families in the four villages of Aramsolki, Amungun, Kiliarma, and Faka Fuku. The technical leads for this activity are Kornel Gartner in Papua and David Anderson in Jakarta.

**Objectives:** Improve the productivity of current swine production. Expand the production base to meet Freeport Indonesia pork requirements and/or high demand for ceremonial pigs in the area. Improve the post-harvest handling of the rice currently grown and harvested. Provide improved machinery and equipment for growing, harvesting, and thrashing rice through grant assistance in collaboration with the local government. Create access to better, higher value markets by improving transportation systems from the production area to the Timika market. Provide a communication and information center in Aramsolki to provide farmer's access to market information by phone and provide training and technical assistance in good agricultural practices. Improve village food security with production of rice sufficient to meet entire village consumption requirements.

#### Activity Description:

AMARTA will:

- Provide improved swine breeding stock accompanied with technical assistance and training on swine husbandry practices.
- Complete the remaining portion of a 1.2 km compacted stone road from Aramsolki Village to the swine farm east of Aramsolki.

- Assist in delivery and operation of modern rice cultivation and processing machinery to be provided by the Ministry of Agriculture, Timika Regency.
- Assist in improving the 12 km dirt road from Aramsolki Village to the river port in Kiliarma.
- Provide a four-wheel drive tractor and trailer for transport of animals and agricultural products from the village to the river port.
- Provide a boat to be used for transporting swine and other products to Timika.
- Introduce improved rice storage practices.

**Implementing Partners:**

- PT Freeport Indonesia
- Agimuga Village
- Timika Regency Department of Agriculture
- Catholic Church

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September<br/>2008</b> |
|---|--------------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 75                                   |
| Indicator 2: Number of organizations and associations assisted            | 1                                    |
| Indicator 3: Number of agriculture related firms assisted                 | 3                                    |
| Indicator 4: Number of individuals receiving productivity training        | 300                                  |
| Indicator 5: Percent change in value of exports                           | N/A                                  |
| Indicator 6: Percent change in purchases from smallholders                | 100                                  |

**Activity 5: Hoesa/Tsinga Coffee Development and Ecotourism Activity**

**Rationale:** AMARTA will provide technical assistance and training to develop the Arabica Specialty Coffee production, processing and export potential of the Hoesa/Tsinga area, as well as assist in identifying opportunities for ecotourism activities to complement the village coffee income. A baseline survey of farmers will be conducted, providing information that will help target assistance and measure 2009 improvements.

Organic and Fair Trade certifications continue as the first inspection from an organic inspector was completed in July 2008. The technical lead for this activity is Kornel Gartner.

**Objectives:** Improve productivity of the current coffee production and expand the production base. Obtain Organic and Fair-Trade certifications. Improve the post-harvest handling of the coffee harvested. Create access to better, higher value markets for the specialty coffee and expand operations to include additional coffee farmers. Introduce and demonstrate Brocap traps to reduce yield and quality losses due to the coffee cherry borer pest. Introduce a new livelihood program of ecotourism based on nearby world class mountain climbing activities.

**Activity Description:**

AMARTA will:

- Establish small seedling nurseries with individual growers using seed collected from existing coffee plants in order to expand the production area.
- Assist in implementing recommendations in obtaining Rain Forest, Organic and Fair-Trade certification.
- Demonstrate coffee Broca trap technology and improved coffee drying and processing practices.
- Develop new branding graphics and logos to tell the story of this unique specialty coffee.
- Assist in designing and implementing a new ecotourism activity to complement the coffee program and villager livelihoods.

**Implementing Partners:**

- PT Freeport Indonesia SLD

**Outcomes Year Three:**

| <b>Indicator</b>  | <b>Target<br/>September<br/>2008</b> |
|---|--------------------------------------|
| Indicator 1: Additional hectares under improved technologies or practices | 40                                   |
| Indicator 2: Number of organizations and associations assisted            | 1                                    |
| Indicator 3: Number of agriculture related firms assisted                 | 7                                    |
| Indicator 4: Number of individuals receiving productivity training        | 40                                   |

|  |     |
|--|-----|
| Indicator 5: Percent change in value of exports            | 100 |
| Indicator 6: Percent change in purchases from smallholders | 100 |

## Value Chain Intervention Timeline

|  | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Public Awareness</i>                                |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 1: Media Campaign</b>                      |        |        |        |        |        |        |        |        |        |        |        |        |
| Ongoing  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 2: Website Development</b>                 |        |        |        |        |        |        |        |        |        |        |        |        |
| Ongoing  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 3: Public Expose and Conferences</b>       |        |        |        |        |        |        |        |        |        |        |        |        |
| As specified in individual activities                  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 4: International Conferences/Workshops</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| World Cocoa Foundation Seminar in Germany              |        |        |        |        |        |        |        |        |        |        |        |        |

|   | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <i>Value Chain Interventions: Medan</i>   |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 1: Improve Banana Productivity – Deli Serdang, North Sumatera</b>           |        |        |        |        |        |        |        |        |        |        |        |        |
| Work Shop banana with government agriculture research staff (BPTP)- North Sumatera      |        |        |        |        |        |        |        |        |        |        |        |        |
| Training government extension agent – Deli Serdang                                      | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |        |        |        |        |
| Training banana farmers – Deli Serdang  | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    | 200    |        |        |        |
| Training on trainer (ToT) Banana Farmers – Deli Serdang                                 |        |        |        |        |        |        |        |        |        |        |        |        |
| Banana commercial with PT Sewu Segar Nusantara and other distributors to Jakarta - Deli |        |        |        |        |        |        |        |        |        |        |        |        |

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|   | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Value Chain Interventions: Medan</b>   |        |        |        |        |        |        |        |        |        |        |        |        |
| Serdang   |        |        |        |        |        |        |        |        |        |        |        |        |
| Management training for banana Deli Serdang cooperation                                   |        |        | 15     |        |        |        |        |        |        |        |        |        |
| Monitoring and Evaluation – Deli Serdang  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 2: Improve Citrus Productivity and Post-harvest Handling – North Sumatera</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| Publishing BAP Citrus   |        |        |        |        |        |        |        |        |        |        |        |        |
| Reprinting leaflet BAP Citrus   |        |        |        |        |        |        |        |        |        |        |        |        |
| Publishing BAP Citrus Poster  |        |        |        |        |        |        |        |        |        |        |        |        |
| Producing VCD/DVD BAP Citrus  |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in Karo regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in Karo regency  | 600    | 600    | 600    | 600    | 600    | 600    |        |        |        |        |        |        |
| Citrus field school in Karo regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in Simalungen regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in Simalungen regency  |        | 400    | 400    | 400    | 400    | 400    |        |        |        |        |        |        |
| Citrus field school in Simalungen regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in North Tapanuli regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in North Tapanuli regency  |        |        |        |        | 200    | 200    | 200    | 200    | 200    | 200    |        |        |
| Citrus field school in North Tapanuli regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in Natal regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in Natal regency   |        |        |        |        | 150    | 150    | 150    | 150    | 150    | 150    |        |        |
| Citrus field school in Natal regency  |        |        |        |        |        |        |        |        |        |        |        |        |

|   | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Value Chain Interventions: Medan</b>   |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in Padang Lawas regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in Padang Lawas regency  |        |        |        |        | 80     | 80     | 80     | 80     | 80     | 80     |        |        |
| Citrus field school in Padang Lawas regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in Dairi regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in Dairi regency   |        |        |        |        | 80     | 80     | 80     | 80     | 80     | 80     |        |        |
| Citrus field school in Dairi regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| ToT citrus BAP in West Pak pak regency  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training farmers in West Pak pak regency  |        |        |        |        | 80     | 80     | 80     | 80     | 80     | 80     |        |        |
| Citrus field school in West Pak pak regency   |        |        |        |        |        |        |        |        |        |        |        |        |
| Monitoring and Evaluation   |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 3: Improve Production and Marketing of Vegetables – Berastagi, Sumatera</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| Preparing training module for carrot  |        |        |        |        |        |        |        |        |        |        |        |        |
| Preparing training module for broccoli  |        |        |        |        |        |        |        |        |        |        |        |        |
| Preparing training module for strawberries  |        |        |        |        |        |        |        |        |        |        |        |        |
| Developing trial field and demo vegetables with PT. Hortijaya                           |        |        |        |        |        |        |        |        |        |        |        |        |
| Developing learning field for carrot, broccoli and Strawberry in 5 villages             |        | 50     | 50     | 50     |        | 50     | 50     | 50     |        |        |        |        |
| Vegetables Commercial trial with PT Hortijaya   |        |        |        |        |        |        |        |        |        |        |        |        |
| Monitoring and Evaluation   |        |        |        |        |        |        |        |        |        |        |        |        |

|  | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|

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|   |                        |  |  |  |              |  |  |  |              |  |  |  |  |
|---|------------------------|--|--|--|--------------|--|--|--|--------------|--|--|--|--|
| <b>Value Chain Interventions - Bali Region</b>  |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| <b>Activity 1: Fermented Cocoa Production with Big Tree Farms - Bali</b>                        |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| Basic training in Jembrana  | 1,000 farmers (40 FGs) |  |  |  |              |  |  |  |              |  |  |  |  |
| Follow up training in Tabanan with Agricultural Extension Workers                               | 1,000 farmers (40 FGs) |  |  |  |              |  |  |  |              |  |  |  |  |
| Baseline survey in Jembrana   | 1,000 farmers          |  |  |  |              |  |  |  |              |  |  |  |  |
| Evaluation of first training in Tabanan   | 320 farmers            |  |  |  |              |  |  |  |              |  |  |  |  |
| Field visit (local government) to Sulawesi  | 13                     |  |  |  |              |  |  |  |              |  |  |  |  |
| Solar dryer construction  | 20 units               |  |  |  |              |  |  |  |              |  |  |  |  |
| Farmer Field days (in Tabanan and Jembrana)   | 40 FGs<br>++           |  |  |  |              |  |  |  | 40 FGs<br>++ |  |  |  |  |
| Workshop (in Tabanan and Jembrana)  | 40 FGs<br>++           |  |  |  | 40 FGs<br>++ |  |  |  |              |  |  |  |  |
| Follow up training in Jembrana  | 1,000 farmers (40 FGs) |  |  |  |              |  |  |  |              |  |  |  |  |
| <b>Activity 2: Cattle Breeding Pilot Program – (West Timor, Kupang)</b>                         |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| Second phase evaluation on cow condition, pregnancy rate, etc.                                  |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| Monitoring the implementation of breeding program and cow performance                           |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| Monitoring the cow preparation for re-breeding after first birth, estimate the calving interval |                        |  |  |  |              |  |  |  |              |  |  |  |  |
| <b>Activity 3: Coffee Production and Marketing Improvement - Flores</b>                         |                        |  |  |  |              |  |  |  |              |  |  |  |  |

|  | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |  |
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| <b>Value Chain Interventions - Bali Region</b>                                       |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Farmers trained in GAP and post-harvest handling; obtain Fair Trade Certification    | 2900e  |        |        |        |        |        |        |        |        |        |        |        |  |
| Samples sent to 20 specialty traders/roasters  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Sell 2 containers (36 tons)  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Establish processing capacity for 360 tons/year                                      |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Sell 5 containers (90 tons) Fair Trade Organic Coffee                                |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Train farmers in washed and semi-washed process                                      |        |        |        |        |        |        |        |        |        |        |        |        |  |
| <b>Activity 4: Biofuel Production Pilot Program – NTT</b>                            |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Delivery of pressing and crushing machines   |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Delivery of esterification machines  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Construction of Production Shed  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Establishment of Jatropha nursery  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Maintenance and supervision of Nursery   |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Demonstration of kerosene substitute production                                      |        | 900f   |        |        |        |        |        |        |        |        |        |        |  |
| Demonstration of biodiesel production (esterification)                               |        |        |        |        |        |        |        |        |        |        |        |        |  |
| TA to Cooperative  |        |        |        |        |        |        |        |        |        |        |        |        |  |
| <b>Activity 7: High Value Horticulture (strawberry) and Marketing Program - Bali</b> |        |        |        |        |        |        |        |        |        |        |        |        |  |
| Meet with produce buyers to identify needs and constraints to quality                |        | 3      |        |        |        |        |        |        |        |        |        |        |  |
| Assist cooperative to appoint in-house horticulturalist                              |        | 1      |        |        |        |        |        |        |        |        |        |        |  |

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| <b>Value Chain Interventions - Bali Region</b>  |        |        |        |        |        |        |        |        |        |        |        |        |
| Contract local horticulturalist to work with the cooperative in-house horticulturalist to head extension services |        | 1      |        |        |        |        |        |        |        |        |        |        |
| Provide training for on-farm trial (incl. drip irrigation)  |        |        |        |        | 1      |        |        |        |        |        |        |        |
| Supervise on-farm trial/demonstration   |        |        |        |        |        |        |        | 1      |        |        |        |        |
| Demonstrate better yield and quality  |        |        |        |        |        |        |        |        | 47     |        |        |        |
| Review results of the production trials   |        |        |        |        |        |        |        |        |        |        |        |        |
| Prepare report  |        |        |        |        |        |        |        |        |        |        |        |        |

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| <b>Value Chain Interventions - Jakarta Region</b>                |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 1: Bimandiri Pack House Expansion</b>                |        |        |        |        |        |        |        |        |        |        |        |        |
| Grant Administration   |        |        |        |        |        |        |        |        |        |        |        |        |
| Building improvements and procurement                            |        |        |        |        |        |        |        |        |        |        |        |        |
| Packing house/warehouse management                               |        |        |        |        |        |        |        |        |        |        |        |        |
| Post-harvest Handling Training                                   |        |        |        |        |        |        |        |        |        |        |        |        |
| Demonstration plots  |        |        |        |        |        |        |        |        |        |        |        |        |
| First delivery of improved packing house produce                 |        |        |        |        |        |        |        |        |        |        |        |        |
|  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 2: Strawberries – Bandung, Garut, and Majalengka</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| Cultivation techniques   |        |        |        |        |        |        |        |        |        |        |        |        |
| Post harvest handling training                                   |        |        |        |        |        |        |        |        |        |        |        |        |
| Demonstration plots  |        |        |        |        |        |        |        |        |        |        |        |        |

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| <b>Value Chain Interventions - Jakarta Region</b>                               |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 3: Demonstration Plot Expansion– Bandung, Garut, and Majalengka</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| Land preparation  |        |        |        |        |        |        |        |        |        |        |        |        |
| Planting  |        |        |        |        |        |        |        |        |        |        |        |        |
| Crop care   |        |        |        |        |        |        |        |        |        |        |        |        |
| Harvest   |        |        |        |        |        |        |        |        |        |        |        |        |
| Data Collection   |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 4: IVEGRI collaboration</b>   |        |        |        |        |        |        |        |        |        |        |        |        |
| Training and technical assistance   |        |        |        |        |        |        |        |        |        |        |        |        |
| Land preparation  |        |        |        |        |        |        |        |        |        |        |        |        |
| Planting  |        |        |        |        |        |        |        |        |        |        |        |        |
| Market studies  |        |        |        |        |        |        |        |        |        |        |        |        |
| Crop care   |        |        |        |        |        |        |        |        |        |        |        |        |
| Harvesting  |        |        |        |        |        |        |        |        |        |        |        |        |
| Field school  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 5: West Java Network Partnership</b>                                |        |        |        |        |        |        |        |        |        |        |        |        |
| Farmer meetings   |        |        |        |        |        |        |        |        |        |        |        |        |
| Stakeholder meetings  |        |        |        |        |        |        |        |        |        |        |        |        |
| West Java RACA  |        |        |        |        |        |        |        |        |        |        |        |        |

Note: Except for strawberries in Bandung all of the trainings will be conducted by IVEGRI

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|   | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
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| <i>Value Chain Interventions - Makassar Region</i>  |        |        |        |        |        |        |        |        |        |        |        |        |
| AMARTA field staffs visit Jember cocoa farms, 40 participants   |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Communication and Public awareness initiatives</b>   |        |        |        |        |        |        |        |        |        |        |        |        |
| AMARTA exhibition on National/Regional Agribusiness Plant Protection  |        |        |        |        |        |        |        |        |        |        |        |        |
| Develop DVD for Cocoa Garden Evaluation, Rehabilitation and Replanting Film                                     |        |        |        |        |        |        |        |        |        |        |        |        |
| Distribution AMARTA's fact sheets, newsletter, brochures, and posters   |        |        |        |        |        |        |        |        |        |        |        |        |
| Internal field staffs and partners (PT. Olam and PT. JBP-Armajaro) monthly meeting                              |        |        |        |        |        |        |        |        |        |        |        |        |
| AMARTA support for technical personnel to travel to Hamburg to provide a presentation to World Cocoa Foundation |        |        |        |        |        |        |        |        |        |        |        |        |
| AMARTA support for key GOI Estate Crops Decision Makers to visit ASKA training                                  |        |        |        |        |        |        |        |        |        |        |        |        |
| AMARTA support for ICCRI Research Conference in October (status - pending USAID funding)                        |        |        |        |        |        |        |        |        |        |        |        |        |
| Partnership meeting, AMARTA-smallholders-partners, smallholders representatives                                 |        |        |        |        |        |        |        |        |        |        |        |        |
| Integrated meeting, smallholders-AMARTA-PT Armajaro, 39 participants  |        |        |        |        |        |        |        |        |        |        |        |        |
| Final evaluation cocoa program workshop   |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>M&amp;E Data Collection and Reporting</b>  |        |        |        |        |        |        |        |        |        |        |        |        |
| Base line survey and needs assessment   |        |        |        |        |        |        |        |        |        |        |        |        |
| Farmer data tracking, 400 farmers   |        |        |        |        |        |        |        |        |        |        |        |        |

|  | <b>Oct-08</b> | <b>Nov-08</b> | <b>Dec-08</b> | <b>Jan-09</b> | <b>Feb-09</b> | <b>Mar-09</b> | <b>Apr-09</b> | <b>May-09</b> | <b>Jun-09</b> | <b>Jul-09</b> | <b>Aug-09</b> | <b>Sep-09</b> |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <i>Value Chain Interventions - Makassar Region</i> |               |               |               |               |               |               |               |               |               |               |               |               |
| Mid term evaluation for cycle 2, 2800 farmers      |               |               |               |               |               |               |               |               |               |               |               |               |
| Post-training Survey, ASKA Cycle 1                 |               |               |               |               |               |               |               |               |               |               |               |               |
| Post-training Survey, ASKA Cycle 2                 |               |               |               |               |               |               |               |               |               |               |               |               |
| Post-training Survey, ASKA Cycle 3                 |               |               |               |               |               |               |               |               |               |               |               |               |
| Preparing final report                             |               |               |               |               |               |               |               |               |               |               |               |               |

|  | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 |
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| <b>Value Chain Interventions - Papua Region</b>  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 1: Kokonao Fish Cooperative Development</b>  |        |        |        |        |        |        |        |        |        |        |        |        |
| Organize fish and Ice supply line from and to surrounding Villages                             |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on preventive maintenance for ice machinery, boat and engine, energy and water supply | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |
| Training on crab production  | 20     | 20     | 20     | 20     | 20     | 20     | 30     | 30     | 30     | 40     | 40     | 40     |
| Training on fiberglass canoe building  | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     |
| Training on use and operation of ice plant   | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| Cooperative business management training   |        |        |        |        |        |        |        |        |        |        |        |        |
| Marketing study for seafood products for export  |        |        |        |        |        |        |        |        |        |        |        |        |
| <b>Activity 2: Moanemani Coffee Development and Marketing Activity</b>                         |        |        |        |        |        |        |        |        |        |        |        |        |
| Cooperative business management training   |        |        |        |        |        |        |        |        |        |        |        |        |
| Organic and fair-trade certification process   |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on use and operation of processing machinery  | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |
| Training on Coffee processing, quality control, cupping for export quality                     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     | 15     |
| Training on coffee growing, harvesting and processing  | 75     | 75     | 75     | 75     | 75     | 75     | 75     | 75     | 75     | 75     | 75     | 75     |
| Training on preventive maintenance for coffee processing machinery, energy and water supply    | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| <b>Activity 3: Wamena Coffee Development and Marketing Activity</b>                            |        |        |        |        |        |        |        |        |        |        |        |        |

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| <b>Value Chain Interventions - Papua Region</b>   |        |        |        |        |        |        |        |        |        |        |        |        |
| Cooperative business management training  |        |        |        |        |        |        |        |        |        |        |        |        |
| Organic and fair-trade certification process  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on use and operation of processing machinery   | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     |
| Training on Coffee processing, quality control, cupping for export quality                          | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| Training on coffee growing, harvesting and processing   | 125    | 125    | 125    | 125    | 125    | 125    | 125    | 125    | 125    | 125    |        |        |
| Training on preventive maintenance for coffee processing machinery, energy and water supply         | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |
| <b>Activity 4: Agimuga Agriculture Development and Marketing Activity</b>                           |        |        |        |        |        |        |        |        |        |        |        |        |
| Cooperative business management training  |        |        |        |        |        |        |        |        |        |        |        |        |
| Building of swine farm with intergraded breeding center   |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on use and operation of agriculture and rice processing machinery                          | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     |
| Technical assistance on swine-production  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on preventive maintenance for transport and agriculture equipment, energy and water supply | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |
| Training on rice and swine production   | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     |
| <b>Activity 5: Hoca/Tsinga Coffee Development and Ecotourism Activity</b>                           |        |        |        |        |        |        |        |        |        |        |        |        |
| Cooperative business management training  |        |        |        |        |        |        |        |        |        |        |        |        |
| Rain Forest Alliance, Organic and fair-trade certification process                                  |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on use and operation of processing machinery   | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     | 10     |

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| <b><i>Value Chain Interventions - Papua Region</i></b>                                      |        |        |        |        |        |        |        |        |        |        |        |        |
| Training on Coffee processing, quality control, cupping for export quality                  | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| Training on coffee growing, harvesting and processing                                       | 25     | 25     | 25     | 25     | 25     | 25     | 25     | 25     | 25     | 25     | 25     | 25     |
| Training on preventive maintenance for coffee processing machinery, energy and water supply | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      | 5      |
| Assessment and baseline study for ecotourism  |        |        |        |        |        |        |        |        |        |        |        |        |
| Establish ecotourism tour program   |        |        |        |        |        |        |        |        |        |        |        |        |
| Establish and train organization for ecotourism   |        |        |        |        |        |        |        |        |        |        |        |        |
| Build infrastructure and set up management for ecotourism                                   |        |        |        |        |        |        |        |        |        |        |        |        |
| Train service personal for ecotourism   |        |        |        |        |        | 20     | 20     | 20     | 20     | 20     | 20     | 20     |
| Market research and marketing for ecotourism  |        |        |        |        |        |        |        |        |        |        |        |        |