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COMPETITIVENESS**

# Albanian Agriculture Competitiveness (AAC)

Year One Work Plan:

July 13, 2007 – September 30, 2008

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May 2008

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

RAISE Plus IQC No. EDH-I-00-05-00004-00/08

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## Acronyms

AAC	Albanian Agricultural Competitiveness Program
AFADA	Albanian Fertilizer and Ag-Input Dealers Association
AUT	Agriculture University of Tirana
AVC	Agribusiness Value Chains
BDS	Business Development Suppliers
BSP	Business Service Providers
CTO	Cognizant Technical Officer
ESP	USAID Environmental Services Program
FFV	Fresh Fruits and Vegetables
GAP	Good Agricultural Practices
GoA	Government of Albania
HACCP	Hazard Analysis Critical Control Point
Ha	Hectare
IDRA	Institute for Development and Research Alternatives
IFOAM	International Federation of Organic Movements
IFC	International Finance Corporation
ISO	International Standards Organization
M&E	Monitoring and Evaluation
MIS	Market Information System
MoAFCP	Ministry of Agriculture, Food and Consumer Protection
MSME	Micro, Small, and Medium Enterprises
MSU	Michigan State University
NGO	Non Governmental Organization
OTF	On the Frontier
RDI	Rural Development Institute
SOP	Standard Operating Procedure
SPS	Sanitary and Phyto-Sanitary Standards
SHD	Super High Density
STTA	Short-term Technical Assistance
TRG	Training Resources Group
TTC	Technical Transfer Center
USAID	United States Agency for International Development

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## EXECUTIVE SUMMARY

In Year One, the project will focus on **improving** productivity and quality at the farm level for high-value products in demand in the market and **linking** this production to effective buyers. The project objectives are divided into three component areas (1) building producer capacity to increase farm-level productivity, cost competitiveness, and post-harvest management; (2) strengthening market development capacity in order to tie production to viable market opportunities, and (3) improving access to accurate timely marketing information.

In the first year, AAC will identify “demanding customers” to work with who can benefit from project assistance – forward-looking retailers, consolidators, and other intermediaries willing to pay a premium price for quality. Ensuring that price signals from the market are transmitted to all levels of the value chain to provide incentives to upgrade production and improve quality will be critical to success. AAC will customize the assistance to each participant in the value chain based on the specific needs of the chain as identified during the value chain assessments. In order to encourage adoption of new technologies that improve productivity, the grant program will be aimed at reducing the risks of implementing new technologies throughout the value chain.

In the first year of the project, AAC will work in four value chains which will serve as models for additional value chains on how to improve efficiency. The four commodity groups selected are vegetables, watermelons, olives, and tree fruit.

The Year One work plan is extensive and provides the foundation for the project’s future activities while being:

- **“Demand Driven”** with all key activities and major tasks linked to individuals and organizations throughout the value chain;
- **“Activity Specific”** with all associated activities focused on improving the efficiency of the value chain;
- **“Results Focused”** with specific targets that will allow us to achieve or exceed the AAC indicators.

The projected results from the three project components of the Year One work plan include:

- **Increase the production of targeted products by 2% and sales in the domestic market by 5% and in the export market by 2%;**
- **Create 20 new non-farm jobs in the input supply, processor and consolidator links of the value chain;**
- **Strengthen the capacity and/or competency of 10 public and/or private institutions;**
- **Assist 20 producers and/or suppliers to obtain credits;**
- **Establishment of a functioning market information system.**

The Year One work plan provides the foundation for the impending “roll out” of the project’s future assistance activities for the benefit of an expanded list of products, partner organizations, and producers.

This work plan provides for the training and market information needs of our clients and partners that will further improve their technical knowledge, skills and competitiveness thereby

insuring that USAID funded assistance will have a significant impact on the Albanian agribusiness sector in the ensuing years.

While the USAID funded EDEM project is scheduled for completion in September, 2008, the AAC will leverage the assistance provided by EDEM to provide the market linkages, market information, access to finance and other forms of assistance to the participants in the selected commodity sectors of the value chain. The Year One work plan provides for the orderly and seamless transition of the relevant EDEM activities into the AAC via the establishment of a transition team consisting of key personnel from both projects.

***The Year One work plan will work to improve the competitiveness of the maximum number of Albanian producers in the selected commodity groups. The programs and activities are focused on the following key objectives.***

- ***Increasing the competitiveness of Albanian producers, input suppliers, processors and consolidators by introducing new technologies; increased access to finance; improved product handling, input conservation and enterprise management.***
- ***Increase the annual sales, both domestic and export of the selected agricultural products.***
- ***Generate both farm and non-farm employment.***
- ***Create a system which provides reliable and useful market information for all participants in the value chain and train all potential users of this information in its application.***

# IMPLEMENTATION

## Project Organization

The AAC program has a decentralized team structure, which is designed to maximize both initial and future results. The organizational structure of AAC includes a central office in Tirana and a two regional offices, which were all opened in the first month of the project. The central office is the base for the Chief of Party, Production Specialist, Marketing Information/Monitoring and Evaluation Specialist, Grants Manager and one Agricultural Outreach Specialist focusing on northern Albania. The Tirana office is the base for technical personnel leading each of the three components and is the base for activities including marketing, market information, association development, and overall management and logistics. Technical personnel will be in the field a substantial portion of their time either working from regional offices or directly on-site with farm enterprises.

The two regional offices are located in the key agricultural production areas of Lushnja and Korça. Each regional office is headed by a Regional Linkages Specialist who is supported by Agriculture Outreach Specialists (three in Lushnja, and two in Korça). The Agriculture Outreach Specialists focus primarily on strengthening producer capacity for competitive commercial farming in the value chains selected. Capacity building will be achieved by delivering technical assistance and on-the-farm training. The Regional Linkages Specialist supervises the activities of the Agriculture Outreach Specialists in farm-level capacity building; leads the establishment of market linkages between producers and buyers at the regional level; and, oversees the ongoing monitoring of program activities and collection and dissemination of market information. Each Regional Office will work in the value chains selected appropriate for the region, assessing technical assistance needs, matching AAC expertise to meet the needs and identifying STTA requirements where appropriate.

- The 13 long-term AAC staff (including two from subcontractors) form the core long-term team, with additional support provided by four other RAISE Plus partners from the DAI IQC team that will provide short-term technical expertise in the first year:
- Michigan State University (MSU), world renowned for its work in agriculture and agribusiness, will provide short-term experts in horticulture and market development.
- A leading practitioner in rapid participatory appraisal, the Training Resources Group, Inc. (TRG), Steve Joyce, has assisted in commodity assessment and the design and delivery of outreach activities with farmers.
- The On The Frontier (OTF) Group, which has first-rate experience in competitiveness analysis, is assisting in commodity assessment.
- Highly regarded for its cutting-edge work in land rights, the Rural Development Institute (RDI), in the person of land use specialist Rob Mitchell, will recommend concrete steps enabling AAC to move forward given the existing land tenure situation, including gender issues and access to credit

## Project Operations

AAC seeks to increase the efficiency of selected value chains to meet market demand, leading to increases in domestic production, domestic sales, exports, income, and jobs in the agriculture sector. The AAC value chain approach includes a market-driven focus; activities to increase the efficiency of the value chain; and market intelligence to unify the value chain and ensure market responsiveness. Figure 1 shows how the three activity components fit into the value chain framework.

The AAC program is targeting commodities where Albania has competitive potential to fill a viable, growth opportunity in the domestic export market. Once specific market opportunities are identified, will focus on linking producers to buyers in those markets. However, linking producers to markets is not enough in Albania as production currently does not meet the demands of the market. AAC is helping value chain actors access

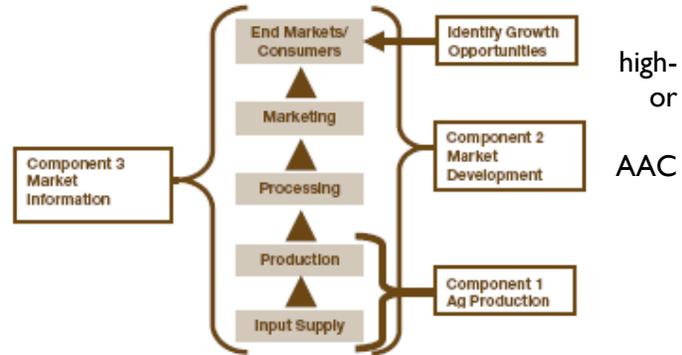


Figure 1. AAC Value Chain Approach

information on market demands that will define what products to produce, when to produce them, and what their characteristics should be, including variety, color, size, texture, processing, and packaging. AAC is focusing on increasing farm-level capacity, but also intervenes farther upstream with input suppliers and downstream with consolidators, processors, and exporters where market specifications require improvements at these levels. In the past, the Albanian agricultural sector has been propelled by supply. Our goal is to ensure that farmers' decisions are guided by the market demands and that they are better equipped to respond to market opportunities. Our model focuses on ensuring that the right financial incentives are in place for consolidating production; increasing its volume and quality; enabling processors and other buyers to offer embedded technical and financial services; and building more structured market linkages for formal sector marketing.

Market intelligence—information on current and future market opportunities, the market's specifications, and price and volume trends—is what links the value chain together. Information must flow both up and down the chain to ensure an effective response to the market. For example, if the end market demands seedless watermelons but the input supplier offers only seeded varieties, then regardless of the high quality of production or efficiency in cutting transport costs, market requirements will go unmet and the transaction will not succeed. AAC will establish a market information system (MIS) that will facilitate greater access to market intelligence and increase market responsiveness. It is market forces that will drive the activities of the AAC program and will ideally drive the decisions of farmers, traders, processors, and exporters.

## **Project Administration**

The AAC start-up team began to arrive in country at the end of July, 2007. Ms. Bronwyn Irwin, the Home Office Program Manager was the first to arrive, followed by Mr. Peter Dickrell on August 2 and Ms. Suzanne Carroll on August 4. The start-up team established temporary office facilities at the DAI EDEM office while they were investigating possible AAC project office space. This collaboration with another DAI project was of considerable importance in enabling AAC to begin a rapid start-up. Paul Sommers, the Production Specialist, arrived in country on September 1, 2007.

### **Staffing**

Mr. Bled Hodobashi was hired by subcontractor the Institute for Development and Research Alternatives (IDRA) as the key AAC Market Information Systems/Monitoring and Evaluation Specialist, in accordance with the AAC proposal. Mr. Sabah Sena will join the project in October 2008, as Producer Association Strengthening Specialist. Mr. Piro Rapushi was hired as the Lushnja Regional Market Linkages Specialist and Mr. Lefter Turtulli was hired as the Korca Regional Market Linkages Specialist. Five Agricultural Outreach Specialists were hired: Mr. Ilir Mehmeti, who will be based in Tirana and support northern Albania; Luto Goga and Josif Liko serving the Lushnja area; and Pellumb Tuxhari and Mehmet Pupa serving the Korca region. Illir Pilku was hired as the Grants Manager and Majlinda Quorri and Monika Thimo were hired as the Monitoring and Evaluation Supervisors for Lushnja and Korca respectively. Administrative positions were filled including hiring Merita Janushi as the Office Manager. The project is in the process of recruiting an Agricultural Outreach Specialist for the Saranda region.

### **Project Office**

After comparing different options for office space, the team selected office space in the building where EDEM's project is located. Mr. Dickrell signed the lease and the office move in was completed by September 1, 2007. A very successful project launching ceremony was held in September by USAID Mission Director Edward T. Landau during the KASH International Agricultural Trade Show in Tirana. The Korca Office was launched in the presence of USAID's Deputy Assistant Administrator Douglas Menarchik.

### **Banking and Related Matters**

The AAC team opened two bank accounts at the American Bank of Albania, using the master account of DAI in Albania. AAC now has one bank account for US dollars and another bank account for Albanian Lek. The DAI home office began wiring money into the new bank accounts. Ms. Suzanne Carroll worked on numerous other administrative start-up tasks including procuring computer equipment (in accordance with federal regulations regarding source and origin) and project cell phones locally, and assembling the AAC Personnel Policies Manual and Operations Manual.

### **Introductory Meeting with USAID**

The start-up team had a meeting at USAID with the project Cognizant Technical Officer (CTO) and Director of Economic Growth. During the meeting the team discussed potential candidates for the value chain assessments and the need for travel approval for STTA consultants. They received comments and suggestions from the CTO on project start-up activities, including contact with Albanian government agencies and officials. The Mission Director and CTO formally introduced the Chief of Party of the project to the Minister of Agriculture and talked about opportunities to work together.

# VALUE CHAIN SELECTION, ASSESSMENTS AND ROUNDTABLES

## Sub Sector Selection

The Subsector selection process identified five subsectors that appeared to have the strongest potential for economic growth and also met the other development objectives of the AAC program. These sub sectors included those pre-selected during the proposal phase, olives, watermelons and vegetables, and two additional commodities, cultivated herbs and tree fruit. USAID approved four of these sub sectors, leaving cultivated herbs for possible future activities.

The methodology employed for subsector selection was designed to achieve a rapid selection of prioritized subsectors, while taking into account the various objectives of the project and minimizing inherent bias. The criteria for subsector selection can be found in Table I along with a brief description of each criteria. Recognizing that not all criteria are equally able to measure the ability to achieve project objectives and viability of engagement, the criteria were weighted according to their relative strength for subsector selection.

Table I. Subsector Selection Criteria

	Selection Criteria	Description	How measured	Weighting
Competitiveness	Estimate of domestic market demand	Measure import displacement & local market potential	Imports from EU; secondary data of local market	5
	Estimate of unmet export market	Measure export potential	Trade analysis of exports to EU, Serbia and Croatia	4
	Current excess processing capacity	Unmet demand in domestic processing industry	local knowledge of processing subsector	3
	Forecast processing capacity in 2012	Estimated future demand of processing industry	local knowledge of processing subsector	1
	Degree of product differentiation	Relative competitiveness of Albanian product	local knowledge of subsector; secondary data	2
	Untapped Value Added	Ability to increase value of final product	local knowledge of subsector; secondary data	3
	Transportation/ Distribution	Identifying constraint, largely related to perishability	local knowledge of subsector; secondary data	2
Feasibility	Lead firm(s) present	Potential for embedded services; leadership	local knowledge of subsector; secondary data	4
	Nascent producer groups	Ability to reduce project and market transaction costs	local knowledge of subsector; secondary data	3
	Results by 2012	Results within AAC lifetime	local knowledge of subsector	5
	Capital requirements	Identify potential capital constraint	local knowledge of subsector; secondary data	2
Development Criteria	No. of farmers engaged in subsector	Potential scale of impact	MoAFCP data	4
	Potential area in production 2012	Potential to increase production	MoAFCP data	2
	Potential to increase incomes	Potential scope of impact	local knowledge of subsector; secondary data	5
	Potential to increase productivity (yield/ha)	Potential scope of impact	local knowledge of subsector; secondary data	3

## Value Chain Analyses

In the first quarter of the project value chain assessments were carried out for the four selected subsectors: vegetables, watermelons, olives and tree fruit. Bronwyn Irwin provided short-term technical assistance to introduce the staff to the value chain concept and train the staff on value chain analysis, as well as to conduct the analysis of the watermelon subsector. Each of the value chain assessments included a brief summary of the status of the subsector, information on market trends, value chain maps, a description of market participants and inter-firm relationships, and constraints and opportunities including proposed areas for AAC intervention.

The assessment process was highly participatory, drawing on the expertise of value chain participants and, in so doing, contributing to the development of a shared vision for the particular value chain. The assessment teams for the completed studies were as follows:

Vegetables: Mr Piro Rapushi

Watermelons: Bronwyn Irwin

Olives: Mr. Ilir Mehmeti.

Tree Fruit: Ilir Pilku.

The key findings and planned activities of the Assessment Teams are discussed below.

### Vegetables Value Chain

*Subsector Status:* The supply chain for year round vegetables is geographically diverse, employing thousands of producers and a range of businesses that are linked to production including traders, transporters, and suppliers of seeds, fertilizers, pesticides, fuel, machinery, irrigation equipment and other inputs. The sector has seen steady growth in terms of hectares cultivated, diversity of crops, length of growing season, and output. This is due to growing market demand both domestic and export markets for high quality produce. While imported fresh fruits and vegetables still have a significant majority of the domestic market share, there is good potential for import displacement. To achieve this, the current value chain must become more efficient which will also open up more opportunities for export.

*Key challenges to improving the value chain:*

- Changing the farmers' approach from producing seasonal products and then searching for a market to producing high quality and high value products based on the demands of the marketplace. This will require assisting the farmers in developing farming enterprises requiring modern business management skills in order to grow.
- Reducing the high transaction costs of individual growers for production, marketing and finance by promoting Good Agricultural Practices (GAP) to improve production efficiency and facilitating cooperation with other growers in the formation of producer groups.
- Securing sources of information on production, marketing and financial issues that are reliable and transparent.
- Specific issues identified by value chain members:
  - Limited access to high quality certified seeds and planting materials and other inputs
  - Excessive pesticide use and residue
  - Open air markets remain important but have not adopted improved technologies

- Limited market information
- Limited options for farm gate sales
- Absence of basic post harvest facilities near growers fields
- Rough handling of produce throughout the value chain resulting in high product losses
- Limited access to seasonal working capital

#### Watermelon Value Chain

*Subsector Status:* The watermelon sector is one of the fastest growing segments of commercial farming. It is estimated that there are 8000 hectares of watermelon production primarily in Saranda, Divjaka, Berati, Fieri and Lezhe with highly fragmented production and few producer groups. The average yield is currently 30-40 tons per hectare, but some producers are achieving yields of 100 tons per hectare demonstrating plenty of room for improvement in production efficiency. There is broad adoption of technology in key growing areas including temporary plastic tunnels, drip irrigation, fertigation, hybrid varieties, and planting from seedling. Lezhe has good potential for watermelon production, but most growers in the region are producing in open field, leaving great room for improvement. The domestic market for watermelons is saturated in the summer months. There are good and growing regional market opportunities and previous exports have gone to Kosovo, Montenegro, Macedonia, Romania, Bulgaria, Serbia and Croatia and EU countries. There are also emerging opportunities in Western Europe for seedless watermelons. There has been some experimentation with seedless watermelon, but no major investment in production of seedless watermelon varieties due to market risk.

#### *Key challenges to improving the value chain:*

- Current marketing is very opportunistic with farmers basing decisions on price with no long-term planning. The result is highly volatile supply and prices.
- Consolidation of production at the farm level will be required to improve market efficiency to access export markets, especially in Western Europe.
- Shift to seedless varieties will be required to access new regional and European markets.

#### *Specific issues identified by value chain members:*

- Marketing approach is opportunistic and highly fragmented
- Farmers complain about quality of fertilizer, but also believe they use too much as advised by input suppliers; very few farmers do soil tests
- Farmers complain about inconsistency in seed quality and germination issues even with hybrid varieties; there is also a perception that watermelon from seed is higher quality than from (grafted) seedling
- Agronomic issues including disease, farmers complain of problems with nematodes, fusarium, xanthomonas (bacteria), and rhizoctonia (fungus); pruning techniques; and first flower drop
- Absence of adequate transportation
- Specific packaging materials for export market are not available
- In particular for the export market, sorting, packing are essential; facilities almost non-existent
- Problems on both sides abiding by verbal contracts
- Working capital is mainly provided through input supply dealers and some traders
- Technical production information is provided by input supply dealers

## Tree Fruit Value Chain

*Subsector Status:* Commercial production of tree fruit is found throughout most of the country. A main tree fruit, apple, tends to be concentrated in the Korca region and in a few parts of the Coastal Region. The domestic demand for tree fruits year round is strong with imports holding a sizable portion of the market, especially in the off season. Reliability in terms of quality, quantity and timing are main reasons for the presence of tree fruit imports. While agro-climatic conditions are highly favorable for production, commercial growth in the sector remains challenging. Policy issues related to secure land titles, reluctance to rent orchard land by land owners on a long term basis, and fragmentation of small land parcels are viewed as challenges to expansion. Nevertheless new orchards are being established and a fledging supply chain is operating.

*Key challenges by those involved in the value chain:*

- As new orchards are a long-term investment with returns not realized for several years, the farm management decision making process is critical to ensuring tree fruit enterprises will be successful
- Growers need reliable information on high-value varieties, cost-efficient orchard production, secure markets, and access to timely financing.
- The small quantities of high quality tree fruit makes consolidation for marketing purposes problematic. The large quantities of low quality tree fruit offered by small growers are of marginal interest to fruit processors who pay low prices.
- Storage by growers of high-quality tree fruit as a marketing strategy is in its early stages. Most growers sell immediately after harvest, driving down their farm gate price.
- Financing on terms attractive to growers is very limited for establishing new orchards and for seasonal working capital
- Effective functional fruit tree growers groups are not establish.

## Olives Value Chain

*Subsector Status:* The commercial olive industry of today is characterized by thousands of resource poor small family orchards producing either table olives or oil (or both) resulting in very poor yields; small processors with limited capacity and finances; and marketers selling specialty artisan oil products (extra virgin or “bio”). As a result the supply chain is inefficient and transaction costs are high. Traders import olives and subsidized oil from neighboring countries and Albanian producers struggle to compete with these highly competitive prices. Imported products are also of consistent quality and are available in quantities that meet market demand. However the local olive industry is showing signs of growth and market share is improving. Albanian consumers say they prefer local olives and oil. However the value chain for both oil and table olives will need to become much more efficient in order to sell in the domestic market.

*Key challenges to improving the value chain:*

- Changing the mindset of growers toward olives as a low input management system to a commercial mindset of producing and marketing high value olives
- Need further development of high-value production and increased production of specialty niche olive products and linkages to specialty buyers

- High density planting systems need to be promoted where appropriate for both high value table and oil as the current small orchard size with traditional planting distances is not commercially viable.
- Growers access to financing for new orchard establishment and for working capital is limited
- Effective functional olive tree growers groups are not establish
- Processors need greater access to working capital in order to develop multi year contracts and supply inputs to commercial growers to purchase their olives

### **Regional Agricultural Roundtables**

The AAC program conducted a series of Regional Agricultural Roundtables after the completion of the Value Chain Assessments. The purpose of the workshops was threefold:

- To introduce the USAID Albanian Agriculture Competitiveness (AAC) Program
- To build a common understanding among key stakeholders in the region regarding the current situation and the key issues that the project needs to address on both production and improving market linkages
- To share perspectives on ways to address these problems

The Regional Agricultural Roundtables served as an initial step in developing among all actors in the value chain common vision of the future for the value chain. This shared vision of the upgraded chain is an essential step to ensuring collaboration among the value chain actors.

The Training Resources Group consultant, Steve Joyce, provided support in the initial roundtables. Mr. Joyce facilitated Regional Agricultural Roundtables in Lushnja and Berat. The Lushnja roundtable held on October 9<sup>th</sup> focused on high value watermelons and vegetables, while the Berat roundtable held on October 10<sup>th</sup> focused on high value vegetables, primarily grown in greenhouses. Additional Roundtables were facilitated by the AAC team in Berat on December 18<sup>th</sup>, focusing on table olives, and in Korca on January 30<sup>th</sup> focusing on apples.

## TECHNICAL COMPONENTS

### Overview

During Year One, the AAC team will work across 4 commodity sub-sectors of the Albanian agribusiness industry – vegetables, watermelons, olives, and tree fruit. The focus during the first year of the project will be to establish understanding and credibility with the key players in the value chains. Through this process, the project team can demonstrate that it is technically skilled and earn the reputation necessary to be a credible partner for Albanian agricultural enterprises.

The Year One work plan is formatted into a table consisting of the proposed tasks, activities, objectives, results, timing, and lead staff according to the following components:

1. Component I: Strengthening producer capacity for competitive commercial farming
2. Component II: Strengthening capacity for market development
3. Component III: Increasing access to and use of timely and reliable market information
4. Project Management: Monitoring; Reporting and Other

The work plan is expansive, but yet, is designed to provide USAID with a full understanding of the work to be done and a clear roadmap for the technical team. Some of the detail provided in earlier submissions is provided in annexes attached to allow for easier reference and comparison of data.

Annex I – Training Plan for 2007-2008 Outreach Program

Annex II – Background and Details of Proposed Field Demonstrations 2008

Annex III – Descriptive Details of Component Activities

Following (on page 12) is the table containing all the components, tasks, activities, objectives, results, timing and responsible staff.

## ANNEX I

### Training Plan 2007-2008 for Outreach Program

#### Lushnja Office: Greenhouse and Watermelons

Nr	Topic	Date/Location	Participants	Resource Person
1	<b>Watermelon Technology Improvement Package (seed and seedless)</b> New methods of irrigation Use of crystal fertilizers, Use of bees for pollination	22/1/08 Divjake 25/1/08 Sarande 29/1/08 Berat	60	Prof. Sokrat JANI TTC Lushnje
2	<b>Greenhouse: Nematode management</b> Solarization as non-toxic method of treatment.	22/1/08 Berat 30/1/08 Lushnje 5/2/08 Fier	60	Jovan ANDONI Agricultural University of Tirana (AUT)
3	<b>Greenhouse Management:</b> Use crystal fertilizers for tomato and cucumber . Using Bumble Bees to improve pollination . .	12/2/08 (Gorican) 19/2/08 (Hysgjokaj)	40	Prof Astrit BALLIU (AUT) + Ylli Subashi TTC-Lushnje
4	<b>Greenhouse: Integrated plant protection.</b> Ways of protection, chemical, deadlines and doses. Tomato, cucumber, and bell pepper	22/3/08 Gorican 29/3/08 Goricaj 3/5/08 Drenovic 7/5/08 Fier	80	Harallamb PAÇO AUT + Zef Tedeschini AUT
5	<b>Greenhouse:</b> The effect of light and temperature in improving productivity	11/4/08 Gorican 18/4/08 Hysgjok	40	Prof Astrit BALLIU (AUT) + Liri Miho TTC-Lushnje
6	<b>Greenhouse and Melons: Post harvesting management.</b> Harvesting, Storage, packaging,	11/05/08 18/05/08	40	Mike Brown-EDEM
7	Greenhouse and Melons: <b>High Value Marketing</b>	11/06/08 14/06/08	40	Mike Brown-EDEM
8	Energy Efficient Greenhouse Construction	05/07/ Gorican 08/07/08 Hysgjok	40	STTA Dave Adams
9	Greenhouse and Melons: <b>Using credit for farming activities</b>	11/08/08	40	Ilir PILKU -AAC

		18/08/08		
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**Lushnja Office: Olives**

<b>Nr</b>	<b>Topic</b>	<b>Date/Location</b>	<b>Participants</b>	<b>Resource Person</b>
1	Table olive orchard management	02/08 Berat	22	Dr. Fadi Thomaj (AUT)
2	Intercropping Super High Density trees in traditional orchards	07/08 Berat	22	AAC Outreach Team
3	SHD Olive management	08/08 TBA	22	AAC Outreach Team
4	IPM Olives	06/08 TBA	10	TTC Vlore
5	Marketing for high value table olives	09/08 Berat	22	EDEM Team
6	Options for financing olive orchards	09/08 TBA	22	AAC Outreach Team

### Northwest: Watermelons and Greenhouse

Nr	Topics	Date/location	Participants	Resource Person
1	<b>Watermelon Technology Improvement Package (seed and seedless)</b> New methods of irrigation Use of crystal fertilizers Use of bees for pollination	29/1/08 Berat	2	Prof. Sokrat JANI TTC Lushnje
2	<b>Greenhouse: Nematode management</b> Biological methods of treatment.	5/2/08 Fier	2	Jovan ANDONI (AUT) Tirana Agricultural University
3	<b>Greenhouse Management:</b> Use crystal fertilizers for tomato and cucumber. Using Bumble Bees to improve pollination	12/2/08 (Goriçan)	2	Prof Astrit BALLIU (AUT) + Ylli Subashi TTC-Lushnje
4	<b>Greenhouse: Integrated plant protection.</b> Ways of protection, chemical, deadlines and doses	22/3/08 Goriçan	2	Harallamb PAÇO (AUT) + Zef Tedescini Tirana Agric. Univ
5	<b>Greenhouse:</b> The effect of light and temperature in improving productivity	11/4/08 Goriçan	2	Prof Astrit BALLIU (AUT) + Liri Miho TTC-Lushnje
6	<b>Post harvesting management.</b> Harvesting, Storage, packaging,	18/06/08-Lezhë	15	Mike Brown-EDEM
7	<b>Greenhouse and Melons :</b> High Value Marketing	18/06/08 Lezhë 25/06/08	15	Mike Brown-EDEM
8	<b>Greenhouse and Melons:</b> Using credit for farming activities	11/07/0 Lezhë 18/07/08	15	Ilir PILKU -AAC

**Korça Office: Apples**

<b>N</b>	<b>Topic</b>	<b>Date</b>	<b>Participants</b>	<b>Resource Person</b>
1.	Winter Pruning	February	42	AAC Staff
2	Fertilizing (based on soil analyses)	March	21	AAC Staff/TTC
3	Sprays/IPM	April-August	22	AAC Staff/TTC
4	Apple thinning	June	24	AAC Staff/TTC
5	Green Pruning	June-July	21	AAC Staff/TTC
6	GAP standards	July	18	Alcebo
7	Links with Finance Institutions (in tandem with other trainings)	Ongoing	44	AAC-Tirana
8	Selection of Seedling varieties	July	5	MSU
9	Harvesting for maximum quality	August	21	AAC Staff
	<b>TOTAL</b>		<b>218</b>	

## ANNEX II

### Commercial Growers Field Demonstrations\*

		<b>Activity</b>	<b>Month</b>	<b>Expected Result</b>
<b>Korçë</b> Number of field trials to achieve Task #2: 18 (6 x 3 sites)	1.	Pruning	February - March	Pruning to improve quality of fruiting wood
	2.	Improving soil fertility	February - March	Soil test through use of Rapid Test Kit (USA). Correct amount of macro-nutrients to reduce input costs
	3.	Integrated Pest management	April - August	Traps and use of bio-safe pesticides
	4.	Fruit thinning	June	Removal of poor-quality fruit to increase quality
	5.	Harvesting for optimal quality	September	Show the mature characteristics and harvest requirements for top quality
	6.	Options for mobile storage	September	Place top quality fruits in temporary storage for price appreciation
<b>Lushnje</b> Total number of field trials to achieve Task #2: Watermelon: 12	<b>Watermelon</b>			
	1.	Use of grafted seedlings	March	To improve yield, early maturity, disease resistance, irrigation reduction
	2.	Double drip line fertigation	April	To improve yield, early maturity, disease resistance, irrigation reduction
	3.	Thermic plastic tunnel	March	To improve yield, early maturity, disease resistance, irrigation reduction
	4.	Honey bees for pollination	May	Improve fruit set and quality

<b>Lushnje</b> Total number of field trials to achieve Task #2: Green house:9	<b>Greenhouse</b>			
	1.	Solarization /Nematode management	July - August	Managing pest through non toxic method
	2.	IPM	March - June	Managing pests reducing costs
	3.	Energy efficient greenhouse construction	July	Reduce heating costs lengthening the growing season
	<b>Olives</b>			
	Olives: 6	1.	Interplanting super high density trees with traditional system	May
2.		IPM	June/July	Maximizing yield and quality
3.		SHD layout	July/August	Maximizing yield and quality
<b>Northwest</b>	<b>Watermelon</b>			
	1.	Use of grafted seedlings	April	To improve yield, early maturity, disease resistance, irrigation reduction
	2.	Use of Plastic Sheeting	April	To improve yield, early maturity, irrigation reduction
	3.	IPM/Trap Crop	April - July	Reduce cost of production
	<b>Greenhouse</b>			
	1.	Solarization /Nematode management	July	Managing pest through non toxic method
	2.	IPM	April – July	Managing pest through non toxic method
	3.	Energy efficient greenhouse construction	July	Reduce heating costs lengthening the growing season

\* The demonstrations are strategically linked to outreach activities. They are selected according to the identified needs of AAC value chain clients and closely coordinated with the monthly workshop subject matter specialist recommendations. The expected results will show that the demonstrated technology improves productivity in terms of quality, quantity or both.

## Field Demonstrations: 2008

**Activity 1.6: Conduct field trials with lead farmers and input suppliers to demonstrate the cost-benefit of adopting new technologies and methodologies.**

### I. Watermelon

#### Background

Watermelon production cost varies widely amongst commercial growers using grafted seedlings ranging from 7.5 lek to 10 lek /kg. or 25 % difference. With yields reaching 8 tons per 1000 sq .m this difference is significant. A series of practical demonstrations will be undertaken in grower's fields. These are based on the monthly workshop topics. Each workshop presents the cost/benefit of using the improved technology in terms of cost savings/increasing output or both. The main driver for demonstrating technology is adding **value** to the enterprise. AAC will identify lead farmers for the demonstrations. The grower must agree to follow instructions from AAC staff. AAC will perform a *return per lek input* for each technology. An MOU must be signed between AAC and the grower before proceeding. Note: labor for each field demonstration is estimated at 50 hours/ 5000 square meters. AAC plans to demonstrate five new technologies designed to improve productivity.

#### I.1. Double drip line fertigation

##### Justification

Fertigation , the combination of water and fertilizer, is used in advanced watermelon production enterprises. Albania's early season melon sector uses fertigation for the most part, especially in microclimates that favor its use.

Professor Sokrat's research work on watermelons shows that the tradition system of using one line of pipe does not reach yield potential. His work shows by adding an additional line on the other side of the melon plant that yields will increase by 5-7% without any other intervention. So if a grower is producing 8 tons /hectare the yield could increase by 7 tons or 5600 kilograms. Early melons @ 25 lek per kilo mean a potential revenue increase of 140,000 lek . The grower is expected to see an immediate return on the investment.

##### Demonstration

AAC has selected three growers from the lead farmer's network in Divjaka, Saranda, and Lushnje. Each grower will add one more line of plastic pipe to 5000 square meters of their watermelon plot. Each row of melon will have two lines instead of the usual one line. Observations will be recorded by AAC and the grower as to changes in the different stages early growth, flowering and harvest.

##### Input required

The additional piping needed for 15000 square meters.  
For 0.5 ha 2500 meters x 22.5 lek/meter = 56250 lek.

##### Expected Results.

Up to 5-7% yield improvement , earlier maturity, efficient use of fertigation, and better quality product.

## 1.2. Use of thermic plastic tunnels

### Justification

Plastic tunnels are an integral part of intensive watermelon production systems around the world. Many warm season vegetable crops can bring a higher price early in the growing season before large supplies are available. In order to encourage early watermelon production and capture the profitable early market, growers can use plastic tunnels. The use of plastic tunnels has steadily increased within the Albanian commercial watermelon sector. Recently, a few farmers have begun using plastic mulches in combination with tunnels to speed up the harvest date for some crops. According to Dr. Sokrat, the *thermic* plastic tunnel makes a difference in early growth and overall productivity. Thermic tunnels bring production ahead by 3-5 days over normal plastic. This is significant when targeting the early season market.

### Demonstration

AAC has selected three growers from its lead farmer's network to demonstrate the use of the thermic plastic tunnels. Each grower will spread the thermic tunnel over plastic mulch, under AAC outreach guidance, on 5000 square meters. Observations on growth will be taken at milestone times during the growth, and flowering stages.

### Inputs required

Thermic Plastic sheeting.

15000 square meters (3 watermelon plots @ 5000 square meters each.

Plastic tunnels: for 0.5 ha 2500 ml x 12.5 lek/ml = 31250 lek

### Expected Results

- 1) Faster maturity,
- 2) Reduced loss in plant growth due to cold temperatures

## 1.3. Honey bees-Pollination

### Justification

Use of cultivated honey bee colonies for pollination to increased flower set and yield quality is an established practice in advanced watermelon production systems. Estimated are as high as 20% better fruit set and yield by the management of bees.

The value of pollination lies in its effect on quality and efficiency of crop production. Inadequate pollination can result not only in reduced yields but also in delayed yield and a high percentage of culls or inferior fruits. With ample pollination, the grower may also be able to set blooms before hail can damage them, set crops before insects attack, and harvest ahead of inclement weather. Earliness of set is an often overlooked but important phase in the early market melons.

According to Dr. Sokrat, use of bee hives in melon production is virtually unknown in Albania. Most growers believe that wild bees suffice for pollination which is highly risky and not the case. According to Prof. Sokrat, honey bees pollinate are most efficiently within 100 meters of their hive.

### **Demonstration**

AAC, in cooperation with local bee keepers and selected growers, have agreed to rent bee colonies for critical periods in the growth of watermelon. This will be primarily during initial flowering and again during the second set of flowering.

The demonstration will be conducted at three sites: Divjaka, Lushnje, and Saranda. Observations will be recorded by AAC and the grower on number of flowers with fruit set. Fruit set will be compared to a control melon field far from the bee test plot. Yield and quality from the test plot will also be measured against the control plot.

### **Inputs Required**

Rental of three bee hives. One at each test site.

1 hive/ha = 15.000 lek.

### **Expected Results**

- Yield increase yield up to 15%
- Better quality
- Earlier maturity/higher brix

## **1.4. IPM for Melons using a trap crop**

### **Justification**

IPM is most cost effective commercial technology used by melon growers. Tactics include crop rotation, the use of natural/biological control methods, pest resistant plant varieties, pest prevention techniques, bio pesticides, and pest attractants and repellants. Attempts at promoting market driven IPM over the past few years has met with minimal results. A main reason is that the cost/benefit of using IPM was not clearly presented nor understood by growers. AAC is required to promote IPM to be in compliance with AID regulations and in accordance with AAC/PERSUAP.

Albania experts agree that most commercial melon growers overuse agro-inputs at an alarming rate of 3-5 times the recommended amounts. This has negative cost implications as well as environmental and health and safety consequences.

### **Demonstration**

The IPM package for one watermelon grower will consist of a trap crop.

AAC staff will guide the growers in planting the trap crop along side the main crop of watermelon.

Observations will be recorded by AAC and the growers on number and type of pests that are managed.

### **Inputs required**

1500 sq. meters for one plot of trap crop seedlings

### **Expected Results**

Lower pest management costs

Higher quality

In-line with Globalgap

## **1.5. Use of grafted seedlings**

### **Justification**

The main purpose of grafted seedlings is to reduce the maturity time, increase yield and improve the quality of fruits by combining a disease resistant rootstock with a genetically superior scion. The cost of buying commercially grafted seedlings ranges from 30-55 lek/seedling commercial growers of early season melon in the Lushnje and Berati areas have seen the benefits of using grafted seedlings and the practice is well established. In other watermelon growing areas in the south and north the use of grafted seedlings is not well known.

### **Demonstration**

The use of grafted seedling will be planted in Lushnje, Saranda and Northern areas. Productivity will be monitored and compared against the control plots using conventional growing techniques of direct seed and transplants that are not grafted.

### **Inputs required:**

Grafted seedlings

### **Expected Results:**

Earlier maturity  
Higher yield  
Higher quality

## **2. Greenhouse Vegetable Production**

### **Background**

Greenhouse production cost varies widely amongst commercial growers. For example tomato ranges from 28 lek to 32 lek /kg. or 10 % difference. With yields reaching 8-11 tons for the first season and 6-8 ton for the second season per 1000 sq. m this difference is important. Cucumber ranges 18-21 lek/kilo and 15-20 tons/ 1000 sq. m. A series of practical demonstrations will be undertaken in grower's fields. These are based on the monthly workshop topics. Each workshop presents the cost/benefit of using the improved technology in terms of cost savings/increasing output or both. AAC plans to demonstrate four new technologies designed to improve productivity.

### **2.1. Root Knot Nematode Management**

#### **Justification**

The spread of root knot nematode infected soils has become a major issue of concern for high value greenhouse producers. Whole crops of cucumbers have been destroyed due to nematodes. Some growers have not used their greenhouses for a few seasons due to infestation problem. Managing nematodes is a relatively new issue for commercial growers. Most use commercial nematocides kill all nematodes (beneficial /harmful). The practice is expensive and risky to health and safety of the workers and soil. Passive treatments are widely used in other countries most notably soil solarization and growing of Mexican marigolds. Use of olive oil cake, a by product from oil mill processing and often discarded as a waste product, is also useful in suppressing nematodes.

#### **Demonstration**

AAC has selected three growers from its lead farmer's network to demonstrate solarization through the use of plastic mulch.

- 1) Solarization-Each grower will spread the plastic, under AAC outreach guidance, on 1000 square meters. Observations on soil temperature will be taken over the treatment period.

**Inputs required**

- Plastic sheeting, 3000 square meters (3 plots @ 1000 square meters each.)

**Expected Results**

The solarization technique is in use in advanced farming systems. AAC expects by end of each demonstration that nematodes will be suppressed so that they no longer pose a threat to the next commercial crop.

## **2.2. IPM**

**Justification**

Use of agro-chemical based pesticides to produce greenhouse crops is a major cost and has been rising in the past few years. Most experts agree that Albanian greenhouse growers do not use agro-chemicals efficiently nor effectively adding to their cost structure. IPM for commercial greenhouse vegetables is well developed in other countries. There have been a few pilot attempts at applying IPM under Albanian greenhouse conditions for insects and diseases but the IPM approach is not widely used. AAC plans to assist Albanian growers to adapt successful IPM practices into their greenhouse operations.

**Demonstration**

IPM for greenhouse growers will consist of Eco-traps

Three growers in three different sites will participate in the demonstrations. AAC staff will guide the growers in the use of each item.  
Eco-traps- Yellow sticky traps will be hung to trap white fly and aphid.

**Inputs required**

Yellow card traps

**Expected Results:**

Higher value product  
Reduce pest management cost

## **2.3. Bumble Bee Pollination**

**Justification**

Use of bumble bees for improving greenhouse vegetable production is used in many advanced systems around the world. Advantages include:

1. In general, honeybees don't work well in greenhouses or tunnels. They are generally less effective or inadequate during periods of low temperatures (under 15°C/59°F) and cloudy weather.
2. Manual pollination is time consuming and difficult to manage.
3. Hormones often result in low quality fruits, which are not saleable (soft, malformed and seedless fruit).

Bees as natural pollinators are rarely used by Albania greenhouse growers. According to Prof. Astrit Balliu use of bumble bees will increase fruit set and overall quality when compared to spraying of synthetic hormones which is the common methods used today.

### **Demonstration**

AAC, in cooperation with selected growers, have agreed to place bumble bee colonies for critical periods in the growth of greenhouse vegetables. The demonstration will be conducted at three sites:

Observations will be recorded by AAC and the grower on number of flowers with fruit set. Fruit set will be compared to a control greenhouse far from the bee test plot. Yield and quality from the test plot will also be measured against the control plot.

### **Input requirements**

Imported bumble bees as they are not commercially produced in Albania.  
Three "Biobee " box hives @ 80 euro/box

### **Expected Result**

Higher value product through the improvement in yield and quality of fruit.

## **2.4. Double Layer Inflated Plastic Covered Greenhouse / hot water with ground pipes**

### **Justification**

Energy prices are at an all time high with further increases coming into effect in the near future. The cost of energy is around 33% of total production cost for greenhouse growers during the cool and most profitable season. The use of energy efficient greenhouse construction technology and renewable energy in the form of solar flat plate hot water units combined with soil level pipes which circulate the hot water is unknown in Albania. Based of the successful use of this combination in greenhouses in other countries it is expected to reduce costs and keep high value crops producing during the high profit cool season.

### **Demonstration**

A demonstration will be carried out with three greenhouse growers using 1000 square meters/demonstration

### **Inputs requirements**

Plastic sheeting , hot water units , and plastic pipe to cover 1000 square meters/greenhouse

**Expected Results:**

Faster maturity/ early harvest due to warm soil/root zone  
Higher percent of marketable fruit due to minimal loss from cold weather  
Lower operating cost related to energy use.

**3. Olives****Background**

Models for success commercial olive tree enterprises are still evolving. There is interest amongst a growing number of farmers in the super new high density (SHD) planting system introduced by a few Albanian pioneers. While solid data is still emerging the initial signs show that growing on small land plots a high number of dwarfed trees that mature early and produce prolifically may be a model worth promoting by AAC. This year AAC is planning to work with the few existing growers to improve the productivity of their trees and use their trees for demonstration.

**Demonstration**

AAC plans to demonstrate new technologies designed to improve productivity. These are :  
(1) Interplanting SHD trees with traditional olive trees  
(2) SHD fertigation.

**Inputs required**

Seedlings of Arbequino variety olive trees  
Irrigation pipes for fertigation

**Expected Results:**

Higher yield  
Better quality fruits

**4. Tree Fruits****Background**

Apple tree production cost varies widely amongst commercial growers. For example production costs range from 13 lek to 26 lek /kg. or 100 % difference. With yields reaching 30 kilograms per tree this difference is important. A series of practical demonstrations will be undertaken in grower's fields. These are based on the monthly workshop topics. Each workshop presents the cost/benefit of using the improved technology in terms of cost savings/increasing output or both.

AAC plans to demonstrate four new technologies designed to improve productivity. The expected results are improvement in yields, reduction in production costs, and improved quality of apples.

**4.1.Fruit tree fertilization****Justification**

Providing plant nutrients the right amount at the right time for the fruit trees is a very important and powerful factor for increasing productivity including better quality, yield

and reduced production cost. Most apple growers do not know what their soils need as they have not had their soils analyzed.

The AAC Project is showing the lead growers the use of rapid soil test kits. The project is now in the process of completing soil analyses with lead farmers. Once the data is analyzed each grower will understand which elements the soil has (N, P, and K) and determine the quantity in order to achieve yields of 30-32 kg/tree. This will lead to an average yield increase of 5-10% and reduced cost of production by up to 8%. The grower could have additional income of 124000 leke/hectare.

### **Demonstration**

In each orchard the growers will be advised as to the quantity of fertilizers to use, timing, and also the technique of applying them.

### **Inputs required**

Rapid test kits for 20 orchards

Soil analyses in the TTC laboratory for 20 orchards

### **Expected Results:**

Improved yield

Reduction in the use of fertilizer

## **4.2. Improving pest treatment**

### **Justification**

Plant protection is an essential element in apple production. Besides choosing the proper pesticides, it is important to respect the doses and treatment timing and implement the right technique with the proper tool. The appropriate spraying pump results in a qualitative distribution of the chemicals in the tree and helps to better protect it from diseases and insects. Recently atomizer pumps were introduced into orchards.

Spraying with atomizer pumps will help with integrated plant protection by reducing the number of sprays as well as the amount sprayed saving about 15000-17000 leke/ha by reducing expenditures by 8% and the cost of overall production by 3%.

### **Demonstration**

In order to realize this technique, an atomizer is needed for use in the planned demonstrations at AAC clients' orchards. The tractor and chemicals will be provided by growers. Professor Besnik Skenderasi (at Korca University) will explain to the growers the treatments against the main diseases and how to implement IPM principles. He will focus on the safe use of chemical as well as the right timing for spraying and the best chemicals for treatment and doses.

### **Inputs required**

An atomizer spraying pump (rented)

Protection dress/kit for the person who sprays

### **Expected Results:**

Better quality of apple

Reduction in the amount of pesticide used

### 4.3. Establishing new intensive fruit tree orchards

#### **Justification**

Super high density planting of apple trees is still a relatively new concept for Albanian growers. It is the preferred practice in new orchards in the Lushnje Region and AAC plans to promote high density planting orchards with Korce growers. This should result in faster production and higher yields. Orchards could have the density of 4500 trees/ha and super-intensive ones with 12000 trees/ha. Intensive orchards begin production in the second year and in the fourth year they give the full production capacity; the yield is higher (for tree and resulting in higher yields for ha); the fruit is good looking (same size, color, shape); trees are small which allows easier operations on them; use less pesticides with more effectiveness.

Production increase will provide the growers 15% more income.

#### **Field Demonstration**

The demonstration will be at an intensive apple orchard in Korce that is applying the new technology. The specialist of the TTC will explain the advantages of the intensive orchards.

#### **Expected Result**

Awareness raising of the advantages of SHD apple planting

### 4.4. Economical use of water with the drip irrigation/fertigation

#### **Justification**

Irrigated farming is insufficient in the region. Flood irrigation usually is applied in orchards with water at the volume of 1000 cubic meter/ha. This huge quantity of water has a negative impact on soil erosion, especially in hilly areas resulting in a higher cost of production. To reduce the negative factors mentioned above, drip irrigation/fertigation should be included as part of orchards. Drip irrigation increases the assimilation of fertilizers, controlling weeds, as well as pests/insects that always are present in the apple orchards.

Use of drip irrigation, will save about 500 m<sup>3</sup>/ha. Use of drip irrigation could result in yield increase of up to 20% and production cost reduction at 3%.

#### **Field Demonstration**

Demonstrations will be held in two orchards.

#### **Inputs required**

2 drip irrigation systems for a half hectare each are needed in orchard irrigation systems already installed.

#### **Expected Result**

Lower operational cost

Higher yields

Better quality fruit

## ANNEX III

### DESCRIPTIVE DETAILS OF COMPONENT ACTIVITIES

**1.1A.** AAC will directly facilitate the collaboration of commercial producers, building the capacity of emerging producer groups and encouraging the eventual formalization of these groups into for-profit entities. AAC will ensure that the right market driven financial incentives are in place to encourage producers to collaborate and that those incentives are derived from active membership in the cooperative. In the first year AAC will identify up to fifteen producer groups and provide technical assistance through our Regional Market Linkages and Outreach Specialists to build their collaborative capacity. Capacity building will include both building the internal capacity of the producer group and in service provision to members. Strengthening management capacity of the producer group will include developing by-laws and articles of incorporation, management and organizational development, financial management and accounting, contract management, and assistance developing business plans and preparing loan applications. The AAC program will also assist producer groups in providing at least one key service in the first year to their members with a direct financial impact. Initial inquiries reveal needs in areas of production technology, marketing, market information, input purchasing and options for financing.

**1.1B.** AAC will identify the current government policies and regulations on registering producer groups, including the steps required for formal registration. This will be done in consultation with Spanish Aid program that is currently elaborating the association law. This information will then be shared with producer groups that are ready to initiate the first steps to formal registration.

**1.1C.** Land fragmentation and small farm size is perhaps the single most important obstacle to improving farm level productivity and marketing in Albania. AAC will take a two fold approach to addressing this issue: we will encourage a long-term solution by working with the Government of Albania to explore the right incentives to support land consolidation through rental and sale of property with special attention to gender equity (in cooperation with GATE); and we will directly facilitate the collaboration of producers, building the capacity of producer groups and encouraging the formalization of these groups into for-profit firms.

A technical expert in land tenure issues will be provided by the Rural Development Institute, an AAC subcontractor, to conduct a short-term technical assignment. The assignment will help AAC better understanding the potential impact of land tenure issues in Albania and determine how they impact AAC partners and proposed AAC activities. These land tenure issues include the highly fragmented nature of land in Albania, the status of the rental and land sale markets, and the rights of women in land tenure. The assessment will include a review of current land laws in Albania, an assessment of the highly fragmented land situation, an evaluation of the land rental and sale markets, and incorporating gender issues, including women's land rights. The results of the assessment will include concrete recommendations on how the project might be able to mitigate these impacts. It is expected that this will help improve the direct impact of the program and may help to identify activities for policy reform in which the project may be able to have some impact.

**1.2A.** Improving the productivity, cost-efficiency, and quality of production is central to AAC, and much will be achieved by building the farmers' technical capacity, facilitating adoption of new environmentally sound technologies and methodologies, mechanizing production, and improving access to inputs.

The AAC production team lead by the Production Specialist will develop commodity-specific technical training packages to address key production constraints identified in the value chain assessments and the Regional Agricultural Roundtables. These technical packages will focus on establishing good agricultural practices by introducing appropriate new environmentally sound technology and methodologies to increase yields and decrease production costs. The AAC team will develop these technical packages drawing on their own expertise and local technical resources where available including from the Technical Transfer Centers, the Ministry of Agriculture, Food and Consumer Protection (MoAFCP), Agricultural University of Tirana, and local consultants. International expertise will only be brought in to fill gaps in local knowledge. These technical packages will be disseminated to the farmers through a variety of ways including:

- Direct training of lead farmers at monthly workshops lead by the AAC Regional Market Linkage Specialists and Outreach Specialists with groups of around 20 farmers
- (See annex 1 for proposed training schedule)
- Direct follow up meetings by the Outreach Specialists with individual producers at their farms
- Farmer field demonstration of the new technologies and methodologies presented during the monthly workshop series which will serve as AAC technical transfer centers
- (See annex 2 for proposed field trials)
- Training of trainers including lead farmers, public extension, and private extension including Opportunity Albania agronomists, input suppliers, and consolidator's agronomists who also attend the monthly workshop series. These trainers will then further disseminate the technical packages to their respective clients

**1.2B.** AAC will work with existing and new public and private extension to build their capacity in order to increase the outreach of AAC activities and ensure sustainability beyond the life of the AAC program. We will encourage buyers to invest in establishing extension services to work with their producer suppliers to ensure quality product that meets market specifications. Our approach will be learning-by-doing and wherever appropriate AAC will include these extension staff in our workshops, farmer visits, roundtables and other activities. Potential partners in this area include, MoAFCP extension, Technical Transfer Centers, Opportunity Albania agronomists, and agronomists working with input suppliers and consolidators. For input suppliers in particular AAC will work through AFADA and directly with individual input suppliers to build their capacity by working with their agronomists conducting soil tests and calculating the dosage required for individual fields.

**1.2C.** The AAC Outreach Specialists and Regional Market Linkage Specialists will identify lead farmers and others (including input suppliers, TTC, etc.) to conduct farmer field trials of new technologies and methodologies to demonstrate the impact to other growers. These trials will be closely followed by the AAC team to measure the impact and be able to demonstrate the cost-benefit of the technology.

**1.2D.** Where there is hesitation to try new technologies and methodologies, the AAC program will provide cost-share grants to reduce the risk of field trials to early-adopting lead farmers. These farmers will receive cost-share grants up to a maximum of 50 percent of the investment only for technologies new to their area and only if they agree to then serve as AAC Technology Transfer Centers for field days and to receive visits from other producers. AAC Outreach Specialists and Regional Market Linkages Specialists will closely follow the impact of the new technology or methodology to measure the impact to be able to present the model to others.

**1.2E.** The AAC team led by the Production Specialist and the Regional Linkages Specialists will work with input suppliers through AFADA and directly with individual input suppliers to assist them in variety selection that is both driven by the market and also appropriate for the agronomic conditions of their target clients. AAC will also work with seedling suppliers on improving their production practices to maximize their yields and increase quality.

**1.3A.** There is limited access to finance in Albania for farmers, especially women. The AAC team will assist producers, consolidators, and processors in accessing finance where it is needed to fill a gap in the value chain. AAC will facilitate access to finance by linking applicants with financial institutions and business development services to assist with preparing business plans and loan applications.

AAC will also work with Opportunity Albania, Credit Unions, ProCredit, Raiffeisen Bank and other finance institutions to assist them in expanding their outreach to producer groups, individual producers, consolidators and processors. AAC will explore the possibilities of agricultural leasing with these institutions. Finance institutions will be invited to present their services directly to farmers and other value chain actors at our monthly workshops and other venues. AAC will also work with agriculture sector actors to help them understand when loans may be cost effective.

**1.3B.** The project will assist AAC partners (primarily producers) to increase their basic understanding of finances including their costs of production to enable them to make better long-term planning decisions. The focus will be on simple activity-based costing, basic business planning and finance. These concepts will be introduced during the monthly workshops.

**1.3C.** AAC will promote the expansion and formalization of existing value chain finance in the Albanian agricultural sector by input suppliers and buyers. This is an important source of finance for working capital for production, and investment in productive machinery, technology, and post-harvest infrastructure.

**2.1A.** AAC will connect producers into efficient value chains with end markets in both domestic and export markets. Producers often do not take advantage of the market opportunities, waiting instead for the market to come to them at the side of the road because of lack of information on market opportunities and the high costs of transporting low volumes of produce from their individual farms.

AAC will establish a buyers' network based on our existing relationships through our sister program in Albania, EDEM and other new contacts with buyers. AAC will work with these buyers both on their marketing and buying. In this first year we will primarily work with EDEM on the marketing component and will focus on introducing them to the nascent producer groups and individual producers with whom we are working.

**2.1B** Identify key constraints in marketing from the perspectives of both the farmers and the buyers through the regional agricultural roundtables and work to resolve these issues. Issues raised include poor quality of the product, lack of response to market demands for seasonality/timing, low volume of production, price volatility, lack of trust between buyer and supplier. These marketing issues will also be covered with the farmers in the monthly workshops.

**2.2A.** AAC will facilitate access to new buyers, new market niches and new export markets. EDEM will continue to identify new market opportunities during AAC's Year 1 but by September 2008, the activities of market identification and linkages will be integrated into AAC. Three new market areas have already been pinpointed as having potential for new market

opportunities: certified products for niche markets, the Albanian tourism sector, and the nascent supermarket industry.

These potential new markets include the relatively small but rapidly expanding tourism sector, the growing supermarket chains, and other niche markets that may require certifications. AAC will ensure that local agricultural producers are linked with businesses serving the tourism industry, such as restaurants and hotels, and encourage direct sales of regional specialty products to tourists. AAC will work with the rapidly expanding Euromax supermarket chain to determine how to link Albanian producers with this expanding market opportunity. Finally, AAC will facilitate access to certifications including organic (bio), GLOBAL GAP, and HAACP where it will open new market opportunities.

**2.3A.** Raising the volume of product being marketed is essential to increasing the efficiency of the Albanian agricultural market. Activities to strengthen producer capacity, as described under Component I, will expand the volume of production, but equally important is extending the production season and decreasing post-harvest losses in volume and quality.

AAC program will work to extend the growing season through the introduction of various technologies, including new neutral day varieties, expanding plastic tunnel production, and better storage. New technologies to extend the season will be introduced using field demonstrations and grants, as described in Activity I.2D above. This technology will be disseminated through the monthly workshops with producers.

**2.3B.** Work with producers and consolidators to improve harvest methods and post-harvest management techniques to maximize product quality and minimize potential losses. This will be achieved by improving harvesting, washing, sorting, storage, and packaging. Farmers will be provided with information on the cost/benefit of each post harvest activity. Training components on these topics will be integrated into the monthly farmer workshops.

**2.3C.** AAC in cooperation with EDEM will identify existing storage facilities in Albania and work with the management to maximize the effectiveness of those facilities. In addition AAC will work with those producers, wholesalers and consolidators interested in investing in storage facilities to first analyze the viability of the investment and then to facilitate access to finance for the investment.

**3.1A.** Market information has the potential to revolutionize the Albanian agriculture sector by addressing one of the key causes of the fragmented and inefficient state of the Albanian marketing system: the lack of prompt, accurate information to inform growers to make market decisions. Competitive value chains depend on the timely flow of information from the market upstream to the producer and from the producer along the value chain to the end buyer. This information not only covers data on prices but also intelligence on product characteristics and standards required by the market, including size, color, variety, quality, and certifications; analysis of current and future market trends and opportunities; and business contacts, such as the AAC buyers' network. Market information should drive farmers' decisions on what to plant when, as well as processors' and consolidators' decisions on how to process and package.

AAC will identify the marketing information needs of the various agricultural value chain actors through the regional agricultural roundtables and interviews with key stakeholders as a basis for designing the MIS. Primary target users include producers, wholesalers and processors, while secondary target groups include input suppliers, retailers, and banks. This information will help the AAC team to design a system that is responsive to the needs of the agricultural value chain which will in turn build demand for the MIS services and ensure its sustainability.

**3.1B.** AAC will establish a system for the collection of wholesale market prices for the main AAC commodities and agricultural inputs in wholesale centers and production hotspots across the regions where the program currently works. The system will make use of the collection structure established by GTZ and housed at the MoAFCP. The scope of information will extend down the value chain to reach farmers both through data collection and information dissemination. The MIS Specialist will coordinate the establishment of this system by including public and private institutions. AAC will initiate several new forms of dissemination such as through Internet and E-mail, and also upgrade existing ones such as printed paper. The focus for year one will be to improve the practice of posting daily data in key wholesale markets and to include lead farmers and associations who will share information with other farmers in key production areas. AAC will also disseminate information through other organizations including AFADA, KASH and the Albanian Farmers Union.

**3.1C.** AAC will develop a training component to increase farmers' understanding of how to use the newly available market information in making decisions on what products and varieties to grow, when to grow it, and when and where to sell it. A basic module will be delivered to educate farmers about the importance of market information and market demand. A more extended module will target processors, wholesalers and input suppliers (Year 2). AAC will also train the data collectors and disseminators on effective collection, questionnaire design, database software use and communication skills.