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# AGRICULTURE LINKAGES PLUS (ALP) ANNUAL REPORT (FY 2012)

OCTOBER 2011 – SEPTEMBER 2012



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# CONTENTS

- EXECUTIVE SUMMARY .....IV**
- CHAPTER ONE: CONTEXT ..... 5**
  - SUMMARY OF CUMULATIVE ACCOMPLISHMENTS FOR THE YEAR .....5
  - SITUATIONAL BACKGROUND INFORMATION ..... 7
- CHAPTER TWO: FY2012 PROGRESS ..... 10**
  - PROGRESS, ACCOMPLISHMENTS AND DEVIATIONS – FY2012 WORK PLAN ..... 10
  - COMPONENT 1: IMPROVING FARM LEVEL PRODUCTIVITY ..... 10
  - COMPONENT 2: PUBLIC AND PRIVATE SECTOR SERVICE SUPPORT..... 14
  - COMPONENT 3: AGRO-PROCESSING AND EXPORTS ..... 14
  - COMPONENT 4: TRAINING AND HUMAN RESOURCE DEVELOPMENT ..... 15
  - PROGRESS AND DEVIATIONS – PROJECT PERMANENCE MONITORING AND EVALUATION PLAN .. 16
  - COORDINATION WITH THE GOVERNMENT OF UZBEKISTAN, DONORS, USAID PROJECTS, AND PARTNERS ..... 17
- CHAPTER THREE: ADDITIONAL INFORMATION..... 20**
  - COMPLIANCE WITH “IMPLEMENTATION PRINCIPLES AND KEY ISSUES” .....20
  - ADMINISTRATIVE AND FINANCE ISSUES .....23
- ANNEX A - COMMODITIES PROCURED AND REVISED INVENTORY .....28**
- ANNEX B - LIST OF FY 2012 REPORTS, ANALYSES, PRESENTATIONS AND KEY DOCUMENTS..... 28**
- ANNEX C - PERSONNEL AND SALARY SUMMARY ..... 28**
- ANNEX D - SUBCONTRACTS AND GRANTS SUMMARY ..... 28**
- ANNEX E - STATUS REPORT OF PROGRESS DELAYS ..... 28**
- ANNEX F - LIST OF FY2012 ENVIRONMENTAL SCREENS PER ACTIVITY ..... 28**
- ANNEX G - SUCCESS STORIES ..... 28**

# TABLES AND FIGURES

## TABLE

1	Overview of ALP 2012 Training Participants.....	12
2	FY2012 Actuals V. Targets for ALP PMEP Indicators .....	13
3	FY2012 Disbursement by Month and Line Item.....	21

# ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>ALP</b>	AgLinks Plus
<b>BEO</b>	Bureau Environmental Officer
<b>BFU</b>	Business Forum of Uzbekistan
<b>CCI</b>	Chamber of Commerce and Industry
<b>CCP</b>	Community Connection Program (USAID)
<b>COP</b>	Chief of Party (for USAID projects)
<b>DAI</b>	Development Alternatives Inc.
<b>EPA</b>	Environmental Protection Agency (US)
<b>FFP</b>	Food For Peace
<b>FtF</b>	Farmer to Farmer
<b>FY</b>	Fiscal Year
<b>G&amp;A</b>	General and Administrative
<b>GCCA</b>	Global Cold Chain Alliance
<b>GIZ</b>	Gesellschaft für Internationale Zusammenarbeit
<b>GOU</b>	Government of Uzbekistan
<b>ha</b>	hectare (10,000 square meters, 100 meters by 100 meters, 2.47 acres)
<b>HACCP</b>	Hazard Analysis and Critical Control Points
<b>HEP</b>	Horticultural Exchange Program
<b>HO</b>	Home Office
<b>IEE</b>	Initial Environmental Examination
<b>IFC</b>	International Finance Corporation
<b>IPM</b>	Integrated Pest Management
<b>ISO</b>	International Organization for Standardization
<b>IQC</b>	Indefinite Quantity Contract
<b>JICA</b>	Japan International Cooperation Agency
<b>LLC</b>	Limited Liability Company
<b>LOP</b>	Life of Project
<b>MASHAV</b>	Agency for International Development Cooperation (Israel)
<b>MAWR</b>	Ministry of Agriculture and Water Resources of Uzbekistan
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MFERIT</b>	Ministry of Foreign Economic Relations, Investment and Trade
<b>MOU</b>	Memorandum of Understanding
<b>ODC</b>	Other Direct Costs
<b>OH</b>	Overhead
<b>PERSUAP</b>	Pesticide Evaluation Report and Safe Use Action Plan
<b>SEAF</b>	Small Enterprise Assistance Fund
<b>UNDP</b>	United Nations Development Program
<b>USD</b>	US Dollar
<b>USG</b>	United States Government
<b>USAID</b>	US Agency for International Development
<b>UZS</b>	Uzbek Soum
<b>WFLO</b>	World Food Logistics Organization
<b>WUA</b>	Water User's Association

# EXECUTIVE SUMMARY

This fourth quarter report serves as the AgLinks Plus (ALP) Project FY2012 Annual Report for the period 01 October 2011 through 30 September 2012 per USAID Raise Plus IQC (EDH-I-00-05-00004-00), Task Order No. AID-176-TO-11-00002-00. Activities and accomplishments are summarized for the first full agricultural season of the ALP Project which follows three seasons of USAID development support to the Uzbek horticultural sector under the predecessor project, USAID AgLinks Uzbekistan. This year the ALP Project continued to build the competitiveness of strategic value chains: table grapes; stone and pome fruits; subtropical fruits; and nuts. The project achieved substantive development impacts while expanding activities with a variety of actors in the Uzbek agricultural sector including: farmers and farmer organizations; market agents, processors, and sales agents; and public food safety and horticultural support officials.

The ALP Project FY2012 Annual Report documents progress against the ALP FY2012 Annual Work Plan and the project's Performance Monitoring and Evaluation Plan (PMEP) and draws on the experience of AgLinks team members and its partners in implementing the project over the last 12 months. Eight (8) monthly and three (3) quarterly reports were submitted during the course of the year and this report draws upon observations made in these reports while offering additional reflection on trends which impact overall project results.

# CHAPTER ONE: CONTEXT

## SUMMARY OF CUMULATIVE ACCOMPLISHMENTS FOR THE YEAR

The ALP Project was launched in October 2011 as its highly successful predecessor, USAID AgLinks, transitioned into closedown mode over the remaining months of the calendar year and the first month of 2012. ALP successfully launched with timely completion of start-up milestones including the ALP FY 2012 Work Plan and the ALP Project Performance Monitoring and Evaluation Plan (PMEP). Simultaneously the AgLinks project completed its work on schedule and ceased formal operations at the end of January 2012. ALP immediately supported its stakeholders to prepare for the 2012 cropping season.

USAID AgLinks and ALP share multiple characteristics with two of particular note from the outset of this report. First, both projects were designed around the *Uzbek agricultural cropping season* and have strong seasonal components which offer unique and singular opportunities in the year to impact the targeted crops. All project activities are driven by seasonal cycles – pre-season preparations (winter); in-season production (spring – summer); harvest and post-harvest (late summer – fall). For example, winter pruning training is delivered by design in January and February (exact timing is dependent on the targeted crop) because that is when trees need to be pruned and farmers are attuned to that need. Crop type and technique change between winter and summer pruning sessions but both are seasonally dependent and can have little, no or even negative impacts if implemented at other times in the year.

Second, the first agricultural season for AgLinks Plus, coinciding roughly with FY 2012, was the *fourth in what is currently planned as a seven-season cycle* of USAID support for the Uzbek horticultural sector. ALP is poised to expand the reach and build upon the accomplishments of its predecessor project, helping the targeted crop sectors build on past successes and move to even higher levels of performance over the coming seasons. This type of long-term commitment is required to have sustainable impact in the agricultural sector which is known worldwide for being conservative and slow to change.

## BUILDING ON AGLINKS SUCCESS

With USAID AgLinks and ALP support, Uzbekistan farmers have made great productivity improvements in their orchards and vineyards over the previous growing seasons employing pruning, trellising, grafting and pollinating techniques. ALP was intended to continue, extend, expand and deepen activities across both crops and geography from the previous project. Under the existing Memorandum of Understanding (MOU) between USAID and the Ministry of Agriculture and Water Resources (MAWR), AgLinks had the legal right to work in 6 districts and one city across 3 provinces (Samarkand, Ferghana and Namangan), including Tashkent city. ALP was intended to expand to another 20 districts in the existing and an additional 3 provinces (Andijan, Bukhara and Tashkent), representing more than a tripling of potential areas in which to work. The ALP start-up also provided the opportunity for the project to move beyond short-term, in-season improvements like pruning, pest and disease control, and better tree pollination. In FY2012 the project began working with its partners to invest in more medium and long term interventions to have more structural and sustainable impact on the Uzbek horticultural sectors by introducing new plant varieties, embracing intensive orchard management techniques and installing advanced irrigation systems.

## **USAID SHOWCASE INITIATIVE**

ALP had the privilege to share its approach and impact with a wide range of visitors during FY2012. During FY2012 ALP hosted nearly 25 U.S. Government officials including two visits by U.S. Ambassador to Uzbekistan, George A. Krol, Senior Deputy Assistant Administrator of the AID/Washington Asia Bureau Denise Rollins, USAID/CAR Mission Director Erin McKee and numerous other government officers. ALP enjoys an excellent relationship with the Government of Uzbekistan (GOU) and regularly deals with the MAWR, the Ministry of Foreign Economic Relations, Investment and Trade (MFERIT) and the Ministry of Foreign Affairs (MFA). The project has particularly good relations with the sponsoring ministry, MAWR. Over the course of the year, Uzbek national, provincial, and district GOU officials have either participated in or visited ALP project activities. These include MAWR Deputy Chief for International Programs, Zakhid Salikhov, Deputy Head of Scientific Production, Mohammedjon Kasimov, and numerous district and provincial government officials.

AgLinks and ALP successes have attracted considerable attention from other development actors, especially the German International Development Agency (GIZ) and the International Finance Corporation (private lending arm of the World Bank). Over 15 visits and meetings with other donors and projects rounded out a busy collaborative calendar. Likewise ALP Team Members attended half a dozen events that showcased the projects approaches and impacts to a broad spectrum of interested development actors, including presentations on ALPs work on advanced irrigations systems and as co-sponsor of a widely-attended series of cold chain workshops conducted by ALP subcontractor, Global Cold Chain Alliance (GCCA).

## **FY 2012 TECHNICAL ACHIEVEMENT HIGHLIGHTS**

The projects many technical activities and achievements are presented in the next section of this report. Four (4) technical activities deserve particular attention:

*Development of the Uzbek Indigenous Varietals Sector:* In collaboration with Uzbekistan’s Shreder Horticultural Research Institute (Shreder) and 5 private nursery partners, ALP embarked this year to help establish a world-class indigenous Uzbek fruit tree varietal sector. The objective of these efforts is to develop a local supply of guaranteed “true-to-type” tree seedlings – including dwarf and semi-dwarf varieties - required to establish and/or maintain intensive (high-density) orchards. “True-to-type” refers to investor confidence that the seedling they purchase will give the tree and fruit they expect in several years’ time. Otherwise, their investment decisions and resources could be completely wasted. A critical component of this advanced production approach is the establishment of an in-vitro tissue culture laboratory where micro-propagation technology allows rapid production of large numbers of “genetically identical” – i.e. true-to-type, virus free - plants using a relatively small amount of space, supplies and time.

*Implementation of Integrated Intensive Orchard Management:* ALP currently assists orchard farmers to improve standard production techniques – grafting and budding of improved varietals; managing diseases and implementing Integrated Pest Management (IPM) approaches; improved fertilization techniques; and pollination tactics among others. These practices have and will continue to make substantive differences. This past year the ALP Project continued to support broader and deeper adaption of these fundamentals and will continue to do so over the life of the project, particularly in the newly targeted districts whose farmers have not yet been exposed to these standard techniques.

ALP further supported the Uzbek fruit tree sector to move beyond the standard techniques to promote the next level of productivity enhancement. That next level requires adaption and integration of three

*intensive orchard management* best practices: use of dwarf and semi-dwarf varieties; appropriate trellising; and installation of advanced drip irrigation systems complemented by the previous mentioned commitment to improved mass production of local varieties. In collaboration with both public (Shreder) and private nurseries ALP is helping to: 1) provide an assured source of locally supplied varieties; 2) demonstrate and train farmers on best practice trellising and advanced irrigation techniques; and 3) provide critical technical assistance on the integration of these three pillars of intensive orchard management required to achieve world-class production, competitiveness and profitability.

*Reducing Post Harvest Loss via Cold Chain Development:* The shelf-life of freshly harvested fruit is directly proportional to the speed with which the produce is chilled after harvest. For example, chilling a tomato within 15 minutes of harvest will add weeks to its shelf life extending the selling season and increasing sales. For apples and pears the extended selling season can reach months with subsequent direct impact on incomes. ALP has been working with producers, processors, investors and operators of cold storage facilities to improve the Uzbek fresh fruit and produce cold chain in collaboration with subcontractor GCCA and other interested donors, especially the IFC and Uzbek Chamber of Commerce and Industry (UCCI). Integration of the nascent Uzbek cold chain to others within the region and to international marketing channels offers a significant opportunity to upgrade the potential for both the import and export of chilled, cold and even frozen products.

*Horticultural Exchange Program (HEP):* The final ALP Project initiative that merits special mention is a visitor exchange program that has been implemented this year in collaboration with subcontractor International House (iHouse) affiliated with the University of California at Davis (UC-Davis). During FY2012, a total of 38 key public and private sector stakeholders participated in 4 HEP trips to California. Each visit focused on a specific theme linked to techniques and technologies promoted by the project - Pruning and Trellising of Fruit Trees and Grapes; Best Nursery Practices; Best Cold Storage Practices; and Grape and Raisin Production Best Practices.

Several aspects of the HEP are of particular note. First, these horticulture exchanges exemplify ALPs foundational approach of “look, see, do.” HEPs are a natural extension of the network of demonstration plots ALP established with local farmers across all project crops. HEP participants experienced first-hand the world-class facilities, technologies and techniques employed in the California horticultural industry through direct experience with best practice operations. These lessons are further enhanced because the California agroclimatic zones are very similar to those prevailing in Uzbekistan, increasing the relevance of the visits. The scheduled theme for each visit further enhances the experience due to its seasonal relevance with the California horticultural calendar so exchange visitors experience the operations as they happen. Finally, and most importantly, participants are not just looking and seeing, they are *adapting* what they see to their own circumstances in Uzbekistan. One participant (see “Instant Game Changer” Success Story in Annex G) called his son from California and had him change the way his field staff grafted trees based on what he had observed that very day in order to not lose a season of potential impact in his nursery business. The ALP project is achieving excellent adoption rates overall and HEP tours are an important project activity which fuel these technological adaptations which enhance adoption.

## **SITUATIONAL BACKGROUND INFORMATION**

According to the contract, ALP’s “central objective is to increase incomes through improved competitiveness of selected agricultural value chains” which is to “be done by addressing the causes of low productivity in the production of grapes and other fruits.” This section provides background

information on the geographic, crop and client choices that impact the ALP contractually mandated objective.

*Geography.* The geographic districts are determined by the MOU signed between USAID and the Uzbek MAWR and are based upon those areas in which agroclimatic and geographic conditions allow production of the targeted crops. The original MOU signed in December 2010 between USAID and the MAWR, valid until November 2013, authorized AgLinks to work in 6 districts. These districts were 3 in Samarkand Province (Samarkand, Tayloq and Payariq districts), 2 in Namangan Province (Turakuragon and Pop districts) and 1 in Ferghana Province (Kuvason District) plus the city of Tashkent. The draft amendment to this MOU, once approved, will authorize ALP to continue working in these districts and expand to 20 additional districts, some in new provinces. The 20 new districts for ALP activities are distributed among 6 provinces; 2 in Samarkand (Urgut and Bulungur districts), 4 in Namangan (Uychi, Kosonov, Chortok, Yangikuragan districts), 3 in Ferghana (Quva, Oltarik and Ferghana districts), 5 in Andijan (Andijan, Bulokboshi, Hujaobod, Marhamat, Jalakuduk districts), 5 in Tashkent (Ohangaron, Bustonlik, Zangiota, Parkent and Kibray districts) and 1 in Bukhara (Jondor District). All of these districts are on the MAWR list of targeted fruit-growing areas.

*Crops.* The major agricultural crops in Uzbekistan are cotton, wheat, vegetables and fruits with livestock also being important. Cotton and wheat have substantial state support with concomitant state oversight. Farmers in these sectors have little choice in what areas to plant and what crops to plant. The horticultural sector allows for greater degrees of freedom in decision-making by farmers than these two main field crops. This accounts for one of the main attractions of the fruit sector in Uzbekistan. Another is the country's unique genetic resource base of fruit varieties. Uzbek fresh produce was renowned during the Soviet era for its quality and flavor making it preferred over other sources. Increased productivity of the existing orchards and vineyards combined with a systematic assessment of the local varietal base and a strengthening of the local capacity to propagate this unique resource will allow for a highly competitive horticultural sector for both produce and plant material inputs (seedlings, grafting material, rootstocks, etc.) that can be marketed within and outside the region. For these and additional reasons the crop set for ALP was set on stone fruits (apricots, peaches nectarines, plums, cherries and almonds), pome fruits (apples, pears, quince), grapes, subtropical fruits (pomegranates and persimmons), and nuts (walnuts). Note that biologically almonds are considered a fruit.

*Clients/Partners.* The major client/partner group for ALP support consists of orchard and vineyard farm households but the key question is how to reach this disparate group of individuals. In the Uzbek rural areas there are two rural institutions that help solve this client dispersion problem; water users associations (WUAs) and agrifirms (AFs). WUAs function as their name implies and regroup farmers regardless of crop type. However, by combining WUA areas with known fruit production areas ALP identifies those WUAs with a larger share of orchard and vineyard farmers. WUAs assist the project by helping with the organizing of their members for trainings and other ALP activities. Agrifirms is not a generic term in Uzbekistan but instead refers to the entities that were created from the privatization of the former fruit cooperatives of the Soviet period. Operating now essentially as marketing cooperatives, Agrifirms provide another excellent rally-point from which ALP can target and organize orchard and vineyard farmers. Over the course of the last 3 years the agricultural sector as a whole has undergone two consolidations resulting in a reduced number of legally registered farming enterprises with an increased size of the average farm. According to MAWR published figures, the number of legal fruit farming enterprises has decreased from 34,221 (2009) to 22,159 (2010) and an estimated 15,739 in 2012.

ALP also works with additional public and private sector partners. These include the MAWR, Shreder and the Plant Protection Service. The latter is directly involved in the project's pest and disease identification and control program and consists of a national Center for Plant Protection and Agrochemistry and a Plant Protection Research Institute, plus implementing groups in the rural areas. In the private sector the project continues working with major fruit produce processors, mostly juicers and dryers, to establish market links and determine local demand for output. Over the course of the last two seasons the project has begun to work more closely with actors in the Uzbek cold chain as this is a vital link in the marketing of fresh produce, which always attracts the highest quality fruit and generally provides higher incomes than industrial post-harvest processing. In collaboration with the GCCA and the IFC the project has been able to identify needed areas of improvement in this post-harvest portion of the fruit value chain and will continue to expand activities in this area.

# CHAPTER TWO: FY2012 PROGRESS

## PROGRESS, ACCOMPLISHMENTS AND DEVIATIONS – FY2012 WORK PLAN

### COMPONENT 1: IMPROVING FARM LEVEL PRODUCTIVITY

#### A. Improving On-farm Water Management

*Continue/expand drip irrigation demonstrations and support* - Based on lessons learned during the AgLinks project, ALP installed drip systems at the Shreder Research Institute for the following reasons: a) farmers would only use the system when there was no other option, and b) nurseries are the best environment to apply this technique because young trees respond more quickly to fertigation than mature trees. In addition, demo plots established at public institutions serve as a training base for farmers, thus creating Public Private Partnership (see Component 3 below). One site was fully operational by the end of July (Shreder Republican branch in Tashkent Province); construction of two more sites has been initiated (Kuva branch of Shreder RI).

*Water saving* on previously established drip demo plots reached 30% when compared to 2010.

*Improve basic water infrastructure* - The assessment of Irrigation and Drainage Systems in partner organizations was initiated. The objective of this activity is to conduct an assessment of the irrigation and drainage systems of 10 ALP partner organizations including Water Users Associations (WUA) and Agrifirms (AF). The assessment will identify current issues and provide recommendations on improvements of Irrigation and Drainage Network as well as provide training programs on institutional and technical aspects.

#### B. Improving Plant Material and Agronomic Practices

##### New Seeds and Plant Material

The Government of Uzbekistan has been promoting intensive and semi-intensive orchards. Clean propagation material is essential to produce "virus-free" saplings. To support this initiative and further develop the fruit industry in Uzbekistan, the ALP project procured and distributed 51,330 apple and cherry graft-sticks, saplings and whips from Verbeek Company (Holland). Plant material will be propagated and then budded with local fruit varieties. This will make "virus free" and cheaper (than imported trees) planting material available for Uzbek farmers in coming years. By the end of FY 2012 it was reported that 68% of the material provided survived.

##### Improved Agronomic Practices

ALP conducted numerous trainings during FY2012 (see Component 4). Sessions included: nursery development; intensive pome fruit pruning; advanced winter pruning techniques; advanced nursery development techniques.

*Advanced Grape Production Techniques* - International grape consultant Andrew Teubes provided trainings in spring, summer and fall on grape production and grape nursery techniques.

Pruning, fertilization and pest and disease management were of particular interest to farmers due to their lack of knowledge on advanced technologies. New methods included “basket pruning” and a variety of trellising methods (“lyre” and “T”) for both raisin and table grape varieties. By raising the grapes off the soil, these trellises will: reduce physical damage, dust and disease; increase grape quality; and decrease losses.

*Cherry Production Consultations* – An international cherry consultant, Joseph Grant, conducted an assessment of the recent years decline in cherry production. In fact, this year’s harvest was so low that the annual cherry variety contest was cancelled. ALP engaged Mr. Grant to spend a week in the Ferghana Valley visiting cherry farmers in nine (9) districts including the Turakurgan and Uychi districts in Namangan Province; the Kuva, Kuvasay, Altyaryk, and Ferghana districts in Ferghana Province; and the Payarik and Samarkand districts in Samarkand Province. He provided individual consultations to 20 farmers on cherry production related topics such as pruning, pollination and fertilizers. After talking to cherry farmers and agronomists and analyzing local cherry rootstocks/varieties and temperature data, he determined the main cause for the declining cherry production was inadequate pollination due to a lack of sufficient pollinizer varieties in cherry orchards. Additionally, increasing temperatures during the cherry blooming season has reduced the pollination period from approximately five days to two, reducing the window of opportunity for bees to pollinate the blossoms. Lacking an understanding and/or appreciation for the need for cross-pollination, many farmers had omitted or under-planted pollinizers in their orchards in recent years.

*New Intensive Orchard Demonstration Plots* - The Uzbek government promotes the creation of intensive orchards throughout Uzbekistan, which require dwarf variety trees, trellising, reduced spacing, and managed water systems. ALP established four (4) intensive demo plots in Samarkand, Ferghana and Andijan provinces to provide locales for training and the promotion of best practices in intensive orcharding. Three different varieties of dwarf apples were provided to farmers in April. The installation of trellising systems started after the end of harvest season.

*Arrival of tools and testers* - ALP purchased orchard management tools to accompany trainings in pruning, grafting and budding for both the orchard and nursery development programs. Test equipment was also purchased to measure variables relevant to fruit quality including sugar (Brix), water (moisture), and ripeness (pressure). The tools and equipment were primarily distributed to farmers as prizes for Fruit Variety Contests and the Shreder Research Institute branches.

*Walnut assessment* – Technical staff assessed walnut orchards in Tashkent, Namangan and Fergana provinces. The purpose of the activity was to improve walnut productivity by: 1) evaluating high yield and pest and disease resistant walnut scion varieties; and 2) studying vigorous and dwarfing rootstocks to determine their potential for producing trees after one year in a nursery. All varieties recommended at the end of the assessment will be provided to two different nurseries for planting and further studying in field conditions.

*Bee pollination* – ALP established a mutually beneficial partnership with the Farmers-Beekeepers Association in Ferghana Valley. The Beekeepers Association provides bee hives and trains farmers on where to place them, how to care for the bees, and how to harvest the honey. Bee pollination increases fruit ripening and helps farmers obtain higher yields. Sixteen bee pollination demo plots on 29.2 ha were organized in Namangan and Ferghana Provinces with a total of 100

hives. This is a follow-on activity of a study conducted last year by AgLinks to demonstrate that bee pollination increases yields of certain crops up to 8-20 times.

### **Trellising**

The project installed 4,300 trellises on 21 demo plots located in Samarkand, Namangan and Ferghana provinces with the total area of 9.85 ha. Four different types of trellises will be used on four crops including apple, grapes, apricot and cherry with the majority of those being intensive orchards newly introduced in Uzbekistan.

### **Biosaline Demonstration Plots**

The project established two new demo plots in Turakurgan District of Namangan Province of roughly 0.25 ha each. Halophytic varieties of alfalfa were planted in inter rows on pomegranate fields. Bahriddin Ahmedov and Muhammad Nabiev, who are neighbors to the demo plot, saw the results and also planted alfalfa. During the first year bushes that had not previously bloomed bore fruit. Farmers noted that the first year results would not be very significant. However, they are sure that next year the situation will improve. Ten other people visited their plots to learn the technique to decrease soil salinity.

## **C. Pest and Disease Management**

*IPM Consultations* - Frank Zalom, an international consultant from the University of California, Davis with an extensive background in Integrated Pest Management (IPM), visited three (3) districts in the Ferghana and Namangan provinces during the third quarter to conduct an assessment of the most common crops pests and diseases to develop a plan to combat them. He provided several consultations to 36 farmers on the identification of the most common pests for their tree crops and grapes. He also gave advice on pesticides for combating the identified pests and their proper application, including safety equipment and practices, to limit environmental and health impacts.

*Revised PERSUAP* – The ALP Pesticide Evaluation Review and Safe Use Action Plan (PERSUAP) was updated, submitted and approved over the course of this planning period. The current PERSUAP covers all crops and pesticides used by ALP stakeholders and was also expanded to include new crops currently not included in project crops. (See the Environmental Compliance section below.)

## **D. Post-Harvest Storage and Losses**

*Household processing* - The fruit and vegetable processing training program conducted 4 trainings over the course of FY2012. The first was for household women in Turakurgan District of Namangan Province on October 14 by AgLinks consultant and food technologist Marifat Nazarova demonstrating candied fruit from melon, watermelon and pumpkin; fried salad; jam and compote. A total of 38 women participated in the training that was visited by Denise Rollins, USAID Senior Deputy Assistant Administrator for USAID/Asia. Processing training programs are organized in one of the trainee's homes to reduce participant travel time, assure support material are available (ex., water, gas, plates, electricity, etc.) and host female trainees in a familiar environment rather than more formal training premises. Printed handout materials on the training topic are given at the end of the training to all participants.

*Fruit drying and processing trainings* - In June, timed to precede the grape harvest in late July and August, Sharofiddin Mirzakhidov, Fruit Drying and Processing Specialist at the Shreder Research Institute - Samarkand Branch, conducted training programs for men and women in three (3) districts of Samarkand including Samarkand, Taylak and Payarik. As with previous household processing training programs, these programs were conducted at one of the participant's homes. Sixty-seven (67) participants,

mostly women, were taught household fruit drying and preparation methods of candied fruits from apricot, plum, sour cherry, peach and apple.

*Advanced on-farm processing and post-harvest technology* - The project and USAID's Farmer-to-Farmer program collaborated on a post-harvest training to introduce a new type of solar fruit and vegetable dryer. Twelve (12) participating farmers constructed a home-use fruit and vegetable dryer completely from local materials costing around \$50. Given farmer interest, ALP continued to test and promote this technology through the 2012 harvest season, however we later observed that the dryers were not perfectly suited to the Uzbekistan environment. We therefore began providing other types of dryers to participating farmers to compare results.

*Cold Chain and Storage* - ALP collaborated with the Chamber of Commerce and Industry (CCI) of Uzbekistan and the UNDP funded Business Forum of Uzbekistan (BFU) to sponsor a series of Cold Chain workshops conducted by experts of the Global Cold Chain Alliance (GCCA) based in Arlington, Virginia and representing multiple cold chain interests. Three (3) workshops were conducted in Samarkand, Tashkent and Namangan in May and June with over 220 participants from almost all the provinces of Uzbekistan. The course consisted of a total of seven (7) modules; cold chain overview, post-harvest handling, refrigeration and relative humidity, refrigerated transportation, design and construction, and packing house operation. The modules were covered in the manual provided to all participants in both hard and soft copies (CD with materials in 3 languages: Uzbek, Russian and English). The event was the broadly covered by national and provincial television and newspaper media.

After the workshops, approximately 40 field visits to existing cold storage facilities in Samarkand, Namangan, Ferghana, Andijan and Tashkent provinces were made by the trainers who provided specific recommendations to practitioners. A detailed report on the event and accompanying visits was submitted to MAWR in June.

Isokzhon Boimatov, a farmer from the Altirik District of Ferghana Province, said after the workshop that he previously did not know about the importance of humidifiers and disinfectants, and paid little attention to food safety. He now hopes by following the recommendations provided at the workshops that he can improve the quality and shelf life of his products as well as ensure that the consumer will receive safe food. Mahmud Haydarov, who plans to build a cold store, noted that the seminar provided him with the knowledge required for cold storage and that he could not have obtained anywhere else. He believes the training will keep him from making mistakes and ease the process. During the Cold Chain workshops, private companies involved in cold storage/export of fresh produce were identified, including Toshagroinvest from Tashkent City; as a result, a representative of Toshagroinvest, Duliev Maksudjon, participated in HEP03 focused on best cold storage practices.

#### **E. Agrifirm Production and Marketing Support**

*Variety Contests* - In rural and farming communities, word of mouth is the most viral means of information dissemination. Farmers are as curious and competitive as they are cautious; they are always interested in what their neighbors are growing. Throughout FY2012 ALP has leveraged this principle by sponsoring a series of variety competitions, bringing together farmers and their families to compare their produce at the end of a cropping season. A distinguished panel of judges uses common criteria to choose winners of the competition. Prizes – such as pruning, grafting and budding tools - are awarded to the winners and those farmers deemed most likely to adapt new and different technologies. Most importantly, while their produce is being judged, farmers exchange information and experiences, talk about the challenges they face and the approaches they use to deal with those challenges. Sometimes the project

provides specific information or arranges for a technical expert to participate in this farmer exchange. After several varietal contests farmers scheduled visits to each other's farms and winning farmers were inundated with requests of transplants and grafting sticks from their prized plants.

Five competitions were sponsored during FY 2012 – apples; apricots; peaches; grapes and for the first time pomegranate. The cherry competition had to be cancelled due to a poor crop last season. Competition categories were: 1) best processing, 2) most marketable, and 3) most unique.

The first place winner received a big lopper; second place received a small lopper; and the third place winner received a hand shear. All tools were purchased and brought from the United States. While judges were evaluating the apricots, Horticulture Exchange Program (HEP) participants spoke about their experiences in the United States. Farmers also had a chance to consult with each other, providing an excellent venue for knowledge sharing and best practices adaption. This was the fourth apricot contest and is the oldest competition event organized by the ALP Project and its predecessor AgLinks. Along with the ALP team members, USAID/Uzbekistan Country Office Deputy Director Nathan Park attended the apricot and grape events. The peach contest was attended by the Department of State staff members.

## **COMPONENT 2: PUBLIC AND PRIVATE SECTOR SERVICE SUPPORT**

*Establishment of Tissue Culture Lab* – The project conducted an assessment of the existing lab at the Horticulture Research Institute (Shreder) to determine the potential of rehabilitation and upgrades to allow modern tissue culture methods for accelerated propagation of virus free plant material. It is anticipated that the bilateral science and technology agreement signed by U.S. Secretary of State Clinton during her last visit to Uzbekistan will provide justification for bringing the tissue culture equipment and supplies into Uzbekistan duty-free. Initial discussions of the idea have been held with the Uzbek Science and Technology Committee, with the next meeting to focus on how to move the idea forward by identifying the process required to qualify under the US-Uzbekistan S&T Agreement.

*Advanced Irrigation Demo Site* - ALP completed the installation of advanced irrigation systems at the experimental plant station at Shreder. The site is located in Tashkent Province and covers an area of 2.4 hectares. It demonstrates drip, mist and sprinkler irrigation. Nursery and fruit trees are grown on the plot and an intensive orchard is planned that requires very accurate operation of watering and agrotechnology. Institute employees noted that spread (growth) had increased by three times even during the few weeks since the system was put into place and the plants already show less diseases. The site will be used during training programs that the Institute conducts regularly for farmers from all provinces of the country.

To observe the Indian experience with “Cold Dip” raisin production techniques, the project conducted a one-week study tour to India for three partners representing horticultural research, grape farmers and plant protection. As a result, there are now plans by the participants to build demonstration drying sheds in Samarkand Province; a grape farmer will modify a cap stemmer machine by adding a vacuum system; the Plant Protection Institute will provide assistance to test the product line in Uzbekistan; and an MOU was signed with an Indian supplier (Omega Fine Chemicals).

## **COMPONENT 3: AGRO-PROCESSING AND EXPORTS**

*Trade Exhibitions* - ALP Agricultural Production Adviser Shuhrat Abrorov accompanied four AgriFirm members and one agro-processor to the Moscow PRODEXPO, the largest annual specialized food and beverage trade show in Russia and Eastern Europe. Of greatest interest to the Uzbek participants were contacts made with “Solntse Vostoka,” for dried fruits, and “Lanit 99,” a trading house specializing in dried fruits and vegetables for the Russian market. Participants also visited the Moscow fresh fruit

wholesale market to experience handling, market requirements, packaging, and import procedures. Director of Muyan Sohibkorlari AF signed a contract to provide 18 tons of dried apple.

*Food Safety Certification* - In mid-October ALP assisted project partner BERAD with their recertification of ISO standards. BERAD is a major Uzbek agro-processor of fruits, vegetables and spices, and dried produce; they are one of the country’s largest exporters of raisins. The predecessor project AgLinks had worked with BERAD on upgrades of their internal testing laboratory and cost-shared marketing trips to international trade exhibitions. ALP staff member Shuhrat Abrorov assisted the BERAD AGRO raisin production plant in Parkent District, Tashkent Province during their Food Safety System (ISO 22000) recertification process. At the end of the two-day audit by TUV-NORD, an accreditation and certification company based in Germany, BERAD AGRO’s Parkent plant passed inspection and recertification was awarded for another year, enabling international sales and profits to grow. The TUV-NORD representative also conducted a preliminary audit of BERAD’s East-West Yangiyol vegetable dehydrator to determine if it met US Food Safety System requirements for production of dried paprika. He provided additional recommendations and items to address to optimize the chances of passing the upcoming audit scheduled for this plant later in the year.

#### **COMPONENT 4: TRAINING AND HUMAN RESOURCE DEVELOPMENT**

*Horticultural Exchange Program* - A recurring Horticultural Exchange Program (HEP), a study tour exchange program implemented in collaboration with the subcontractor International House at Davis (California), was designed and launched by ALP. HEP was designed to expose Uzbek agriculture professionals to training and practical experience in the US that they can adapt to their own circumstances. Each HEP focused on a main theme and supported sub-themes of relevant agricultural activities corresponding to the time of year, agricultural calendar and cropping season. Four (4) programs were conducted during FY2012 with the following main themes: “Planting, Pruning, and Trellising of Fruit Trees and Grapes”, “Best Nursery Practices”, “Best Cold Storage Practices” and “Best Grape and Raisin Production Practices.” A total of 38 participants participated; 11 from the public sector and 27 from the private sector.

**TABLE 1: OVERVIEW OF ALP 2012 TRAINING PARTICIPANTS**

Training	Province	Female	Male	Totals	
Production	Namangan	1	140	141	634
	Fergana	0	120	120	
	Samarkand	4	304	308	
	Tashkent	15	26	41	
	Bukhara	1	23	24	
Post-Harvest	Namangan	38	12	50	332
	Fergana	1	73	74	
	Samarkand	57	75	132	
	Tashkent	14	62	76	
<b>Totals</b>		<b>131</b>	<b>835</b>	<b>966</b>	
		<b>14%</b>	<b>86%</b>	<b>100%</b>	

During the first year of the project, ALP trained nearly 1,000 (including 131 women) farmers, farm workers and agribusiness staff in plant pest identification, agronomic best practices, orchard pruning, cold storage management, fruit and vegetable drying, and post-harvest techniques. The trainings were very

practical and because they are conducted at the right time participants were able to implement what they learned immediately. See the table above for details on the trainings conducted.

*Mobile Extension Value Added (MEVA) Application* - ALP began the development of a MEVA application for farmers this year. The application contains training materials in written and video formats (hands-on, do-it-yourself (DIY) style). A U.S. based film production company, Case By Case, spent a total of seven (7) weeks in Uzbekistan producing training films on stone, pome, grape, and nut tree maintenance to prepare farmers for the 2012 and beyond agricultural seasons. The following films were produced, narrated and submitted to MAWR:

- Apple tree branch training
- Winter pruning of stone fruit trees
- Planting a tree
- Disinfecting pruning tools
- Safety clothes
- Summer pruning of apricot and cherry trees

## **PROGRESS AND DEVIATIONS – PROJECT PERMANENCE MONITORING AND EVALUATION PLAN (PMEP)**

The table below presents the ALP project indicators, targets and values for FY 2012. In spite of the delay in the expansion of the project from 6 to 26 districts, ALP was able to meet its FY2012 targets at the 90% level or better for half its indicators. Those targets which deviated from this trend were negatively impacted by conditions outside of the project's manageable interest. For Indicator #4, Government policy decisions (closing borders to cherry exports at harvest period) and unfavorable weather events (mini heat wave at cherry flowering significantly reducing fruit set) limited the share of production exported.

The most significant deviations from FY 2012 targets were for those indicators (Indicators #5 to #8) which were dependent upon governmental approval to expand project activities to new districts. Because the project could not legally expand activities in FY 2012, the number of farmers, firms, producer organizations, and hectares were limited to the original 6 districts. The project made solid efforts to expand within the existing 6 districts but could not reach targets which were established based upon the assumption of project expansion in FY 2012 to a new total of 26 districts.

**TABLE 2: FY2012 ACTUALS V. TARGETS FOR ALP PMEP INDICATORS**

#	Indicator	2011	2012			Comment
		Base - line	Target	Actual	% of Target	
1	Change in income for the AgLinks Plus-assisted farmers and agribusiness, as measured by sales		15%	18%	120%	Adopting farmers producing more & better quality fruit allowing more sales at higher prices
2	Change in annual farm yields for all targeted crop commodities for all AgLinks Plus farm clients; yield per hectare		15%	24%	160%	High responsiveness of peach yields to pruning drives overall increase higher than target
3	Change in production volume for targeted commodities in AgLinks Plus-targeted districts		20%	19%	95%	Slight decrease below target mostly due to a disastrous cherry harvest caused by intense hot spell and lack of polination during flowering period inhibited fruit set. California cherry expert brought in to analyze cherry problem in-season.
4	Change in share of total production that is exported for targeted commodities from AgLinks Plus clients		10%	7%	70%	Government policy closed borders to regional exports at key harvest periods to inhibit domestic price rises and limit trade. Cherry exports further lowered due to flowering period hot spell impact on production. Adopters exported greater portion than non
5	Number of hectares under improved technologies or management practices as a result of U.S. Government assistance	2,250	10,000	2,600	26%	Project legally constrained throughout FY12 to original 6 districts & partners in those districts which limited: (5) available new farmers & farms for project interventions. Most partner affiliated orchards in approved areas already work with the project;
6	Number of firms receiving USG assistance to invest in improved technologies	561	800	571	71%	
7	Number of farmers, processors and others who have adopted new technologies or management practices as a result of U.S. Government assistance	90	2,000	1,166	58%	
8	Total number of producers' organizations, cooperatives, WUAs, trade and business associations and community-based organizations receiving USG assistance	12	40	16	40%	
9	Number of rural households benefiting directly from U.S. Government interventions	5,100	6,000	5,900	98%	
10	Person hours of training completed in private sector productive capacity supported by USG assistance	M 3,488 F 1,716 T 5,204	9,000 1,000 10,000	8,076 715 8,791	90% 72% 88%	

## **COORDINATION WITH THE GOVERNMENT OF UZBEKISTAN, DONORS, USAID PROJECTS AND PARTNERS**

### **GOVERNMENT OF UZBEKISTAN**

*Ministry of Agriculture and Water Resources (MAWR)* - ALP remains in regular and constant contact with its partners in the Ministry of Agricultural and Water Resources which has resulted in more effective project activities. For example, the MAWR partners are key supporters of the Horticultural Exchange Program (HEP) without whom the program would not be as successful as it was in FY2012. ALP also informs in writing the MAWR and other coordinating Ministries when field activities involve travel by international staff and visitors. MAWR responds by informing the appropriate provincial and district authorities of the foreign visitors in their areas of responsibility to avoid any potential misunderstandings. MAWR also provides support to project activities by informing provincial and district MAWR staff of ALP trainings and other activities for which the local ministry staff inform potential participants. All in all, the relationship with the MAWR is very positive.

*Shreder Horticultural Research Institute* - In addition to working directly with the MAWR at the national, provincial and district levels, ALP also works with organizations within the structure of this key ministry. Most importantly, the project works with the Horticultural Research Institute named after Shreder (Shreder) on a number of shared interests. In FY2012 ALP cost-shared with the Shreder central office outside Tashkent and the Kuva Branch in Ferghana Province to design, procure and install advanced irrigation system demonstration sites showcasing mist, spray, sprinkle, and/or drip irrigation techniques. These sites are used to educate farmers as well as produce nursery quality trees and serve as informational sites for other donor visits (GIZ, JICA, etc.) and the GOU (Prime Minister's office). ALP and Shreder have also worked together to test new high-yielding and pest-resistant fruit tree varieties on the Tashkent demonstration plot nursery. These varieties will be ready for transplanting from the nursery to a test orchard in FY2013. ALP regularly avails itself of Shreder technical expertise embodied within their staff by integrating them into the project's training programs. Shreder staff from both the Tashkent and branch offices in the provinces have been used as trainers within ALP programs. Shreder staff have also been included in the HEP program exchange visits to California in FY2012. The overall relationship with Shreder has improved dramatically in the last two seasons and ALP anticipates additional deepening and broadening of joint interests throughout the rest of the project.

*Plant Protection Services (PPS)* - In FY2012 the project also began to deepen the relationship with both the Republican Center for Plant Protection and Agrochemistry and the Uzbekistan Plant Protection Research Institute which comprise the plant protection service in the country. The former identifies and researches new pests and diseases while designing appropriate agrochemical and environmental responses. The Center is responsible for the implementation of the plant protection program at the national level and has 13 branch centers and 156 district plant protection groups. The major activity held in collaboration with the PPS in FY2012 was the implementation of the Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP) for Uzbekistan. The previous PERSUAP for Uzbekistan dated from 2008 and needed to be updated to include newly identified pests and diseases along with new agrochemicals on the local market. PPS staff were essential to the success of the PERSUAP process by providing input, contacts and information to inform the update of the report. Once the PERSUAP was approved the new material on pests, diseases and agrochemicals was employed in ALP training programs for farmers with PPS staff used as technical resources in the training sessions. ALP and PPS are satisfied with the level of collaboration to-date but realize that the growing threat of new pests and diseases in the horticultural sector poses a significant drain on the sector's productivity and quality. PPS and ALP agreed in FY2012 to pursue a further collaboration in FY2013 including the introduction of a pest and disease oriented HEP, training of PPS staff to become more familiar with horticultural pests and diseases, and upgrading of the detection techniques and capacity of the PPS.

*Uzbekistan Chamber of Commerce and Industry (UCCI)* - ALP collaborated with the UCCI in FY2012 to host 3 workshops on the Uzbekistan cold chain. UCCI staff were essential in assisting ALP to identify existing and potential cold store investors to participate in the workshops held in Tashkent, Samarkand and Ferghana. Follow-up sessions were also organized to visit specific cold stores for analyzing the local capacity and design subsequent training programs to raise the quality of services offered by the emerging Uzbek cold chain system to local producers, importers and exporters. The UCCI was very pleased with the quality and content of the workshops and has requested additional joint activities that ALP and the UCCI could sponsor to further enhance the cold chain within Uzbekistan in the coming years.

## **OTHER DONORS**

*German Development Agency (GIZ)* - ALP has hosted multiple visits from GIZ, including the Regional Coordinator for the Development of Agricultural Service and Extension Centers, Dr. Stefan Krull, along with a two-person project design team working on a GIZ horticultural project targeting Syrkandarya, Kashkadarya and Khorezm provinces. Collaborations are ongoing, including with KRASS, a local consulting firm established by GIZ and positioned to compete for GIZ tenders seeking local partners to take part in their new horticultural project. In June Asror Nazirov, ALP DCoP participated in a workshop organized by GIZ aimed at creating an intensive exchange on activities in the fruit production sector carried out by various donor agencies and development agencies in Uzbekistan.

*Multilaterals* - The ALP project has collaborated with a number of multilaterals: The International Water Management Institute to discuss water research and integrated water management efforts; the International Finance Corporation (IFC) investment advisory and support services to discuss the development of Uzbek cold chains; and a World Bank design team, tasked to develop a Horticultural Policy Note to describe the subsector and related policies to serve as a background document for future lending decisions.

*UN Development Program (UNDP)* - Project staff met with the UNDP staff to discuss the “Aid for Trade” Initiative in May. Project representatives Joern Rieken, Team Leader; Daniele Gelz, Project Manager; and Kamolkhon Inomkhodjayeov, Program Associate, shared project experiences and discussed potential cooperation on overlapping areas

*Israeli Development Agency (MASHAV)* - ALP irrigation expert, Dima Lunev, attended a MASHAV training entitled “Management of Scarce Water Resources and Irrigation Systems: Environmental Aspects” in Israel during the first two weeks of February. Mr. Lunev supports the advanced water management technologies demonstrations – e.g. sprinkle, mist, drip, etc. – at the Shreder Research Institute and in fruit orchards to introduce these techniques to partner organizations and farmers.

*Japanese Development Agency (JICA)* – ALP staff met with ADB project team Arino Osamu, Canal Engineering Division Director and Akiba Nobuyoshi, International Affairs Division Specialist to discuss project experiences in general and in particular about advanced irrigation demonstrations as they plan to set up drip irrigation sites in Uzbekistan.

## **OTHER USAID PROJECTS**

There are a limited number of other USAID projects in Uzbekistan with mandates covering areas of common interest to ALP. While there are no other bilaterally funded USAID projects with agricultural components, there are central and regionally funded activities which ALP has collaborated with at different levels.

*Local Development Initiative (LDI)* - While the LDI project did not have agricultural activities in Uzbekistan, ALP staff regularly consulted with LDI personnel to share insights on potential ways and means to implement project activities in the Uzbek environment. The administrative staff of both projects remained in regular contact and the proximity of the two project offices, neighboring office buildings, further facilitated opportunities to exchange experience and ideas.

*Regional Economic Cooperation (REC)* - ALP became aware of the regionally funded REC project in early FY2012 (November 2011) with a visit by the Chief of Party, Anar Shaikenova, Chemonics HO backstop, Roberto Toso, and the USAID/CAR and REC COR, Jeremy Strauss.

# CHAPTER THREE: ADDITIONAL INFORMATION

## COMPLIANCE WITH “IMPLEMENTATION PRINCIPLES AND KEY ISSUES”

The guiding principles for implementing ALP are the value chain model (a market demand approach), sustainability (local partnerships to build capacity and continuation) and scalability (replicating successful models from AgLinks, the predecessor project) to increase impact and the number of beneficiaries.

### VALUE CHAIN APPROACH

The project employs a value chain approach to prioritize project interventions with the highest payoff in terms of increased incomes. Value chains are defined as the sequence of productive processes from the provision of specific inputs for a particular product to its primary production, transformation, marketing and distribution, and final consumption. A value chain approach examines all steps of a production-to-consumption process, identifies the binding constraints and then systematically addresses those weaknesses first. By definition, a value chain approach allocates resources and focuses efforts on specific portions of the chain over others. In the present Uzbek environment this results in a focus on reviving the fruit tree nursery sub-sector and targeted water management interventions at the input level, a production focus on increasing the yield of existing orchards while promoting migration to higher yielding varieties, and post-harvest activities centered on assembling a viable cold chain in Uzbekistan to support the preservation and storage of fresh fruit as well as household level processing to increase incomes.

### SUSTAINABILITY

As the contract points out, full sustainability of activities by the end of the project is a key objective but depends upon the level and commitment of GOU support as well as local capacity. ALP focuses energies on increasing GOU interest and support for the fruit value chains and deepening local capacity to service the needs of these sectors. Specifically in FY2012 ALP deepened its relationship with Shreder and the Plant Protection Services (PPS), two key public institutions that will provide services in the post-project period; updated plant material from Shreder and pest and disease identification and control with the PPS. Commercial interest is also a strong motivator for sustainable activities so ALP has targeted increased activities in FY2012 to private nurseries by dedicating a HEP session to nurseries, providing new plant material and introducing new budding and grafting techniques.

ALP's strategy to optimize sustainability includes incorporating specialists and experts from these Uzbek institutions as partners in project activities. On a per-training-hour basis, ALP employs mostly Uzbek nationals with international experts used only in the case where suitable technical skills and experience are not locally available. In all cases of international consultants, the project insists they provide training to Uzbek nationals sufficient to allow them to assume an increasing technical leadership over the life of the project. Similarly, local staff gain additional insights and knowledge because they accompany the international experts while in-country and during their support to the HEP visits.

## **SCALABILITY**

Scalability refers to the expected broader impact of ALP over that achieved by the predecessor pilot project AgLinks. While acknowledging that AgLinks successfully identified technologies and practices with positive impact on farmers it was limited in time and budget. As the contract points out, scalability will be achieved by acting on the lessons learned under AgLinks, specifically focusing on the use of training, field demonstrations and publications to reach farmers. A major realization under AgLinks was that although most Uzbek farmers were literate and numerate they did not have access to modern scientifically-based production information, hence the importance of and success with a project focus on information dissemination.

ALP's larger budget and longer timeframe allows the project to have impact on a larger scale. A larger number of training sites would minimize farmer travel distance to observe new technologies and to personally experience them. Unfortunately, ALP was not allowed to expand its activities to include new sites in new provinces and districts because the authorizing MOU was not signed between USAID and the MAWR. Once it became clear that the MOU would not be signed in time to allow expansion to impact the 2012 growing season (essentially March 2012) the project began to strategically design and integrate activities with potential national level impact. These included identification of and targeted assistance to private nurseries in the existing authorized districts, renewed focus on how best to support the Plant Protection Service with its national scope of 156 plant protection groups, increased assistance to Shreder's nation-wide presence including provincial level branches and district level stations, design and drafting of a plan to implement a tissue culture laboratory in FY2013 and the production of short films in Uzbek on a number of horticultural training topics. All of these efforts will have national level impact even if the MOU is not signed and will only strengthen the ultimate outreach of ALP activities once the MOU is signed.

## **ENVIRONMENTAL COMPLIANCE**

ALP made good progress in FY2012 to assure environmental compliance in this fiscal year and throughout the duration of the project. Key elements of this progress were the training of ALP staff, updating of the Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP) for Uzbekistan and the creation of a project Environmental Manual and Framework Mitigation and Monitoring Plan (EM/FMMP). ALP staff member Sunnat Djalalov was designated Project Environmental Officer (PEO) and attended "The Original Environmental Compliance Boot Camp" in December 2012 organized by the Archer Institute of Environmental Management in Annapolis, Maryland, a recognized leader in environmental compliance training.

The earlier PERSUAP for Uzbekistan had been completed and approved in 2008 and needed to be updated to account for new pests and diseases along with new agrochemical information that were identified or developed over the last 4 years. In late 2011 ALP hired a plant pathologist to prepare a revised PERSUAP for Uzbekistan which was completed, submitted for review and finally approved by July 2012 by the Bureau Environmental Officer (BEO). Prior to this approval the project implemented pest and disease related activities based upon the previously approved PERSUAP. The revised and updated PERSUAP will be the basis of all pest and disease activities of ALP beginning with the 2013 season. In addition to the revised PERSUAP the project engaged an environmental specialist to provide training to project staff and develop a project specific EM/FMMP. This document also underwent a successful peer review leading to final approval and presently guides project activity planning and the environmental screening process.

Initial environmental screenings were developed all ALP technical activities implemented in FY 2012. A total of 28 technical activities were implemented in FY2012 with the majority (82%) identified as no risk (Risk Level 1; 11 activities) or no significant risk of negative environmental impact (Risk Level 2; 12 activities). Most Risk Level 1 and 2 activities consisted of exchange visits, trainings and assessments with the latter being those that had explicit environmental attributes that the screening identified including specific training content (ex., integrated pest management (IPM) trainings, grape trainings which included pest control recommendations, HEP visits with IPM or pest and disease related sessions, etc.).

The remaining activities were all classified as *possible impact but can be mitigated* (Risk Level 3; 5 activities). There were no FY2012 activities identified as Risk Level 4 (highly risky). The five activities identified as Risk Level 3 were trellis production, bee pollination services, dwarf apple sapling procurement, advanced irrigation system installation and tissue culture laboratory design. Trellis production and advanced irrigation system installation impacts were mitigated by improved technical specifications and close monitoring of the local suppliers throughout the activity. The major risk associated with the pollination program was to the bees themselves from unauthorized spraying during the flowering period and ALP made special efforts to inform all neighboring farmers of this restricted period. The dwarf apple procurement insisted on formal certificates of origin for all saplings that explicitly stated they were virus-free and true-to-type varieties. Finally, the tissue culture laboratory design was initiated by engaging an international consultant to visit the proposed site, make recommendations and assist in both the specifications and design of the prospective lab.

## **GENDER**

The gender balance in Uzbek agriculture is skewed, as it is in most other countries of the world (ex., USDA reports 14% of the 2.2 million US farmers are female). Uzbekistan reported 7.2% of the 235,000 registered farmers in 2008 as female prior to the sector consolidations of 2009 and 2010. These consolidations reduced this overall figure to 80,628 with the MAWR reporting 66,406 legally registered farmers in 2012. Assuming the consolidations of the last few years have stabilized and were gender neutral then the total number of female farmers would be 4,781 across all crops. New entrants as legally registered farming enterprises are possible but counter to this trend promoted by existing policy to reduce the overall number of legal farming enterprises and increase their average farm size. After consolidation, the minimum farm sizes are 5 hectares for orchards and 30 hectares for field crops (i.e., cotton, wheat, etc.).

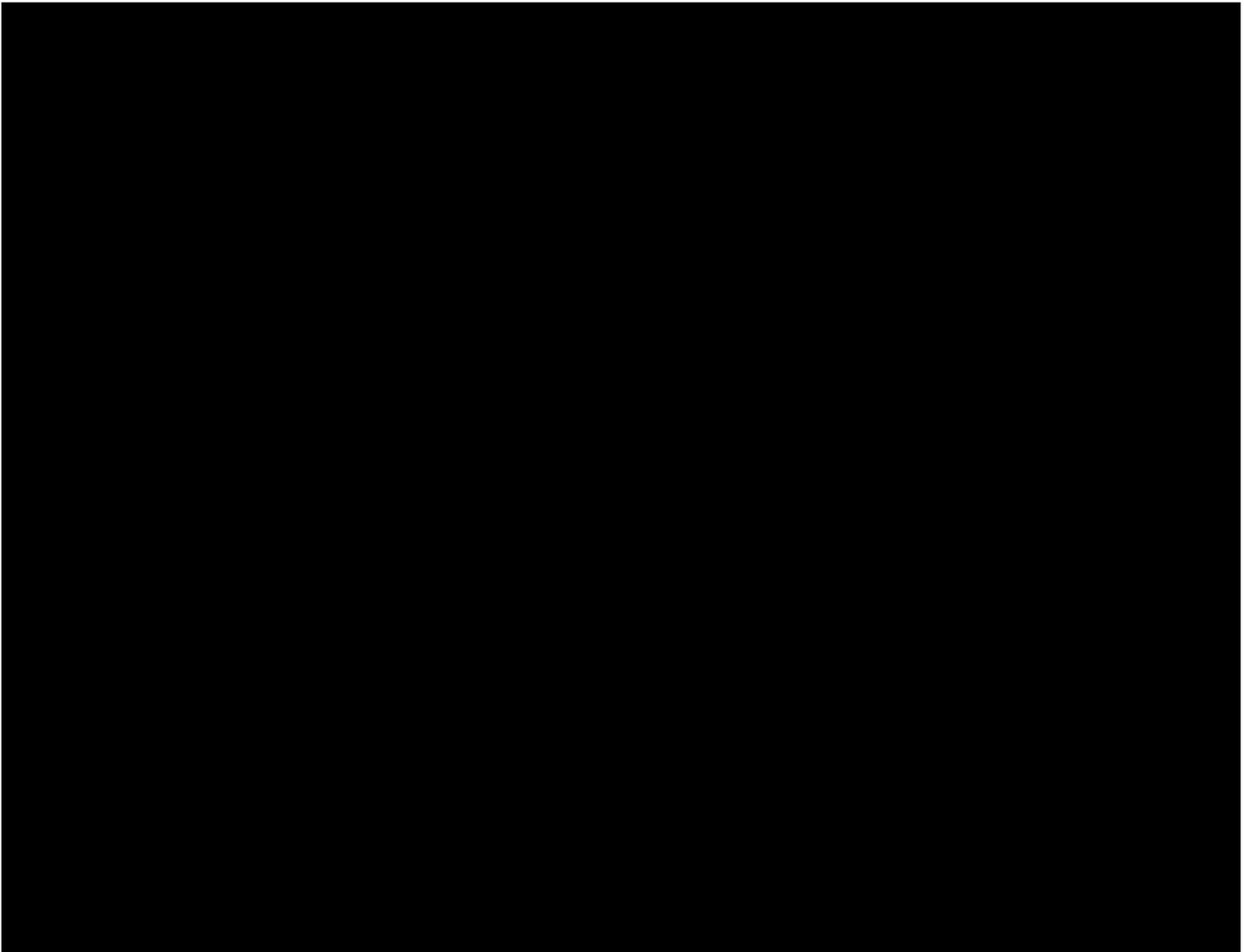
MAWR reports that 24% of all farmers are involved in fruits leaving a total number of potential fruit farmers in Uzbekistan of 15,937 (24% of 66,406) of which 1,147 are likely female (7.2% of 15,937). The project's data collection system does disaggregate by gender and roughly 5% of the project's legally registered farmers are female, slightly lower than the MAWR percentage at the national level possibly due to more ALP activities in the Ferghana Valley. The reported number of female ALP trainees (131 from a total of 966; farmer and farm worker combined) is 3 times higher (roughly 14% of total trainees) due to the household processing activity.

ALP seeks to alleviate gender disparities in the targeted areas using a multi-level approach by limiting any gender biases due to choice of targeted crops, promoting labor-reducing or simplifying technologies such as irrigation and drainage system upgrade to reduce the need for hauling water to fields or solar dryers which accelerate the desiccation of fresh fruit. The trellis program was expressly targeted to female farmers during FY2012 to reduce the labor requirement and time expenditure for protecting and harvesting produce. While assessing the potential for refurbishing the tissue culture laboratory at Shreder,

the project team discovered most of their lab technicians were female. In interviewing these prospective technicians for likely and appropriate candidates to assure the success and sustainability of a refurbished laboratory, the project found the two most qualified persons to be female. In negotiations with Shreder the project insisted that these two technicians be seconded to any refurbished tissue culture lab supported by the project. While this was a technical imperative for the project, because the two identified technicians are the best to head a new lab, they were both female.

The multi-level approach to gender adopted by the project also seeks to ensure equal opportunity in markets and trade by expressly organizing crop-specific trainings in each harvest season targeted to household level processing. These training programs support women's leadership roles in agriculture, production, processing, marketing and sales while generating income for the household, as well as nutritious fruit products for home consumption throughout the winter months. The household level processing trainings allowed ALP to reach 110 rural women who are not legally registered farmers to provide them with livelihood diversification options that also increase incomes and improve household nutrition. The household level processing program assures women have improved access to and decision-making over the horticultural produce available in the harvest period. Sales to neighbors and local markets allow for greater control over the use of this additional source of income, as well as leads to leadership roles within the community.

## **ADMINISTRATIVE AND FINANCE ISSUES**



### **Memorandum of Understanding**

ALP operated within Uzbekistan in FY2012 under the existing MOU between USAID and the MAWR which allows the project to continue activities in the existing provinces, districts and crops. This MOU must be amended to provide the legal basis for ALP to expand its operations per the terms of the task order. An MOU amendment worked its way through both US and Uzbek government reviews throughout FY2012 and should be available for final signature in first quarter of FY13. Uzbek partners in the expanded geographic regions will and do insist on a copy of this MOU before activities can be organized in their respective areas of responsibility. No official project presence in the new provinces and districts, including MAWR introductions to the appropriate provincial and district officials, can be made until the MOU is signed.

The MOU process is not quick because multiple administrative and ministerial reviews are required on both sides. For example, on the Uzbek side the MOU must be approved at the Cabinet of Ministers level preceded by reviews within three ministries; MAWR to assure the activity is consistent with local agricultural policy and objectives, Ministry of Finance to monitor the expected financial contributions of the project, and Ministry of Foreign Economic Relations, Investment and Trade (MFERIT) to oversee the investment targets of project activities. Finally, the Ministry of Foreign Affairs (MFA) must provide authorization to the MAWR to sign an international treaty.

While the process is involved, the result is worthwhile because the GOU will have full buy-in to project activities codified by the final signed MOU. This was the case with the first MOU under AgLinks project and will certainly hold true for the amended MOU. The downside to the one-year delay in receiving the amended MOU is the provinces, districts and partners expected under the expansion of AgLinks to ALP have already lost one full agricultural season of potential collaboration with the project. In horticulture, particularly tree crops, a lost year of growth cannot be recovered. Similarly, the missed opportunity to expand and incorporate new farmers into the ALP program will lower the level of achievement of targets across all indicators.

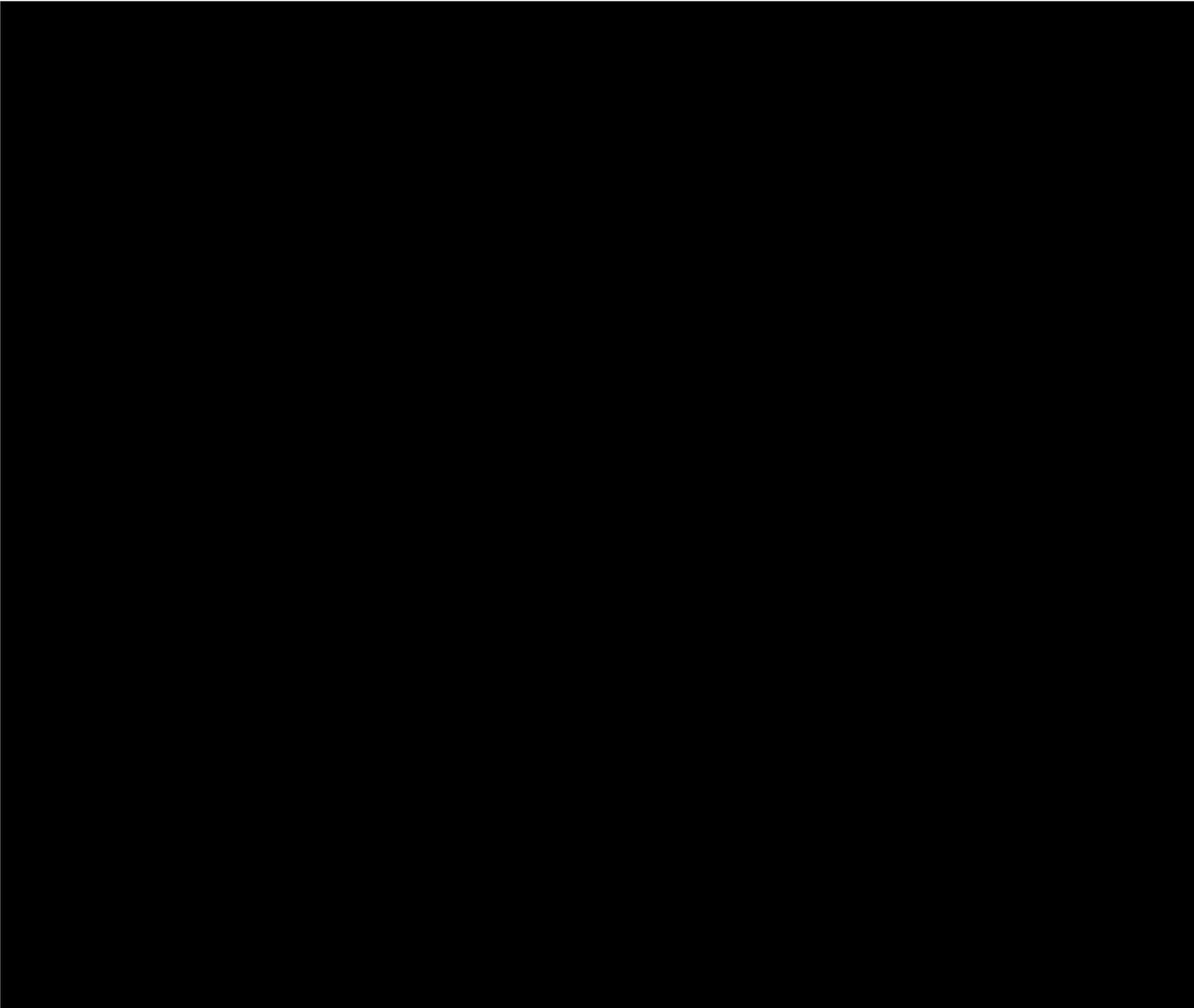
### **New IT**

The project procured and began installation of a new information technology (IT) system in the Tashkent office during FY2012. The predecessor project system had been deployed in calendar 2007 and both the software and hardware in use were dated with increasingly limited storage capacity and performance. The deployment of the new IT system will be completed in early FY2013 allowing the project to free-up the existing system for disposition to partner organizations as envisioned under the AgLinks close-out plan.

The new IT system will also allow the project to use new technologies to lower operating costs such as international IP (internet protocol) telephony and avail in-country staff of DAI Home Office resources. The most important among these HO resources is the installation and use of the DAI-proprietary Technical and Administrative Management Information System (TAMIS). Once fully deployed and customized to ALP needs the TAMIS will allow the project to electronically document both technical and administrative procurements, approvals, decision-making and follow-up.

**Internal Audit**

In late FY2012 ALP received a one-week intensive review of its internal work processes to evaluate compliance with DAI, USAID and host government rules, regulations and procedures. DAI sent an internal auditor from the home office to perform this audit. The resulting findings and recommendations from this audit will be addressed beginning in early FY2013 and will only serve to strengthen the internal workings of the project. Implementation of the recommended actions to the audit findings will require additional technical support from the DAI HO in FY2013 as well as training for local staff to oversee implementation of increasing compliance, documentation and reporting requirements. For example, three different types of financial reporting are required on a monthly basis for each of the project stakeholders; DAI, USAID and the GOU.



[REDACTED]

### **3. PLANNED ACTIVITIES FOR FY2013**

The ALP FY2013 Work Plan outlines in detail with timeline and budget the planned activities for FY2013. ALP proposes to continue working in the 4 components of the original contract by planning activities to improve farm level productivity, increase the capacity of public and private sector service support, improve agro-processing and exports and provide training and human resource development.

#### **Improve Farm Level Productivity**

Major activities supported in FY2013 to improve on-farm productivity will include increased investment in trellises for both grapes and fruit trees. The advanced irrigation system at the Shreder Horticultural Research Institute will be extended and expanded to include an orchard demonstration plot to complement the nursery plot and provide additional field school training opportunities for visiting farmers. ALP will continue its pruning program to increase fruit tree productivity and introduce the “topworking” technique to allow existing older orchards to remain productive for a longer period while being replaced with newer varieties.

#### **Increase Public and Private Sector Service Capacity**

In the public sector, the project will continue to work to strengthen the capacity of Shreder to provide training to farmers in best nursery and orchard practices. The major activity will be the collaborative effort with Shreder management to refurbish their tissue culture laboratory to allow them to mass produce virus-free, true-to-type varieties in a shorter time frame to meet the growing demand for new plant material in the horticultural sector. Another highlight of FY2013 will be the expansion of ALP support to the plant protection service to expand their efforts in pest and disease identification and control to include fruits and grapes in addition to the traditional cotton and wheat services they provide. Additional training manuals will be produced, reviewed, and published to support project and partner training programs. The private sector focus in year two will be to continue supporting improvements in the service provision of local cold store owners to fruit producers, assemblers, wholesalers and exporters through the GCCA subcontract.

#### **Agro-processing and Exports**

Per the contract, “the successor project to AgLinks will continue to work on production and supply service problems with some attention also provided to support agro-processing.” While agro-processing

and exports are not a focus of ALP, activities will continue to support agro-processing at the farm level through the household processing program. Additionally, the project will continue its cost-share program for attendance at fruit related trade shows and exhibitions with a focus on targeted markets. Targeted markets include Russia (ProdExpo), Europe (FruitLogistica) and Asia (FruitLogistica-Asia).

### **Training and Human Resource Development**

All ALP activities include training to increase the development of the human resource base in the horticultural sector of Uzbekistan. Noted examples to be continued and expanded in FY 2013 include the nursery trainings, integrated pest management (IPM) trainings, cold store and cold chain related trainings, and intensive orchard trainings. The Horticultural Exchange Program (HEP) will be continued in FY2013 with 10 Uzbek horticulturalists sent to northern California each quarter. Inspired by the success of the HEP program, ALP will initiate a smaller exchange visit program for cold chain actors in collaboration with the ALP subcontractor GCCA. Finally, ALP will continue its popular variety contests at the end of each harvest season for a minimum of six crops.

**ANNEX A - COMMODITIES PROCURED AND REVISED INVENTORY**

**ANNEX B - LIST OF FY 2012 REPORTS, ANALYSES, PRESENTATIONS AND KEY DOCUMENTS**

**ANNEX C - PERSONNEL AND SALARY SUMMARY**

**ANNEX D - SUBCONTRACTS AND GRANTS SUMMARY**

**ANNEX E - STATUS REPORT OF PROGRESS DELAYS**

**ANNEX F - LIST OF FY2012 ENVIRONMENTAL SCREENS PER TECHNICAL ACTIVITY**

**ANNEX G - SUCCESS STORIES**

## **ANNEX B : Reports, Analyses, Presentations & Key Documents List**

1. Monthly Report #1 – October 2011
2. Monthly Report #2 – November 2011
3. Monthly Report #3 – January 2012
4. Monthly Report #4 – February 2012
5. Monthly Report #5 – April 2012
6. Monthly Report #6 – May 2012
7. Monthly Report #7 – July 2012
8. Monthly Report #8 – August 2012
9. Quarterly Report – Q1 FY 2012 – October- December 2011
10. Quarterly Report – Q2 FY 2012 – January - March 2012
11. Quarterly Report – Q3 FY 2012 – April - June 2012
12. PERSUAP Report
13. Environmental Monitoring and Mitigation Plan
14. Fruit Tree Nursery Assessment
15. Tissue Culture Laboratory Assessment
16. Grape Best Practices Report
17. GCCA Cold Chain Workshop Presentations
18. Cherry Production Best Practices Report

## **ANNEX E : Status Report of Progress Delays (Started, Incomplete)**

The only major progress delay in FY12 was the lack of a signed amendment to the memorandum of understanding (MOU) between the Uzbek Ministry of Agriculture and Water Resources (MAWR) and USAID/Uzbekistan Country Office (UCO). This amendment is required to expand the number of provinces and districts in which ALP is authorized to work within Uzbekistan as well as increase the number of crops covered. ALP was restricted to working throughout FY12 to the predecessor project's number of districts (6) and crops (stone and pome fruits plus grapes) instead of the intended 26 districts and added sub-tropical fruits (pomegranate and persimmon) and nuts. An amendment to the MOU was eventually signed between the two parties on 12/12/12, 14.5 months after ALP officially began.

The delay of the amended MOU into FY 2013 resulted in ALP only working in the original 6 districts, instead of the planned 26, which had the following impacts on the project indicators :

- Indicator #5 - Available new farmers & farms for project interventions. Most partner affiliated orchards in approved areas already work with the project;
- Indicator #6 - Project to work only with those farms affiliated with approved district partner WUAs & AgriFirms;
- Indicator #7 - Total number of orchard farmers trained & potential adopters. Adoption rate remains high (50%) but absolute number of farmers trained in FY12 reduced overall result;
- Indicator #8 - Project expanded public sector partners offering national scope (8 public sector partners in FY12, but indicator #8 only measures private, associative and civil society partners (WUAs - 6, AgriFirms - 5, private - 5.));
- Indicator #9 - Number of available orchard farmers not already working with the project although staff actively sought additional trainees in approved districts;
- Indicator #10 - Number of potential trainees

The only other progress delay in FY12 was the denial of the daily rate of the intensive apple orchard specialist (ALP-29). This US-national, based in neighboring Kazakhstan, had salary requirements of \$600 per day but was only approved for \$300 per day by the USAID/CAR/RCO. The consultant refused this salary and ALP's planned work in intensive apples was delayed. We shared the consultant's contacts and expertise with other donors in Uzbekistan and he was subsequently brought to the country to assist GIZ with its nascent horticultural support program at the consultant's international daily rate of \$600.

## Annex F. List of FY2012 Environmental Screens per Technical Activity

ALP	Description	FY	QTR	Risk	Potential adverse effect(s)	ER	Comment
ALP-01	Environmental Training in US	2012	1	1	No	No	Learn environmental legal framework. Learn DAI's Environmental Management System. Learn USAID's rules and regulations on environmental compliance.
ALP-02	PERSUAP	2012	1	1	No	No	In compliance with environmental rules and regulations. Better understanding of safety in pesticide application. Reduced health issues associated with pesticide application.
ALP-03	Environmental Monitoring & Mitigation Plan	2012	1	1	No	No	In compliance with environmental rules & regulations
ALP-04	CoolBot Procurement	2012	2	2	Very low risk or insignificant risk of negative impact	No	na
ALP-05	Nursery Assessment	2012	2	1	No adverse effect from proposed activity	No	na
ALP-06	Tissue Culture Assessment	2012	2	1	No adverse effect from proposed activity	No	na
ALP-07	Production of Training Videos	2012	2	1	No adverse effect from proposed activity	No	na
ALP-08	HEP01 to HEP04	2012	2	1	No	No	The program includes observation and discussion of environmental compliance issues
ALP-09	MASHAV Water Management Training	2012	2	1	No	No	Course addresses environmental aspects of water management in Israel. Trainees exposed to latest watersaving, wastewater treatment, desalinization & irrigation technologies & other issues related to environmental aspects of water management.
ALP-10	Col Dip Exchange Visit - India	2012	2	1	No	No	The program includes observation and discussion of environmental compliance issues
ALP-11	ProdExpo Trade Exhibition	2012	2	1	No	No	na
ALP-12	Survey of domestic cold store and related fresh produce markets	2012	2	1	No	No	Report will address environmental aspects/issues of post harvest technologies and domestic fresh produce market
ALP-13	Grape Best Practices	2012	2	2	Very low risk or insignificant risk of negative impact	No	Consultant addressed the environmental issues, and recommended only PERSUAP approved chemicals
ALP-14	Tools & Testers	2012	2	2	Sustainability and reliability of the tools/testers	No	na
ALP-15	IPM Training	2012	2	2	No adverse effect from proposed activity	No	Consultant will address the environmental issues associated with IPM
ALP-16	Trellises	2012	2	3	Breakage of posts, misuse of USAID's funds	Yes	ALP staff members & PEO will constantly check post quality before, during & after the work is completed. Vendor provided with technical specifications.
ALP-17	Bee Pollination	2012	2	3	Pesticide spray may kill bees	Yes	Farmers will be instructed by beekeeper on proper care of bees
ALP-18	Dwarf Apple Saplings	2012	2	3	Infection of other plants, misuse of USAID funds	Yes	Vendor provides certificates of no virus and true to type
ALP-19	Advanced Irrigation Systems - Shredder	2012	3	3	Dust, noise during construction, damage to plants	Yes	Vendor followed all recommendation provided by ALP and Uzb construction SNIP codes. Recipient will follow all recommendations given by ALP's Drip Irrigation Expert
ALP-20	GCCA	2012	3	2	No adverse effect from proposed activity	No	na
ALP-21	Cherry Production Best Practices	2012	3	2	No adverse effect from proposed activity	No	na
ALP-22	HEP02-Intro Nurseries	2012	3	2	No adverse effect from proposed activity	No	Environmental issues addressed during the training.
ALP-23	R&R COP Summer 2012	2012	3	2	No adverse effect from proposed activity	No	na
ALP-24	Turkey Soil & Water Mgt Training	2012	3	2	No adverse effect from proposed activity	No	Environmental issues addressed during the training.
ALP-25	Tissue Culture Follow-up	2012	3	3	Misuse of USAID funds and time	Yes	Qualified consultant from US was hired to supervise the establishing tissue culture lab
ALP-26	HEP03-Cold Store	2012	4	2	No adverse effect from proposed activity	No	Environmental issues were addressed during the training. Participants were exposed to environmentally friendly and hygienically clean postharvest technologies during the training
ALP-27	Walnut Assessment	2012	4	2	No adverse effect from proposed activity	No	na
ALP-28	HEP04-Intro Grapes	2012	4	2	No adverse effect from proposed activity	No	Environmental issues were addressed during the training.



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## SNAPSHOT “Man-Made Uzbek Oasis”

### *Developing the Uzbekistan Fruit Tree Sector*



Photo: Elena Abdramanova

*“Using modern varieties, trellising and advanced drip irrigation technology has had a huge impact... we are seeing a 60% increase in growth rates and 40% more budding in our mother plants which leads to increased fruit set.”*

*—Abdullah Aripov, Researcher,  
Shreder Horticultural Research  
Institute of Uzbekistan*

*USAID and a coalition of public and private partners are transforming the Uzbek fruit tree sector by helping farmers implement Integrated Intensive Orchard Management technologies and practices.*

**Telling Our Story**  
U.S. Agency for International Development  
Washington, DC 20523-1000  
<http://stories.usaid.gov>

The USAID Agricultural Linkages Plus Project (AgLinks Plus) and its partners are leading efforts to transform the Uzbekistan fruit tree sector. Working with Uzbek researchers, commercial nurseries, and farmers, this public-private partnership is helping to turn Uzbekistan’s fruit orchards into man-made oases.

Uzbekistan has a long history of producing world-renowned fruit crops: stone fruits (peaches, nectarines, cherries, apricots, and plums); pome fruits (apples, pears, and quince); subtropical fruits (pomegranate and persimmon); and grapes. With USAID support, Uzbek farmers have made great productivity improvements in their orchards and vineyards over the past four growing seasons employing project-promoted productivity improvement techniques—pruning, trellising, grafting, and budding, pollinating, and more. AgLinks Plus and a coalition of sector leaders are now moving the tree fruit sector to the next production plateau: *Integrated Intensive Orchard Management*.

This approach combines three core technologies: dwarf tree varieties, appropriate trellising, and drip irrigation. Integrating these technologies in high-density orchards—up to 2,500 trees per hectare depending on the type of crop—results in highly competitive orchards yielding excellent returns on investment.

In collaboration with the Shreder Horticultural Research Institute of Uzbekistan and five private nurseries, this development initiative is growing a local supply of guaranteed “true-to-type” tree seedlings—specifically, dwarf varieties—needed to establish and/or maintain intensive (high-density) orchards. A key component of this advanced production approach is an in-vitro tissue culture lab at Shreder where micro-propagation technology will allow rapid production of large numbers of “genetically identical” true-to-type plants. Using a relatively small amount of resources, saplings are then propagated throughout a network of commercial nurseries.

Along with modern dwarf varieties and proper trellising, a third critical requirement of intensive orcharding is delivery of the right amount of water to the right place at the right time. Coalition partners are demonstrating advanced drip irrigation systems that deliver water appropriately *and* conserve a precious scarce resource. Using less water, USAID is helping Uzbek farmers transform their orchards into man-made oases.



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## SNAPSHOT “Instant Game Changer”

### **Uzbek Horticulture Exchange Program (HEP) Drives Technology Adoption**



Photo: Elena Abdramanova

*“During the U.S. study tour organized by the USAID project I learned about new budding techniques that produce saplings in one year instead of two. It was right at the time to do it. So I called my family to immediately bud the trees in order not to miss the season and waste one year. I am sure results are not long to come!”*

*Tojiddin Toshpulatov*

*The USAID AgLinks Plus Horticulture Exchange Program is one of several ways the project demonstrates modern techniques and supports its stakeholders to adapt new technologies to their businesses and farms.*

#### **Telling Our Story**

U.S. Agency for International Development  
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The USAID Agricultural Linkages Plus Project (AgLinks Plus) initiated a visitor exchange program this past year in collaboration with subcontractor International House at Davis (University of California). Under the Uzbek Horticulture Exchange Program (HEP), 38 public and private sector project stakeholders have participated in four seasonal HEP trips to California. Each exchange, timed to coincide with the Uzbek and California cropping seasons, focused on a specific theme: pruning and trellising fruit trees and grapes, best nursery practices, best cold storage practices, and grape and raisin production best practices.

Two aspects of this program are of particular note. First, these horticulture exchanges exemplify the AgLinks Plus foundational approach of “look, see, do.” HEPs are a natural extension of the network of demonstration plots AgLinks Plus has supported across all project crops and activities. HEP participants experienced—first-hand—world-class facilities, technologies, and techniques by visiting field and production locations and best practice operations. Second, and more importantly, participants are not just looking and seeing, they are *adapting* what they see to their own circumstances in Uzbekistan.

Tojiddin Toshpulatov, operates a small private nursery with his family in Namangan Province. Mr. Toshpulatov participated in the HEP focused on best nursery practices that visited many of the largest private nurseries in California. At one of these facilities, Mr. Toshpulatov observed a field budding technique that would allow him to produce saplings for his customers in one year instead of two, a technique he was not using at his nursery in Uzbekistan. Because these tours are timed to coincide with seasonal activities, Mr. Toshpulatov called his family back in Uzbekistan. He instructed his son to begin immediately budding their saplings, describing the process over the phone, to eliminate a full year of product development and market the output more quickly.

The USAID AgLinks Plus project is achieving excellent adaption rates overall by supporting best practice demonstrations—the look, see, do approach—and helping disseminate state-of-the-art information to its stakeholders. HEP tours are an important project activity that helps fuel the adaption of critical technology.



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## SNAPSHOT “Better Late...and Better!”

### Uzbek Fruit Variety Contests



Photo: Sunnat Djalalov

*Fruit Variety Contest winners receive modern orchard tools that stimulate better adoption of techniques promoted within the project.*

Variety Contests bring farmers together to share information and experiences. AgLinks Plus is leveraging farmer networks to facilitate the transfer and adoption of fruit production best practices at events that are productive, informative, and fun.

#### Telling Our Story

U.S. Agency for International Development  
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<http://stories.usaid.gov>

The USAID Agricultural Linkages Plus Project (AgLinks Plus) sponsors a series of variety competitions after each agricultural cropping season.

In rural and farming communities, word of mouth is the most viral and meaningful means of information dissemination—even more so than Facebook! Farmers are as curious and competitive as they are cautious; they are always interested in what crops their neighbors are growing, what approaches they use, and, most importantly, what results they achieve.

Throughout fiscal year 2012, AgLinks Plus leveraged this word-of-mouth principle by sponsoring a series of variety competitions, bringing together farmers and their families to compare their produce at the end of the production year. A distinguished panel of local judges used common criteria to choose winners of each competition. At a recent competition, an entrant arrived just in time to be included in the judging, then won first place. Better late...and better! Prizes—such as pruning, grafting, and budding tools—are awarded to the winners and those farmers willing to adopt new and different technologies. Farmers are able to see first-hand the techniques and tools that the project has been encouraging them to adapt through farm demonstrations and technical assistance.

While their produce is being judged, farmers not only socialize but also talk about their crops and farms. They share the challenges they face and the approaches they use to deal with them. The project also provides specific information sessions to the assembled farmers about their fruits and sponsors local technical experts to share their insights. After most varietal contests, farmers arrange for visits to each other's farms to continue exchanging information and learning from each other. Winning farmers are inundated with requests for transplants and grafting material from their prized plants.

The rate and amount of technology adoption is a prime objective and key indicator of success for any agricultural development project. AgLinks Plus is leveraging farmer networks and facilitating the transfer and adoption of fruit production best practices by bringing farmers together at end-of-season variety competitions that are productive, informative, and fun.



## BEFORE & AFTER

### “Man-Made Uzbek Oases”

#### *Developing the Uzbekistan Fruit Tree Sector*

*USAID and a coalition of public and private partners are transforming the Uzbek fruit tree sector by helping Uzbek farmers implement Integrated Intensive Orchard Management technologies and practices.*

**Telling Our Story**  
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Dmitry Lunev

**BEFORE** The USAID Agricultural Linkages Plus Project (AgLinks Plus) is working with Uzbek researchers, commercial nurseries, and farmers in a public-private partnership that is transforming the Uzbekistan tree fruit sector. Above, technicians survey the site for installation of an advanced irrigation system (winter 2012).



Elena Abdramanova

**AFTER** Coalition partners are introducing modern dwarf varieties, proper trellising, and demonstrating advanced drip irrigation systems to deliver water appropriately *and* conserve a precious, scarce resource. Using best-practice technology and less water, USAID is helping Uzbek farmers transform their orchards into man-made oases. Above, the same site after installation and use (summer 2012).