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# PERFORMANCE EVALUATION OF THE AGRICULTURAL LINKAGES (AGLINKS) PROJECT

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# ACRONYMS

<b>ADB</b>	Asian Development Bank
<b>AF</b>	AgriFirm
<b>AgLinks</b>	Agricultural Linkages project
<b>AgLinks Plus</b>	Agricultural Linkages Plus project
<b>BDS</b>	Business Development Services
<b>CAR</b>	Central Asian Republics' Regional Mission
<b>CS</b>	Cold Storage
<b>DAI</b>	Development Alternatives Inc.
<b>DP</b>	Demonstration Plot farmers
<b>Dekhan farm</b>	Household farm of .35 ha or less
<b>EPPO</b>	European and Mediterranean Plant Protection Organization
<b>FSU</b>	Former Soviet Union
<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>IPM</b>	Integrated Pest Management
<b>IPPC</b>	International Plant Protection Convention
<b>ISO</b>	International Organization for Standardization
<b>JSC</b>	Joint Stock Company
<b>Kolkhoz</b>	Collective Farm Enterprise During Soviet era
<b>LLC</b>	Limited Liability Company
<b>MAWR</b>	Ministry of Agriculture and Water Resources
<b>ME&amp;A</b>	Mendez, England & Associates
<b>MOU</b>	Memorandum of Understanding
<b>NGO</b>	Non-Governmental Organization
<b>NPK</b>	Nitrogen, potash and phosphate fertilizer compound
<b>AOIE</b>	Office International des Epizooties (World Organization for Animal Health)
<b>PMP</b>	Project Monitoring Plan
<b>PPI</b>	Uzbek Scientific Plant Protection Institute
<b>PTO</b>	Farm tractor power take-off shaft to power trailing farm equipment
<b>Shirkat</b>	Cooperative farm organizational structure formed to replace the state and collective farms of the FSU period
<b>Shreder Institute</b>	Institute for Fruit Growing, Viticulture, and Winemaking (a private sector enterprise)
<b>SO<sub>2</sub></b>	Sulfur Dioxide, a chemical used in food preservation and to prevent formation of certain fresh grape fungal molds
<b>Sovkhoz</b>	State farm enterprise during Soviet era
<b>SOW</b>	Scope of Work
<b>SPS</b>	Sanitary and phytosanitary quality control procedures
<b>TCCTC</b>	Tashkent City Center for Testing and Certification
<b>UCO</b>	Uzbekistan Country Office
<b>USAID</b>	US Agency for International Development
<b>WUA</b>	Water User Association

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# EXECUTIVE SUMMARY

## EVALUATION PURPOSE

This is an independent, external evaluation report of the Agricultural Linkages (AgLinks) project, which ended on January 31, 2012 and was funded by the United States Agency for International Development (USAID) Central Asian Republics' Regional Mission (CAR), Uzbekistan Country Office (UCO). The evaluation was carried out by a team of experts assembled by Mendez, England & Associates (ME&A), located in Bethesda, Maryland.

The evaluation was designed to: a) assess and validate the AgLinks' theory of change; b) determine how well implementation decisions supported achievement of results; c) examine differential outcomes of men and women beneficiaries; and d) make evidence-based recommendations for enhancing the performance of the follow-on project, Agricultural Linkages Plus (AgLinks Plus).

## FINDINGS

- The history of private farming in Uzbekistan is very new; it has been only seven years since the production cooperative farm organizations (*shirkats*) were disbanded and all farm production responsibilities transferred to private farmers. USAID and the AgLinks and AgLinks Plus projects have been at the cutting edge of providing these new private farmers with a strong production-based set of technology transfer training activities, demonstration projects, communication linkage relationships, and selected farm input support activities that have had a significant positive impact on improving farm-level productivity.
- The Government of Uzbekistan's (GOU's) policies support expansion of high-value orchard- and vineyard- based products by providing tax incentives and systematic provision of preferential credit to provide working capital and related capital investment loans. Consequently, Uzbekistan is one of the very few former Soviet republics where smaller-scale private commercial farmers do not indicate that credit is a major constraint to expanding farm output.
- With respect to export of fresh orchard and vineyard products, legislation has been in place since 1993 and updated regularly, with the intent to harmonize export sanitary and phytosanitary (SPS) quality control laboratory and certification practices with international standards. International donor agencies consider this program among the most advanced in the Central Asian region.
- Critics point out that GOU's policies limit the free export of fresh, high-value orchard and vineyard products by maintaining tight control over all phases of the export process. In this regard, the Evaluation Team discovered that the GOU does limit exports of high-value fresh orchard and vineyard products during periods when domestic supply is insufficient to meet local demand. A special Cabinet of Ministers' Working Group monitors the supply/demand situation by conducting quarterly supply and demand analysis and issuing reports of its findings. For the quarter beginning July 1, 2013 through September 30, 2013, the Working Group report indicates that there is an excess of product supply over domestic demand. Consequently, no restrictions were placed on fresh orchard and vineyard products' exports. The report also indicates that 207 companies and individuals are authorized to implement such export trade.
- The availability of fresh orchard product export market channels this year was noticeable when talking with farmers, as they expressed no constraint in selling fresh fruit to traders who would resell to other domestic and export markets, mostly in Russia. Farmers did not express dissatisfaction with prices received, as they were consistently higher than farm-level prices available for similar products in local bazaars.
- The USAID AgLinks Statement of Work (SOW) theme for Uzbekistan is "supporting growth of private farming through stronger linkages to high-income markets."<sup>1</sup> Formal field survey interviews identified only limited AgLinks market linkage activities to promote farmer access to

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<sup>1</sup> USAID AgLinks Statement of Works pg. 19

high-value export markets. Yet, in 2013, with available fresh product export opportunities, it is clear that the AgLinks leadership took the correct position with its emphasis on technology-transfer training and demonstration plot activities. AgLinks' client farmers increased output of high-quality products and traders with the ability and knowledge to access export markets have been quick to identify them and negotiate purchase contracts.

- Field survey discussions indicated that AgLinks' work with processors, while useful in strengthening the competitive position of the individual processor, did not materially lead to improved farmer market access to high-value markets.
- Focus group survey results indicated that disease and pest control, pruning, and improved soil management practices were the most important technology innovations AgLinks introduced. Farmers also indicated that annual AgLinks-sponsored variety contests were important for sharing ideas with farmers in other regions and for gaining knowledge in new varieties and production technologies. Initially these variety contests were limited to display of agricultural products, but with AgLinks' introduction of a women-targeted fruit and vegetable food preparation component, these program participants also display their products at the variety contests.
- AgLinks installed a total of five drip irrigation demo plots in Namangan, Fergana, and Samarkand, but no farmer interviewed had adopted this technology as none experienced water shortages using traditional irrigation techniques.
- AgLinks conducted a successful technology support activity with five small-scale cold storage (CS) operations. The five CS operators acted as wholesale traders and brokers between farmers and outside buyers, or as buyers of products from farmers for future resale to local and other domestic markets. Survey results from CS operators indicated that support from AgLinks was either very useful or useful. Income increases from 35% to 100% were recorded over the period.
- Male registered farmers far outnumber female registered farmers, but women registered farmers were more likely than men to hold formal post-secondary degrees. Traditional Uzbek cultural institutions and prevailing legal practices militate against widespread female legal farm ownership holdings, but the Evaluation Team found no evidence of other systematic bias against women in gaining registered farm status or in gaining access to commercial production inputs or markets.
- AgLinks introduced, in 2009, a special household food processing training program to enhance family food security and provide a basis for women to earn additional income. In addition to drying traditional fruits, the training included making plum jams, candied fruits, and pastilles. Starting in Namangan from a small base of 15 to 20 women in early 2010, this program grew in popularity to the point where 100 or more women attended these training sessions by Aglinks project close in mid-2012. An estimated 1,000 women have attended these trainings and women focus group participants were unanimous in their support for the program.
- AgLinks developed a strong working relationship with the Shreder Institute for Fruit Growing, Viticulture and Winemaking (Shreder Institute),<sup>2</sup> which has a range of crop research and nursery facilities in Tashkent and in major agricultural provinces. Forty-five varieties of stone fruits and additional rootstock seed were provided to these Shreder branches to strengthen their plant breeding program, including grafting of the new varieties in existing rootstock. Equipment to support an *in vitro* plant breeding facility will be installed in the near future, and the Institute is expanding its farm-level field training capacity.
- The Uzbek Scientific Plant Protection Institute (PPI) is the only specialized plant protection organization in the Central Asian region. Specialist staff has cooperated with AgLinks in preparing manuals and regularly provide field-level expert farmer training. The PPI implements a comprehensive Integrated Pest Management (IPM) program for cotton, and has the technical capacity to introduce a similar program for orchard and vineyard crops to further support improvement of Uzbek fresh produce to international standards. To date, AgLinks has not provided laboratory equipment to the PPI but discussions to do so are in progress.

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<sup>2</sup> The Shreder Institute for Fruit Growing, Viticulture and Winemaking, formerly a specialized public sector Crop Research Development and Training Institute, was reorganized in 1995 as a closed Joint Stock company with the same technical functions.

- The Tashkent City Certification and Testing Center (TCCTC), a division of the national Uzbek standardization, metrology, certification, and accreditation agency, *Uzstandart*, provides food quality testing certification of agricultural and other food products sold in export markets.. To support this work, AgLinks provided high-performance liquid chromatography equipment to support efforts to harmonize Uzbekistan’s SPS procedures with prevailing international standards. A recent Asian Development Bank (ADB) report indicated that Uzbekistan has the best overall SPS practices in the Central Asian region.

## RECOMMENDATIONS

### Impact of value chain production activities on increasing farmer productivity and technology adaptation rates

- Extend the proven technology transfer and demonstration plot farmer orchard and grape crop improvement strategy to new regions;
- Continue technical knowledge and experience exchange activities among farmers, using national-level variety contests and in-country study tours, to enable leading farmers from different regions to improve linkage and communication networks;
- Limit drip irrigation demonstration plot development only to areas with known water scarcity to improve effectiveness of this technology transfer technique;
- AgLinks Plus should consider:
  - Providing appropriate technology soil testing equipment to selected AgriFirms (AFs) to help farmers better implement their crop expansion plans. Operated on a fee basis, this will strengthen long-term AF financial viability;
  - Using PPI staff and facilities to expand IPM activities to reduce farmer dependence on chemical pest control measures and thereby better meet international fruit quality export requirements;
  - Hiring specialists in disease and pest management control at regional levels to upgrade farmer diagnostic and control capabilities and, in the process, expand human resource capacity development.

### Impact of value chain market linkage activities on increasing farmer incomes

AgLinks Plus should:

- Significantly expand the small-scale CS development program as it is an effective way to help small-scale traders link farmers to high-value domestic and export markets;
- Improve the efficiency and farmer accessibility of small-scale CSs by supporting local manufacture of refrigeration units;
- Introduce an orchard and vineyard product domestic and foreign market price and quantity information linkage program to selected client AFs, to facilitate market information exchange.

### Differential gender impact of value chain market linkage activities

- AgLinks Plus should extend the successful household food preservation training program to all regions and should help growers manufacture locally the micro-sterilization units needed to elevate preserved food product quality to retail quality standards in order to make them readily available to interested household and other potential users, especially women.

### Impact of project and partner linkage relationships on project effectiveness

- The AgLinks-proven technology transfer and demonstration plot farmer orchard and grape crop improvement strategies, coupled with the effective linkage and communication activities provided by the variety contests and in-country study tours, should be extended to new regions;
- Subject to gaining GOU policy commitment, USAID and AgLinks Plus should consider:
  - Further strengthening the Shreder Institute in order to enhance its technology training programs provided at the regional level;

- Strengthening the PPI technical capacity to train farmers in orchard and vineyard disease and pest management and control and introducing an IPM program for orchard and vineyard crops;
- Providing additional food safety laboratory equipment to further upgrade TCCTC capacity to harmonize Uzbek food safety export procedures with international standards;
- Improving long-term AF financial and human resource capacity, including provision of dedicated technical service and market linkage support mechanisms, and construction of CS facilities in selected AFs to expand commercial marketing operations to higher-value domestic and export fresh produce markets.

## **FUTURE DIRECTIONS**

Post AgLinks Plus support to promoting high-value fresh orchard and vineyard product exports should begin with gaining GOU policy commitment to institutionalizing the AgLinks field-level technology transfer training program within the Shreder Institute and the PPI. This includes the expanded AgLinks Plus post-harvest handling and CS programs.

Direct GOU policy support for the Shreder Institute, a private sector organization, is not as crucial as with the PPI, which is administratively associated with the Ministry of Agriculture and Water Resources (MAWR). Moreover, the Shreder Institute already has a significant number of staff dedicated to variety development and farmer training. However, since a high proportion of its operational funding is from the Cabinet of Ministers Committee on Coordination of Science and Technology, continued support from this funding source can be considered an important aspect of its planning horizon.

PPI, which has a demonstrated and strong staff commitment to implementing IPM biological pest control measures for cotton, currently has a very limited staff and physical infrastructure commitment to a similar program for orchard and vineyard products. The Evaluation Team's discussions with AgLinks and PPI staff indicated that the technical knowledge to implement such a program is clearly present; however, program expansion requires further GOU policy and financial support. The payoff to promoting high-quality fresh produce exports through improved IPM disease and pest control can be large as it compliments, further enhances Uzbekistan's harmonization with international standards, and can lead to fresh produce export beyond the former Soviet territory.

# I.0 EVALUATION PURPOSE & EVALUATION QUESTIONS

## I.1 EVALUATION PURPOSE

This is an independent, external evaluation report of the Agricultural Linkages (AgLinks) project, which ended on January 31, 2012, and was funded by the United States Agency for International Development (USAID) Central Asian Republics (CAR) Regional Mission, Uzbekistan Country Office (UCO). The evaluation was carried out by a team of experts assembled by Mendez, England & Associates (ME&A). The team included one international expert and one local expert, both with significant experience working in and evaluating agriculture projects.

The purpose of the evaluation was to:

1. Assess and validate AgLinks' theory of change;
2. Determine how well implementation decisions supported achievement of results;
3. Examine differential outcomes of men and women beneficiaries;
4. Make evidence-based recommendations for enhancing the performance of the follow-on project, Agricultural Linkages Plus (AgLinks Plus).

The Mission will use evaluation recommendations to fund future projects and activities of the Agricultural Linkages Plus (AgLinks Plus) program.

## I.2 EVALUATION GUIDING QUESTIONS

The evaluation was guided by specific questions contained in the Scope of Work (SOW), found in Annex C of this report. These questions include:

### Performance

1. How and to what extent did the project create or strengthen linkages in the fruit and grape value chains?
  - How and to what extent have relationships between farmers and processors been improved as a result of project activities?
  - How and to what extent have relationships between farmers and exporters been improved as a result of project activities?
2. To what extent were women and women-owned firms actively engaged and given a fair opportunity to access or compete for project resources?
  - On average, did women and women-owned firms who participated in AgLinks have different outcomes in terms of increased income and productivity than their male counterparts? If so, why?
  - How can women and women-owned firms be better engaged in the project?

### Process

1. How and to what extent did information exchange and technical collaboration amongst project partners (i.e. farmers, water user associations (WUAs), AgriFirms, public research institutions, governmental authorities, and other stakeholders) help or hinder project activities?
  - Did the project identify the right communication channels between key stakeholders for effective implementation?
  - Was the project able to effectively open those communication channels?
  - Which communication channel(s) contributed the most to strengthening market linkages and how?

- What more could have been done to improve communication between key stakeholders?

### **Sustainability**

- I. To what extent are farmers in the project's target regions still using the new agricultural technologies and new irrigation methods introduced by the project?
  - How quickly are farmers in the project's target regions adopting the new agricultural technologies and new irrigation methods introduced by the project?

### **Design**

- I. What additional activities should the project consider undertaking that would leverage other projects in USAID Central Asia's portfolio so as to remove barriers to horticultural export?

## **2.0 PROJECT BACKGROUND**

USAID's agricultural strategy in Uzbekistan to date has focused on assisting private farmers to diversify out of low-profit, state-controlled products, such as wheat and cotton, by introducing technology transfer production innovations for orchard and vineyard crop production and developing stronger linkages to high-income domestic and export markets for these agricultural commodities. This strategy aligns with the Government of Uzbekistan's (GOU) goal of increasing fruit and vegetable output by 30% over the next three years. GOU policies support expansion of high-value orchard and vineyard based products by providing tax incentives and systematic provision of preferential credit to provide working capital and related capital investment loans to expand farm-level productivity and product quality. Uzbek farm restructuring policies support development of family unit private farms and, consequently, USAID projects in Uzbekistan have been at the cutting edge of providing private farmers with a strong production-based set of technology transfer training activities, demonstration projects, communication linkage relationships, and selected farm input support activities that have had a significant positive impact on improving farm level productivity.

## **3.0 EVALUATION METHODS AND LIMITATIONS**

Prior to initiation of in-country activities, the Evaluation Team conducted a comprehensive desk review of relevant project materials to gain an understanding and background of project objectives and implementation results. The Evaluation Team used several compatible and complementary data collection and analytical techniques to address the diverse set of project objectives, including comparison of historical project data against current conditions, comparative ranking of responses to identical questions by gender and by participants at different stages of the value chain and in different geographical locations, and triangulation of qualitative information collected during the interview stage by gender and from participants of similar and differing stages along the value chain. Using the formal questions as an entry point, the Evaluation Team expanded on them to gain additional important insights into the impact of farm restructuring and land tenure status on farm productivity and marketing development patterns and on the consistency of farm policy implementation.

Data was collected using the following techniques:

- A comprehensive desk review of the AgLinks contract, work plans, quarterly reports, and Performance Monitoring Plans (PMPs), to provide the basis for conducting a historical development perspective and measurement of change indicators;

- Semi-structured interviews with AgLinks’ technical staff and Business Development Services (BDS) trainers to gain a more complete understanding of AgLinks’ technology transfer approach and issues and objectives not included in formal project reports;
- Semi-structured, systematic interviews with partners and beneficiaries involved with leadership and strategy development, and technical activities associated with water user associations (WUA), agrifirms (AFs), processor, and marketing enterprises.
- Individual and focus group interviews differentiated by gender and including subsets of AF and WUA project beneficiaries using a similar set of questions to those used to interview leadership personnel, in order to compare the perceived impact and working relationships between the various project partners and beneficiaries;
- In depth, semi-structured interviews with project public sector partners including Ministry of Agriculture and Water Resources (MAWR), the Shreder Institute for Fruit Growing, Viticulture and Winemaking (the Shreder Institute), the Tashkent City Center for Testing and Certification (TCCTC); the Uzbek Scientific Plant Protection Institute (PPI), BDS trainers, and others. The purpose of these interviews was to gain interviewees’ perspectives on the impact of project activities on improving communications and working relationships, and on additional strategies and activities needed to gain long-term sustainability of the positive short-term project impacts, and to address perceived project weaknesses.

There are several limitations inherent to the design of this evaluation.

- Due to funding and time constraints, the field survey sample size is too small to provide conclusions with measurable statistical reliability;
- Recall bias cannot be excluded, as some questions required respondents to provide information on events that took place several years in the past;
- Cultural norms may have prohibited some respondents from providing negative responses to some questions.

## 4.0 FINDINGS, CONCLUSIONS & RECOMMENDATIONS

### 4.1 IMPACT OF VALUE CHAIN PRODUCTION ACTIVITIES ON INCREASING FARMER PRODUCTIVITY AND TECHNOLOGY ADAPTATION RATES

- How and to what extent did the project create or strengthen production linkages between farmers and input suppliers in the fruit and grape value chains?
- What are the estimated productivity increases resulting from project technical support?
- How quickly are farmers in the project’s target regions adopting the new agricultural technologies and new irrigation methods the project introduced?<sup>3</sup>

#### 4.1.1 Findings

The AgLinks project developed a strong production-based set of technology transfer training activities, demonstration projects, communication linkage relationships and selected farm input support activities that have had significant positive impacts on improving farm level productivity. AgLinks did not specifically develop linkages between farmers and fertilizer and chemical pesticide distributors but did provide farmer training on the proper use of fertilizers and pesticides. Of the

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<sup>3</sup> This question replaces question 4 A “With an eye to assessing sustainability of reported results, what is the uptake/retention rate for new technologies and methods between Year 1 and year 2 participants.” The original question appears to be too narrow for valid interpretation five years after project initiation. The replacement question is designed to measure technology adaptation across each AF and WUA included in the project.

five interviewed AFs,<sup>4</sup> only one indicated that it had a license to sell fertilizers and another indicated that it rents space to a chemical company. However, all functioning AFs<sup>5</sup> provided technical advice on fertilizer and pesticide use to its members and several indicated that these free services were initiated with the support of the AgLinks project. Farmers in Samarkand did not identify access to fertilizer as a constraint, but those in Fergana and Namangan expressed concern about fertilizer access.

While not providing technical support to chemical fertilizer and pesticide providers, AgLinks' activity to promote new nursery production was initiated in 2011 by providing technical support to three Shreder Institute<sup>6</sup> facilities in Tashkent, Namangan and Fergana, two private sector nurseries in Namangan and two in Fergana. Forty-five different varieties of stone fruits and additional rootstock seed were provided to these Shreder branches to strengthen their plant breeding program, including grafting of the new varieties in existing rootstock. AgLinks provided the Tashkent Shreder Institute with laboratory equipment to introduce an *in vitro* plant breeding facility. Farmer-owned nurseries in the Turakurgan District of Namangan and the Toyloq District of Samarkand were provided with dwarf apple and pear varieties imported from Serbia and traditional plum and cherry varieties. The nurseries serve as demonstration training schools for introducing budding and grafting techniques and for propagating new plant materials identified through the annual AgLinks-sponsored variety contests. Although AgLinks does not seem to have formally promoted these nurseries as the source of new planting materials for local farmers, undoubtedly this role will emerge as growers gain confidence in the superiority of the new and improved traditional varieties.

AgLinks' major technology transfer activities were targeted to orchard and vineyard production best practices training, including: pruning, budding and grafting techniques; IPM and disease control; chemical pesticide spraying (using backpack sprayers); drip irrigation practices; and nursery management practices. Some 22 training courses were prepared as were three comprehensive training manuals and several leaflets and related technical manuals. Topics included specific fruit crop production technology, disease, pest control and use of pesticides, crop fertilization, pruning, and grafting. Staff from the Shreder Institute and the Uzbek Scientific Plant Protection Institute (PPI)<sup>7</sup> assisted in producing several of the major manuals, with up to 2,500 copies of each printed, and distributed to farmers at training courses held at partner AFs and WUAs. The manuals were supplemented with one-page leaflet type training materials, also distributed to farmers for their personal use. The technology training program is supplemented with provision, free of charge, of specialized pruning shears. Discussions with the Shreder Institute further indicated that it is

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<sup>4</sup> An AgriFirm is a business enterprise that is legally organized as either a LLC or a closed JSC. It is the successor organization to the *shirkat*, a cooperative style farm production organization that succeeded the *kolkhoz* (soviet collective farm). When AgriFirms were formed (in the 2005 – 2006 period) as part of the third phase of the post-soviet farm restructuring program (see Annex F) workers associated with the *shirkat* became registered private farmers with full responsibility for managing farm production activities. They also became members of the AgriFirm, which took on responsibilities of selling agricultural products produced by the newly enfranchised private farmers. However, private farmers were not obligated to sell only to the AgriFirm, as the enabling legislation provided authority to sell crops to any private sector buyer (with the exception of cotton and wheat which continued to be sold under a single-channel state procurement system). The AgriFirm is also the first level contributor to the State agricultural data collection system, as Uzbekistan continues to collect administrative statistics as during the Soviet period instead of using sample survey approached common in developed market economies.

<sup>5</sup> Muyan Sohikbor AF was without a director or other technical staff and its assets were blocked at the time of the Evaluation Team visit. Consequently, as a non-functioning organization, it was not possible to visit with members. However, discussions took place with other farmers who indicated their desire to continue collaboration with the AgLinks project.

<sup>6</sup> The Shreder Institute for Fruit Growing, Viticulture and Winemaking, formerly a specialized public sector Crop Research Development and Training Institute, was reorganized in 1995 as a closed Joint Stock company with the same technical functions.

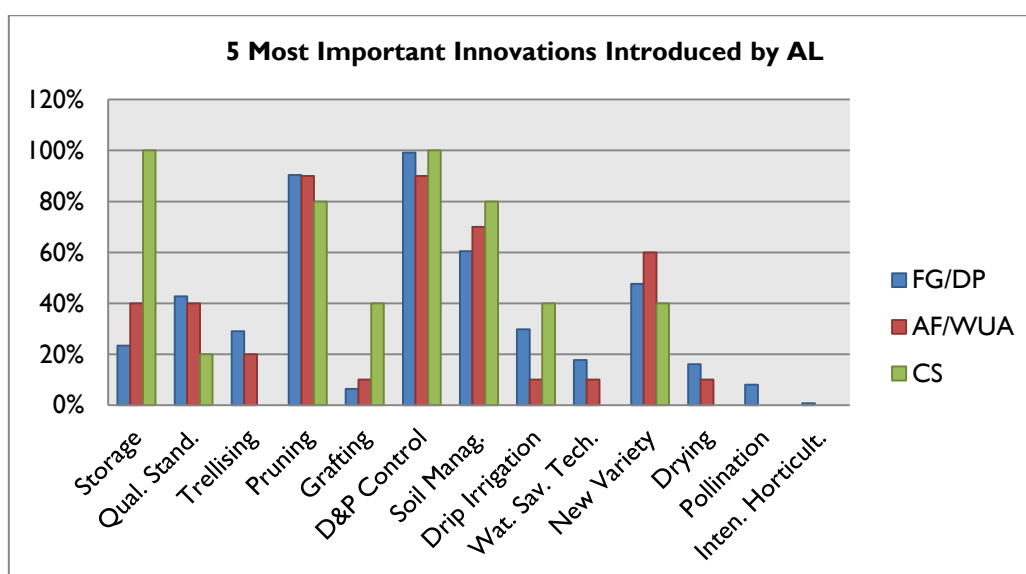
<sup>7</sup> PPI, affiliated with the MAWR, provides the national level technical capacity to carry out basic and applied research into the origin, nature and effect of diseases and pests that attack agricultural crops, and develops control and eradication procedures. Initially dedicated to field crops, especially cotton, PPI has, in recent years, expanded its work to include orchard and vineyard crops.

expanding its farmer technical training programs and that it trained approximately 5,500 farmers in 2012.

More than 30 demonstration plots, with at least one located in each partner AF or WUA, complemented the training program by serving as training sites and on-the-ground visual confirmation of the technology transfer results. Demonstration plot holders, identified as “Champion Farmers” by the AgLinks project, are community leaders and innovators, and viewed by other farmers as individuals to be emulated. The demonstration plots address a range of topics, including grape trellising, pruning, pest management, drip irrigation, and new variety demonstration. Grape trellising, and grape and orchard varietal pruning and pest management, form the majority of the demonstration plots topics.

Focus group survey results across specific subgroups (farmers – including demonstration plot farmers (DP) – AF and WUA leaders, and cold storage (CS) operators) consistently indicated that disease and pest control, pruning, and improved soil management practices were the most important technology innovations introduced by the AgLinks project (see Table I, below).

**Table I: Farmer Focus Group Identification of Most Important Adopted Technologies**



Although grafting was not considered as a major introduced technology (except by CS operators), farmers recognized the importance of introducing new varieties on existing rootstock; however, this is done mostly by trained agronomists rather than by individual farmers. All groups indicated that introduction of new orchard and vineyard varieties was important to further improve productivity and yield, with AF and WUA leaders ranking this technology higher than either farmers or CS operators. While not considered a formal technology innovation, all groups indicated that the annual AgLinks’ sponsored variety contests were important for sharing ideas with farmers in other regions and for gaining knowledge on new varieties and production technologies. Prizes provided by AgLinks included backpack pesticide sprayers, which are widely used by AgLinks beneficiary farmers. Farmers generally felt that locally available products are inferior to those provided by the project.

AF Directors specifically told the Evaluation Team that District Agricultural soil testing facilities provided slow and often questionable results and requested that AgLinks Plus provide them with soil-testing laboratories or equipment able to test for minor nutrients in addition to the nitrogen, potash and phosphate fertilizer (NPK) compound so that they would determine the nutrient status of lands where they planned new orchard and vineyard expansion.

Farmers also noted the importance of spraying orchards using commercial pesticides, and many indicated that they used sprayers won in AgLinks’ variety contests. Some Samarkand farmers

indicated that they would like to upgrade from backpack sprayers to farm tractor power take-off shaft (PTO) driven trailing commercial sprayers. AgLinks' ability to find highly-specialized technical consultants (including foreign technicians) able to address new and rare diseases was noted positively by farmers in all regions. Some were concerned that after AgLinks' closure it may not be possible to find such specialists in all regions. This was specifically noted by farmers in Samarkand, who indicated that AgLinks' specialists provided invaluable assistance in diagnosing a specific grape mildew that saved their grape crop<sup>8</sup>.

To support the AgLinks-introduced orchard and vineyard pruning technology, the project provided European-made pruning shears free of charge to implement this work. Farmers consistently mentioned these shears as being far superior to the low cost ones available on the local market. Farmers further indicated that high-quality pruning saws were also unavailable in local markets. Farmers in all regions reported that special pruning teams had been organized in all regions on a commercial basis to meet the growing demand, as many farmers did not have a sufficient number of family or hired labor force to adequately prune all their trees.

AgLinks has installed three drip irrigation demo plots in Namangan, two in Fergana, and two in Samarkand. However, not a single farmer interviewed had adopted this technology. As seen in Chart 1, acceptance of drip irrigation as an important technology was ranked very low by farmers, although AF and WUA directors and CS operators provided a higher ranking to this technology innovation. In all areas, the government had upgraded irrigation water infrastructure since independence and, except for hillsides, farmers did not report significant water shortages.

Although a five-year waiver of the single land tax is available for farmers adopting drip irrigation, farmers consistently indicated that with the available water supply free of charge, apart from WUA management fees, it was too expensive to implement a commercial drip irrigation program. While drip irrigation is not needed for standard orchard production, it is essential for dwarf orchard varieties and other intensive orchard innovations, which to date have not been adopted beyond the demonstration plot. Drip irrigation is also well-adapted to hillside grape and walnut production.

Farmers cited the widespread adoption of pruning and disease and pest control technology training, advice, and recommendations as contributing to per hectare (ha) crop production increases averaging 30% to 80% over the project life depending on crop (Table 2, below). Some farmers reported crop yield increases over 400% for specific crops.

**Table 2: Farmer-Reported per Hectare Crop Production Increases**

Table Grapes – average production increase of 50% to 70% with an extreme case up to 300%;
Raisin Grapes – average production increase of 30% to 40% with the highest increase up to 80%;
Apricots – average production increase of 50% to 80% with an extreme case up to 400%;
Peaches – average production increase of 30% to 40%;
Apples – average production increase of 40% to 50% with lowest increases at 5% to 10%

<sup>8</sup> However, further discussion with PPI staff, when asked about this farmer concern, revealed that the Institute's scientists had, in 2002, identified the specific cause of the grape mildew and had developed an eradication procedure. However, field level specialists had been of the opinion that this mildew could not form in the semi-arid conditions prevailing in Samarkand and consequently were unable to address the issue prior to the involvement of the PPI specialists.

A notable aspect of the survey results across all regions was that no respondents cited lack of credit as an impediment to realizing future business plans. This is quite unusual in Former Soviet Union (FSU) developing economies and speaks well of GOU credit support programs developed and implemented in the agricultural sector. Farmers consistently cited an aversion to using informal lenders, preferring to borrow from family members or formal banking institutions to cover new business and working capital costs.

The Evaluation Team sought to understand the interest by AFs and WUAs to continue the AgLinks-initiated farmer technology transfer program. The majority indicated its continued interest to host AgLinks' training program, and organizations that were financially viable indicated an ability to support this training post-AgLinks, by charging farmers for this service. However, the Evaluation Team was concerned that, of the 10 AFs and WUAs visited, about half seemed to be financially viable, three were financially questionable, one was very financially stressed, and one had had its assets blocked and all staff were dismissed. This suggests that the ability to continue support of the very effective AgLinks technology training and transfer program by current partners requires further assessment regarding ways in which AF and WUA financial sustainability can be realized.

#### **4.1.2 Conclusions**

- AgLinks' systematic training program, combined with identification of champion farmers to host demo plot variety and production technology innovations, and supplemented by provision of hand tools where local markets were inadequately supplied, has been a winning combination for introducing new production technology leading to significant farm-level yield and product quality increases;
- Farmers have not adopted drip irrigation technology as they do not experience water shortages using current technologies;
- Farmers do not view credit availability as a constraint to adopting new technologies or expanding their business operations;
- Annual variety contests provide a useful meeting place for farmers from different regions to identify new plant varieties and share results of new technology innovations;
- Plant nursery development has been focused on testing and demonstrating new orchard varieties and as demonstration training sites;
- Formation of commercial orchard and grape pruning teams suggests the introduction of a self-sustaining organizational structure for expanding this important service, but pruning shears and saws available on the local market are inferior to those AgLinks provides;
- Pest and disease control activities are well-received by farmers but these activities are not yet occurring on a self-sustaining basis;
- The Shreder Institute is expanding its capacity to breed, reproduce, and market new orchard and grape plant varieties, and is expanding its direct training of farmers in improved orchard and grape technology transfer training;
- Participating AFs and WUAs are very interested in hosting the Aglinks technology transfer training programs; however, most require additional support to gain the necessary human resource and financial capacity to attain this objective.

#### **4.1.3 Recommendations**

- Extend the proven technology transfer and demonstration plot farmer orchard and grape crop improvement strategy to new regions;
- Continue technical knowledge and experience exchange activities among farmers, using national-level variety contests and in-country study tours, to enable leading farmers from different regions to improve linkage and communication networks;
- Limit drip irrigation demonstration plot development only to areas with known water scarcity to improve effectiveness of this technology transfer technique;
- AgLinks Plus should consider:

- Providing appropriate technology soil testing equipment to selected AgriFirms (AFs) to help farmers better implement their crop expansion plans. Operated on a fee basis, this will strengthen long-term AF financial viability;
- Using PPI staff and facilities to expand IPM activities to reduce farmer dependence on chemical pest control measures and thereby better meet international fruit quality export requirements;
- Hiring specialists in disease and pest management control at regional levels to upgrade farmer diagnostic and control capabilities and, in the process, expand human resource capacity development.

## 4.2 IMPACT OF VALUE CHAIN MARKET LINKAGE ACTIVITIES ON INCREASING FARMER INCOMES

- How and to what extent did the project create or strengthen postharvest and marketing linkage relationships between farmers and processors in the fruit and grape linkage chains?
- How and to what extent did the project create or strengthen postharvest and marketing linkage relationships between farmers and exporters in the fruit and grape linkage chains?
- Which communication channel(s) contributed the most to strengthening market linkages and how?

### 4.2.1 Findings

The theme of AgLinks' SOW for Uzbekistan is "supporting growth of private farming through stronger linkages to high income markets."<sup>9</sup> The SOW acknowledged that the GOU, to promote self-sufficiency in targeted fresh fruit products, had from time to time, placed limitations on certain high-value fresh produce exports.

As the project evolved, providing crop-enhancing technology transfer assistance to private farmers, discussed in the previous section, replaced the development of formal private farmer linkages to high-value markets as the major market project activity. In addition, technology transfer support was provided to selected raisin grape and fruit processors. This program included provision of technical food quality enhancement equipment, training in Hazard Analysis and Critical Control Points (HACCP) and International Organization for Standardization (ISO) quality certification programs, and access to international trade shows and study tours to selected fruit processors. Initially, the project worked with two fruit and grape processors, Berad Agro and Agromir. The former is a major raisin grape processor and the latter is a large-scale fruit juice processor. During the latter stages of the project Green World, Siyob Sahovat (Tony Green brand) and EuroBasis – fruit juice processors – were added as project partners.

Similar to the positive support the AgLinks technology training programs gave to farmers and AF and WUA leaders, the supported processors acknowledged that project helped them improve quality and gain better access to foreign markets. This AgLinks activity supported the GOU program to gain compliance with internationally acceptable sanitary and phytosanitary (SPS) food safety practices designed to facilitate the fruit and vegetable export trade. The Evaluation Team's discussions with AF directors did not uncover any direct project initiated market linkage support activities to the AFs (whose major commercial activity is negotiating member contracts with processors) but AFs did receive the specialized quality control equipment provided to other AgLinks processor partners.

AFs, as the successor marketing enterprises to the former production cooperatives (*shirkat*), depend heavily on serving as a market intermediary to their private farmer members. One AF in Samarkand reported finalizing a \$1.5 million export raisin sale resulting from AgLinks' sponsored support to attend the recent Moscow Trade Show.

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<sup>9</sup> USAID AgLinks Statement of Works pg. 19

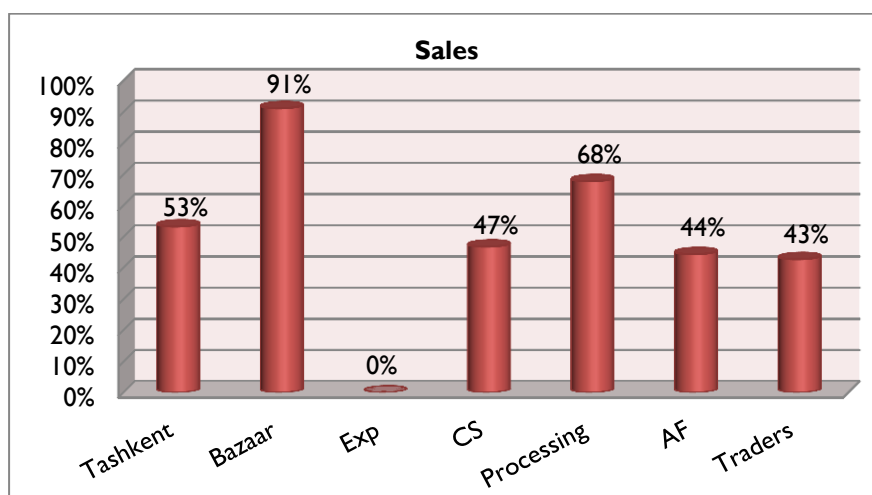
The Evaluation Team held in-depth discussions with five CS operators who received significant training and equipment support in developing small-scale, 20 mt capacity CS sites. In this case, AgLinks' market linkage support was clearly present and significantly positive as the project provided several CS operators with opportunities to attend international trade shows and US and domestic study tours, enabling them to better understand market operations. An experienced Uzbek CS specialist, complemented by foreign technical specialists, provided the most significant project support in the form of CS design, construction, and operation. AgLinks provided cooling units, comprising home air conditioning units, modified to enable the unit to bring ambient temperature down to 3<sup>o</sup> to 5<sup>o</sup> C. This is sufficient to store most local fruits and vegetables except for table grapes, which require an ambient temperature of 1<sup>o</sup> C.

The typical CS AgLinks cooperative arrangement was that the AgLinks client paid 15 million soms (\$7,100 at the official exchange rate) for the CS unit, with AgLinks providing a special US-imported cooling unit with an approximate value of 2 million soms (\$950). One CS operator, who had built his own CS before receiving AgLinks' support, said that the first year he had the CS he did not know how to store crops and lost money. After receiving AgLinks' training, he successfully used the facility to increase net profit.

Three of the five CS operators used the facility to store their own products, as well as products purchased by others for resale. They also stored neighboring farmers' products periodically, usually at no cost if space was available. The other two did not grow their own products, but purchased all crops stored from other farmers for resale later in the season at an expected higher price. In short, the five CS operators acted as wholesale traders and brokers between farmers and outside buyers or as buyers of products from farmers for future resale to local and other domestic markets. All indicated the support from AgLinks was either very useful or useful and reported income increases from 35% to 100% over the period.

It is usual for farmers to sell their crop in local bazaars, to traders for sale in other domestic and international markets, and to processors. Table 3 summarizes this distribution as reported during farmer focus groups.

**Table 3: Alternative Farmer Market Distribution Channels**



More than 90% of all farmers reported sales through local bazaars, with about 70% reporting sales to processors and 53% to the Tashkent market. About 45% of the farmers reported sales directly to AFs and outside traders, with almost 50% selling to CS operators. These intermediaries sell farmer-purchased products to other markets, with AFs selling almost exclusively to processors, CSs to other domestic markets or traders, and traders to either domestic or export fresh market buyers

and distributors. Farmers did not report sales to export markets. However, this is not unexpected as they do not have the required infrastructure and staff to undertake such sales.

While farmers did not report lack of access to the higher-value fresh market channels, farmers in Fergana and Namangan reported difficulties in selling to local juice processors, as many indicated that they had large unsold stocks from previous years and therefore this year were not buying the usual quantity. Consequently, farmers reported low prices for peaches destined for processor markets. Discussions with the Agromir juice processor indicated that his demand had not declined this year but that quality requirements have increased. The company now enters into pre-season contracts with selected farmers who can meet set quality standards. Trade credits, fertilizers, and technical services are provided to the contract farmers.

During the initial in-country briefing, the Evaluation Team had heard from several non-Uzbek sources that the GOU followed a policy of restricting exports of fresh high-value products with the effect of contradicting AgLinks' objective of promoting expanded exports of fresh orchard and vineyard products. When addressing this issue, it was learned that a GOU Cabinet of Ministers' special working group assesses, each quarter, the supply/demand situation for various commodities, including orchard and vineyard products. During periods of limited domestic supply, imports may be limited or curtailed<sup>10</sup>. This has not been the case for fresh orchard and vineyard products throughout most of 2013. The availability of fresh orchard product export market channels was noticeable when talking with farmers, as they expressed no constraint in selling fresh fruits to traders who would resell to other domestic and export markets, mostly in Russia. The procedure for selling fruit to these traders generally followed the pattern where the trader representative would meet with local farmers about 10 days prior to harvest and negotiate a price. Farmers generally had knowledge of local market prices and understood that product destined for international markets would command a higher price and the resulting contract represented this situation. Typically, the buyer provides the harvest crew and packing material, and the packed fruit is immediately placed in refrigerated trucks, managed by the trader, and taken to market. Alternatively, some farmers possessed the capability to pick fruit for the different markets and the trader simply loaded the packed fruit into refrigerated trucks. The Evaluation Team did not attempt to understand the actual process by which products moved across borders, but it was clear that a significant proportion was destined for international markets, with the remainder targeted for higher-value Uzbek markets, such as Tashkent.

The large increase in farmer productivity reported in Section 4.1 did not result in fresh product price declines for two main reasons. First, these increases were limited to the relatively small AgLinks client base, which was insufficient to have an influence on the wider market. Second, the ready availability of fresh product foreign markets in association with available domestic demand was able to absorb production levels existing at the time of the field survey.

#### **4.2.2 Conclusions**

- Project market linkage activities anticipated by the initial AgLinks SOW to facilitate fruit farmer access to high-value export markets were largely replaced during project implementation by technology and equipment transfer activities to fresh fruit processors to support them in improving product quality and increasing total production;
- Farmers reported that there was no shortage of traders willing to buy fresh fruit for export;
- Under open channel market policy conditions, improved farm level product quality in sufficient quantity will attract intermediaries/traders into the area to initiate sales discussions with farmers, thus creating new linkages between farmers and higher value domestic and export markets;

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<sup>10</sup> Working group activities are discussed in Annex G.

- AgLinks provided very useful market linkage activities to five CS operators but the most effective support was in planning and training in proper CS construction and operating techniques that led to significant increases in income from selling stored products;
- AgLinks provided very useful market linkage support to at least one AF that was able to complete a major raisin export sale as a result of attending the Moscow Trade Show;
- Farmers in the Namangan and Fergana regions reported that fresh fruit sales to domestic processors were constrained this year as many reported excessive carryover of stock from previous years.

### 4.2.3 Recommendations

AgLinks Plus should:

- Significantly expand the small-scale CS development program as it is an effective way to help small-scale traders link farmers to high-value domestic and export markets;
- Improve the efficiency and farmer accessibility of small-scale CSs by supporting local manufacture of refrigeration units;
- Introduce an orchard and vineyard product domestic and foreign market price and quantity information linkage program to selected client AFs, to facilitate market information exchange.

## 4.3 DIFFERENTIAL GENDER IMPACT OF VALUE CHAIN MARKET LINKAGE ACTIVITIES

- To what extent were women and women-owned firms actively engaged and given a fair opportunity to access or compete for project resources?
- On average, did women and women-owned firms who participated in AgLinks have different outcomes in terms of increased income and productivity than their male counterparts? If so, why?
- How can women and women-owned firms be better engaged in the project?

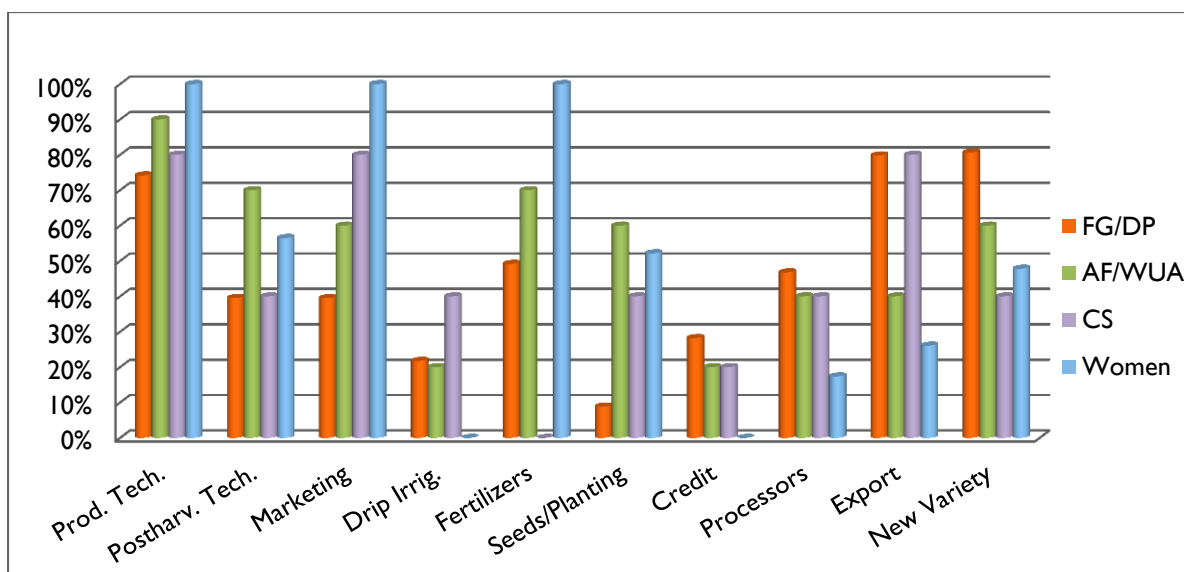
### 4.3.1 Findings

Women are actively engaged as legally registered farmers in Uzbekistan, although not in large numbers. Within traditional Uzbek culture, men are accepted as head of household and legal documents are held in their name. These male-oriented legal property ownership patterns were reinforced during the Soviet period and continue into the present. However, informal Evaluation Team discussions with both men and women revealed that women were most likely to manage day-to-day household expenditures with major financial decisions usually being the product of discussion and consensual agreement. The survey sample included four women registered farmers, eight member farmers and 11 household farm members. With only one exception, the women registered farmers chose to participate in the separate women only focus group although the Evaluation Team made every effort to include them in the general farmer focus group. The exception was a woman registered farmer who managed, along with her sons, a farm of 100 hectares of table and raisin grapes with 70 member farmer families. Most women registered farmers held graduate degrees in accounting and were clearly managing a business operation.

To measure differences in gender responses to common questions and to gain an understanding of the AgLinks introduced food processing training program, the Evaluation Team conducted four women-only focus groups: one in Samarkand, one in Fergana, and two in Namangan. The women-only focus groups usually included several registered farmers, several member farmers, and others that were part of a dekhani (household farm of .35 ha or less) or household farm family.

Table 4 compares sub-group responses to the question “What are the most important items for improving farm productivity?” All female respondents indicated that production technology, marketing, and fertilizer use are key items to improve farm productivity.

**Table 4: Most Important Items for Improving Farm Productivity**



About half of the female respondents indicated that new varieties and improved seeds were very important. However, access to processors, export markets, credit and drip irrigation were not considered to be very important. Most other subgroups also indicated that credit and drip irrigation were of minimal importance to increasing farm productivity, but 40% of the CS operators indicated that drip irrigation was an important element in attaining additional farm productivity.

While all women indicated that production technologies were important to achieving increased productivity, at least 70% of the other subgroups – farmers, AF and WUA Directors, and CS operators also agreed. 80% of farmers and CS operators viewed export markets as important to attaining higher farm productivity compared with 30% of female respondents. The relatively low farmer support for post-harvest technologies and marketing, compared to the 80% support of export markets, most likely reflects a lack of knowledge about the meaning of the terms “post-harvest” and “marketing,” while the idea of “export” is linked with higher prices and is therefore seen as an important element. However, women seem to respond differently as they indicated that marketing was of high importance while export was low. Perhaps women, who generally are not involved with day-to-day commercial farming activities, but are interested in expanding income through local market sales of fruits and vegetables grown on household farms, relate more easily to the general marketing concept.

In this regard, AgLinks introduced in 2009 a special household food processing training program to enhance family food security and provide a basis for women to earn additional income through local market sales. While farm women have in the past dried fruits – such as apricots, apples and vegetables – and have preserved fruits and vegetables by canning them, this was not always done with knowledge of technologies to extend product shelf life or to meet quality standards required to sell products in local markets.

Starting from a small base of 15 to 20 women in Namangan, this program grew in popularity to the point where 100 or more women attended the training sessions. Training sessions were held at the start of the specific fruit-ripening season and each participant was provided with a one-page handout describing the procedures so they could be replicated at home. An estimated 1,000 women attended these trainings. While the major training has been concentrated in Namangan, as the trainer is located there, a trainer specialized in processing grape products has been located in Samarkand and can expand the activity there as required. In addition to drying traditional fruits, the training included making plum jams, candies, fruit, and pastilles. Sulfur Dioxide (SO<sub>2</sub>) was introduced as a food preservative and, with a demonstration food micro-sterilizer made in Uzbekistan, farm women were shown how to preserve products that meet international processed food quality

standards using locally-produced equipment. Female focus group participants were unanimous in their support for this program and were very interested in gaining access to micro-sterilization units.

In addition to reviewing gender relationships, the Evaluation Team probed both farmer and female focus group participants regarding the role member farmers have vis-à-vis registered farmers within the existing commercial farm structure. Over the 10 AFs and WUAs working as AgLinks' clients, one registered farmer on average related to about six member farmer families<sup>11</sup>. Focus groups indicated that in a few cases, a registered farmer would have no member farmers and at the other extreme, one registered farmer reported over 100 member farmers. Member farmers farm discrete parcels of land that are under leasehold to registered farmers. They are legally considered employees but in most cases operate their designated land parcel on a variable share basis with the registered farmer.

The Evaluation Team's discussions with AF and WUA leaders and within the focus groups indicated the existence of a wide range of product sharing and wage relationships. At one extreme, some member farmers are paid only a wage but in most cases, they receive a share of the crop harvested on their designated land plot. If the member farmer provides most of the purchased inputs, the share could be as high as 85% or, in a few cases, 100%. In the latter case, the member farmer is responsible for his/her own tax determination rather than being included within the tax responsibilities of the registered farmer. If the registered farmer provides most of the purchased inputs, the member farmer share usually ranges between 30% and 50%. Unlike the registered farmer who is liable for paying land and profit taxes, required to keep formal accounts, and work within the existing government production targets, member farmers do not have formal tax liabilities and account reporting responsibilities (except if they are completely responsible for the cost of purchased inputs). Thus, there are clear positive and negative aspects of the registered farmer/member farmer relationship for both parties.

It is clear from the above description that discriminatory relationships can easily exist within this structure, while from the positive perspective it can accommodate individual strengths, weaknesses, and interests of the various farm families. During the women-only focus groups, the Evaluation Team did not notice any overt discrimination on the part of registered farmers toward member or household farmers as all views were respected and members contributed freely to the discussions. One focus group revealed clearly the lack of coercion in shifting from a registered farmer to a member farmer as the individual mentioned that, as a registered farmer, she had to keep complex accounts, buy all the farm inputs, and relate to numerous government officials. As a member farmer, however, the working relationship was only to one person, no formal accounts were maintained, and there was no tax liability. Farmer focus group participation rates can also suggest selection bias, but this was not evident as across all regions, registered and member farmers comprised about 45% each of participants, with household farmers making up the remaining 10%.

### 4.3.2 Conclusions

- Male registered farmers far outnumber female registered farmers, but apart from historical cultural practices, the Evaluation Team found no evidence of a systematic bias against women in gaining registered farm status or in gaining access to production inputs and markets;
- Female registered farmers were more likely to hold formal post-secondary degrees than males;
- When asked about the most important items for improving farm productivity, women unanimously indicated that production technology, marketing and use of fertilizers were important, but discounted drip irrigation, access to processors and access to export markets.

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<sup>11</sup> Annex F provides a detailed historical analysis of the Uzbek farm restructuring process from 1989 to the present and addresses the development and role of member farmers in greater detail.

- By comparison, male farmers participating in focus groups, while placing high importance on production technologies, rated general marketing as less important than did women, but rated export marketing considerably higher.
- The AgLinks household food preservation training program proved very popular with women as a way to improve family food security and provide the opportunity to expand family income by producing high-quality preserved fruit and vegetable products for sale;
- The Evaluation Team did not observe unequal interpersonal relationships between registered farmers and member farmers, and member farmers generally participated equally with registered farmers during the open discussions.

#### **4.3.3 Recommendation**

- AgLinks Plus should extend the successful household food preservation training program to all regions and should help growers manufacture locally the micro-sterilization units needed to elevate preserved food product quality to retail quality standards in order to make them readily available to interested household and other potential users, especially women.

### **4.4 IMPACT OF PROJECT AND PARTNER LINKAGE RELATIONSHIPS ON PROJECT EFFECTIVENESS**

- How, and to what extent, did information exchange and technical collaboration amongst project partners (i.e. farmers, WUAs, AFs, public research institutions, governmental authorities, and other stakeholders) help or hinder project activities?
- Did the Project identify the right communication channels between key stakeholders for effective implementation?
- Was the Project able to effectively open those communication channels?
- Which communication channel(s) contributed the most to strengthening market linkages and how?
- What more could have been done to improve communication between key stakeholders?

#### **4.4.1 Findings**

As noted in earlier sections, formal field survey interviews identified limited AgLinks market linkage activities to promote farmer access to high value export markets. Yet, within the 2013 perspective, when traders approached farmers with requests to buy fresh fruit for export, it became clear that AgLinks' leadership took the correct position with its emphasis on production-level technology transfer training and demonstration plot activities. Because of this implementation strategy, AgLinks' client farmers were able to increase output of high quality products, and traders with the ability and knowledge to access export markets have been quick to identify them and negotiate purchase contracts. In 2013, they have not had difficulties in accessing fresh produce high quality domestic and export markets with products that meet required quality standards.

Within the technology transfer training and demonstration plot strategy, AgLinks successfully introduced numerous complementary linkage and communication activities. They include: international and domestic study tours; access to Shreder Institute, the PPI, and the TCCTC; access to international trade shows; and annual variety contests.

While most of these linkage activities did not directly address access to high-value export markets, they enabled farmers to share knowledge with neighbors within their community and between provinces to learn about new crop varieties and new crop management techniques that resulted in increased production of quality products meeting high-value market requirements. The study tour to California provided the opportunity for farmers to see results of technology applications that they were able to emulate on their own farms, and learn about new appropriate technology; CS techniques; micro-food processing technology; pruning, grafting, and soil management techniques; and integrated pest management (IPM) and disease control measures.

Variety contests enabled farmers from all regions to meet annually in the spirit of friendly competition to show off their best crops and other food products. New friendships were formed and technology and market information was shared.

Access to international trade shows enabled CS operators and processors to meet with international buyers and sellers in order to gain knowledge of practices and procedures in other parts of the world and to make contacts that can be useful as CS operators' own businesses expand.

Field survey discussions indicated that AgLinks' work with processors, while useful in strengthening the competitive position of the individual processor, did not materially lead to improved farmer market access to high-value crops. Conversely, technology support to the Shreder Institute materially strengthened its plant breeding and nursery development capacity and enabled it to expand significantly its farmer technology transfer training program. Discussions with the Shreder Institute indicated that it is expanding its farmer technical training programs and that it trained some 5,500 farmers in 2012. Yet, the ability of this organization to continue the very successful field-level technology transfer training programs initiated by AgLinks, and being continued by AgLinks Plus, is not yet clear.

PPI is the only specialized plant protection institute in the Central Asian region. Formed in 1911 toward the end of the Czarist period, it was organized under the Uzbek Academy of Science during the Soviet period. Since independence, it has been organized under MAWR and is funded mainly by grants from the Cabinet of Ministers' Committee on Science and Technology. It also works under contract with private sector organizations seeking support in plant disease and pest control. Specialist staff has cooperated with AgLinks in preparing manuals and regularly providing field-level expert farmer training. PPI has three regional offices and is the premier GOU organization dedicated to identifying and controlling plant pests and diseases. PPI implements a comprehensive IPM program for cotton and has the technical capacity to introduce a similar program for orchard and vineyard crops to further support improvement of Uzbek fresh produce to international standards. To date, AgLinks has not provided laboratory equipment to the Institute, but discussions to do so have taken place.

TCCTC, a division of *Uzstandart*, the national Uzbek standardization, metrology, certification and accreditation agency, provides food quality testing certification of agricultural and other food products flowing in international trade channels. To support this work, AgLinks provided high-performance liquid chromatography equipment to support efforts to harmonize Uzbekistan's SPS procedures and laboratory capabilities with prevailing international standards. Originally designed as a cost sharing procurement, TCCTC leadership suggested instead that Aglinks cover the full cost of the new equipment and TCCTC would then buy additional equipment to match this expenditure. A recent Asian Development Bank (ADB) report indicated that Uzbekistan has the best overall SPS practices in the Central Asian region<sup>12</sup>.

Within the general AgLinks overall success story associated with expanding AF and WUA member knowledge and income, hides another, less-positive story related to AF and WUA long-term sustainability. AgLinks provided institutional strengthening support to AFs in the form of computers, printers and other office equipment and furniture. The project upgraded and installed new water diversion gates for the WUAs to improve water management and reduce waste. By implication, organizations that have been involved with the project since 2008 or 2009 should now be in a position to take over leadership of the training program, or at least be in a financially-viable position to continue their farmer supporting activities. Based on the Evaluation Team's discussion with AF and WUA leaders (a formal financial review was beyond the scope of the evaluation), it appears that no more than half currently have the human resource or financial capacity to continue an AgLinks-type training program, although most directors expressed an interest in doing so.

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<sup>12</sup> "Monitoring Sanitary and Phytosanitary Measures to Facilitate Trade in Agricultural Products" Asian Development Bank, 2013

Apart from the above limitation, the AF in particular suffers from a serious structural constraint that is undoubtedly a contributing factor to their difficulties. Since evolving from the *shirkat* organizational structure, they have been reorganized into limited liability companies (LLCs) or joint stock companies (JSCs) form and serve as marketing organizations for their members. Yet, unlike other marketing organizations, they provide very useful technology support services to their members including accounting advice, and disease and pest management advice and services. Yet, their members are not required to sell any of their products through the AF, thus depriving them of a designated crop market share. In addition, AFs are the first level of the MAVR national agricultural statistics program. Like the FSU, Uzbekistan still bases its agricultural crop statistics on administrative records rather than on a sample survey field data collection. However, AFs, though now organizationally independent of the MAVR, do not receive compensation for providing this service.

#### 4.4.2 Conclusions

- AgLinks successfully introduced information and communication linkage activities to complement the successful technology training and demonstration project strategy that has enabled farmers to access high-value exports markets when the GOU's infant industry export market access policy was modified;
- AgLinks' technology transfer activities to support the Shreder Institute and PPI have increased these support institutions' capacity to address respectively, orchard and grape farmer technology training, and disease and pesticide control requirements. However, their ability to sustain and expand AgLinks' successful technology training programs requires further analysis;
- TCCTC provides important fresh orchard and vineyard food safety laboratory testing and certification services to support export certification for these crops;
- AgLinks' technology and equipment transfers to selected fruit and grape processing companies have assisted them to more effectively access export markets but have not materially improved access of AgLinks farmer clients to these companies;
- AFs, operating as independent, private-sector marketing organizations, are important enterprises that should be encouraged to remain financially viable in the long-run. In addition, they collectively serve an important economic and technical support function within the MAVR policy framework that is guiding the GOU agricultural development program.

#### 4.4.3 Recommendations:

- The AgLinks-proven technology transfer and demonstration plot farmer orchard and grape crop improvement strategy, coupled with the effective linkage and communication activities provided by the variety contests and in-country study tours should be extended to new regions;
- Subject to gaining GOU policy commitment, USAID and AgLinks Plus should consider:
  - Further strengthening the Shreder Institute in order to enhance their technology training programs provided at the regional level;
  - Strengthening PPI technical capacity to train farmers in orchard and vineyard disease and pest management and control and to introduce an IPM program for orchard and vineyard crops;
  - Providing additional food safety laboratory equipment to further upgrade TCCTC capacity to harmonize Uzbek food safety export procedures with international standards;
  - Improving long-term AF financial and human resource capacity, including provision of dedicated technical service and market linkage support mechanisms, and construction of CS facilities in selected AFs to expand commercial marketing operations to higher-value domestic and export fresh produce markets.

## 4.5 STRENGTHENING HORTICULTURAL EXPORT POTENTIAL

- What additional activities should the project consider undertaking that would leverage other projects in USAID Central Asia portfolio so as to remove barriers to horticultural export?

### 4.5.1 Findings

The GOU export management policy (see Annex G) operates to promote export of fresh orchard and vineyard products by preparing, on a quarterly basis, the list of products for which the analytically determined domestic supply of fresh horticultural products exceeds the analytically determined domestic demand. When domestic supply exceeds domestic demand, exports are approved. When domestic supply is less than domestic demand, exports are curtailed.<sup>13</sup> This policy, if implemented consistently in the future, can provide export market access for fresh orchard and vineyard products as domestic production expands. From the farmer perspective, the emphasis must remain on increasing both productivity and product quality required to meet successfully the higher requirements of these export markets.

AgLinks Plus has expanded the AgLinks-introduced appropriate CS technology, as discussed in detail in section 4.2 of this report. The emphasis on smaller-scale farmer affordable storage units with 20 mt to 50 mt capacity needs to be continued and expanded with a view toward developing locally-produced cooling units. This strategy will support fresh produce export using standard 20 mt and 40 mt refrigerated container trucks.

The GOU has, over the years, put in place a functioning export crop inspection and quality certification program to support the farm-level productivity and quality control training and linkage program managed by the AgLinks and AgLinks Plus projects. A recent ADB report on the functioning of sanitary and phytosanitary adherence to international standards and implementation procedures concludes that:

*“Overall, the best SPS practice was observed in Uzbekistan, which already has the following: (i) a forward-looking customs service; (ii) a single window system for exports (which is presently being expanded to cover import transactions); (iii) a progressively improving automated information system; (iv) veterinary and plant health services that are well aligned with OIE [Office International des Epizooties] and IPPC [International Plant Protection Convention] regulations, as well as plant health services that make efficient use of EPPO [European and Mediterranean Plant Protection Organization] resources; (v) a Ministry of Health that is working to gradually phase out SanPin requirements and adopt Codex standards; (vi) an Agency for Standardization that takes HACCP seriously; and (vii) a private sector able to articulate needs in SPS fringe areas such as organic food and halal products.”<sup>14</sup>*

This GOU dedication to a targeted policy objective of harmonizing Uzbek SPS standards and procedures to international requirements in order to promote agricultural exports parallels the consistent culturally based farm restructuring policy that led to the emergence of the private farmer in 2006 as the primary agricultural production unit. Moreover, strengthening of the PPI since independence to provide internationally viable IPM technologies for improving the cotton crop suggests that a similar introduction of this technology toward fresh orchard and vineyard products is a feasible GOU policy objective. Widespread adoption of this technology can move the high value orchard and vineyard sector toward full international SPS integration.

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<sup>13</sup> For example, “The Protocol of the Special Task Force on Export of Surplus Horticultural products”, No 03/19-6 of 01.07.2013 identifies 29 exportable fresh horticultural products and lists 107 companies authorized to export these products for the period July 1, 2013 through September 30, 2013.

<sup>14</sup> “Modernizing Sanitary and Phytosanitary Measures to Facilitate Trade in Agricultural and Food Products”, Asian Development Bank, 2013, pg 25.

Within a similar context, the Decree of President of Republic of Uzbekistan, UP-4478, dated October 22, 2012, “On measures to further improving the organization of activity and the development of farming in Uzbekistan,” can be viewed as a further GOU policy commitment to commercial rationalization of orchard and vineyard productivity through private farmer market based technologies.

#### **4.5.2 Conclusion**

The history of private farming in Uzbekistan is quite new; it has been only six years since the *shirkats* were disbanded and all farm production responsibilities were transferred to private farmers. Thus, USAID and the AgLinks projects have been on the cutting edge of providing new private farmers with the technology needed to improve productivity and product quality and then encouraging export of surplus supplies. Policies have been in place since independence to harmonize export quality control laboratory and certification practices with international standards. This program is seen by international donor agencies as among the most advanced in the Central Asian region. Systematic provision of preferential credit to support working capital needs and incentives for adopting technologies designed to expand farm level productivity and product quality has made Uzbekistan one of the very few former Soviet republics where smaller-scale private commercial farmers indicate that credit is not a constraint to expanded output.

Since Aglinks’ initiation, the Shreder Institute and the PPI have demonstrated an interest in, and have the potential to, respectively, institutionalize varietal improvement and basic farmer production technology training and address disease and pest control diagnosis and control and engage in a comprehensive program of farmer education to achieve this objective.

#### **4.5.3 Recommendation**

The Evaluation Team recommends that further support to promoting high-value fresh orchard and vineyard product exports should begin with gaining the GOU policy commitment to institutionalizing the AgLinks field-level technology transfer training program within the Shreder Institute and the PPI. This includes the expanded AgLinks Plus post-harvest handling and CS programs.

Direct GOU policy support for the Shreder Institute, as a private sector organization (a closed JSC), is not as crucial as with PPI, which is administratively associated with the MAWR. Moreover, the Shreder Insitute already has significant staff dedicated to variety development and farmer training. However, since a high proportion of its operational funding is from the Cabinet of Ministers’ Committee on Coordination of Science and Technology, continued support from this funding source can be considered an important aspect of its planning horizon.

PPI, which has a demonstrated and strong staff commitment to implementing IPM biological pest control measures for cotton, currently has a very limited staff and physical infrastructure commitment to a similar program for orchard and vineyard products. The Evaluation Team’s discussions with AgLinks Plus and PPI staff indicated that the technical knowledge to implement such a program is clearly present; however, program expansion requires further GOU policy and financial support. The payoff to promoting high-quality fresh produce exports through improved IPM disease and pest control can be large as it compliments and further enhances Uzbekistan harmonization with international standards and can lead to fresh produce export beyond the former Soviet territory.

# **ANNEXES**

## **ANNEX A: INDIVIDUALS CONTACTED**

## Annex A1: General Contacts

#	Name	Title
1.	Abdullaev, Ravshan M.	Deputy Director on Scientific Affairs, Uzbek Scientific Research Institute of Horticultural, Grapes and Winery after R.R. Shreder
2.	Abdullaeva, Vasiya	Head of Chemical and Biological Laboratory Testing of Tashkent City Center for Testing and Certification
3.	Abdurakhmanova, Elena	Senior Monitoring and Evaluation Officer, AgLinks project, DAI
4.	Abrorov, Shukrat	Regional Advisory Manager (Fergana), AgLinks project, DAI
5.	Ahborov, Sobir	Chairman of Farmers' Council Quvasoy District, Fergana Region
6.	Babahanov, Alisher K.	Deputy Director on Quality, JV Berad-Agro AgriFirm Ltd.
7.	Bekchanov, Ulugbek	Regional Advisory Manager (Samarkand), AgLinks project, DAI
8.	Dustov, Javhar	Head of International Relations Department of Farmers' Council of Uzbekistan
9.	Fayzilov, Mehroj	Director of 'AgroMir' fruit and vegetable processing group of companies
10.	Gulomov, Azamat	Chief of Laboratory, Uzbek Scientific Research Institute of Horticultural, Grapes and Winery after R.R. Shreder
11.	Holboeyev, Fayzulla	Director of 'Fayzulla Holboyev' Private Farm, Poyariq District of Samarkand region
12.	Jalalov, Sunnat	Regional Advisory Manager (Namangan), AgLinks project, DAI
13.	Kasimov, Mukhamadjon	Deputy Head, Economic Reform Complex, MAWR
14.	M. Cole, Erin	Director, USAID Uzbekistan Country Office
15.	Narzikulov, Husan	Chief of Agriculture and Water Resources Department, Toyloq District of Samarkand Region
16.	Nazarova, Marifat	Household Processing Consultant, AgLinks project, DAI
17.	Nazirov, Asror	Senior Technical Adviser and Regional Advisory Managers, AgLinks project, DAI
18.	Obidov, Abdulla U.	Chief of Agro-technical Department, Uzbek Scientific Research Institute of Horticultural, Grapes and Winery after R.R. Shreder
19.	Park, Nathan	Deputy Director, USAID Uzbekistan Country Office
20.	Pulatov, Zarip	Head of Laboratory, Plant Protection Institute
21.	Qulmatov, Fozil	Head of Executive Apparatus of Farmers' Council of Uzbekistan
22.	Salikhov, Zakhid A.	Deputy Director, Dept. of International Relations, MAWR
23.	Shermatov, Bakhtiyor	Head of Department of Coordinating the Activity of Regional Branches of the Farmers' Council of Uzbekistan
24.	Umarov, Sherzod	Chief Specialist Department for Foreign Investments and Project Monitoring, MAWR
25.	Yuldashev, Mirzohid	Head of Innovation Centre under the Farmers' Council of Uzbekistan

## Annex A2. AgriFirm and Water User Association Contacts

#	Name	Title
1.	Abdurazzaqov, Abdugani	Member Farmer, Poyariq District, Samarkand Region
2.	Ahmedova, Laylohon	Member Farmer, Turakurgon District, Namangan Region
3.	Alimov, Sherali	Registered Private Farmer, Poyariq District, Samarkand Region
4.	Arolova, Mastura	Housewife, Private Household Owner, Pop District, Namangan Region
5.	Ashurmatov, Rahmonali	Private Household Owner, Pop District, Namangan Region
6.	Ashurov, Parpivoy	Private Household Owner, Pop District, Namangan Region
7.	Azimov, Olimjon	Member Farmer, Turakurgon District, Namangan Region
8.	Azimova, Zuraffo	Accountant, Private Household owner, Toyloq District, Samarkand Region
9.	Bahriev, Jamshed	Director, 'Istiqlol Meva Sabzavot' AgriFirm, Samarkand District, Samarkand Region
10.	Bahriev, Juraqul	Member Farmer, Samarkand District, Samarkand Region
11.	Baymatov, Farhod	Registered Private Farmer, Poyariq District, Samarkand Region
12.	Bogirova, Hurshida	Housewife, Private Household Owner, Toyloq District, Samarkand Region
13.	Bolqichev, Azam	Member Farmer, Poyariq District, Samarkand Region
14.	Boymatov, Murodjon	Registered Private Farmer, Quvasoy District, Fergana Region
15.	Boymatova, Holbuvi	Head of 'Holbuvi' Private Farm, Poyariq District, Samarkand Region
16.	Boymirzaev, Rahimjon	Registered Private Farm, Turakurgon District, Namangan Region
17.	Bozorov, Shamsi	Member Farmer, Samarkand District, Samarkand Region
18.	Burieva, Muhabbat	Employee of the Registered Private Farm, Pop District, Namangan Region
19.	Davlatov, Muminjon	Registered Private Farm, Quvasoy District, Fergana Region
20.	Dehqanova, Pardohol	Registered Private Farmer, Poyariq District, Samarkand Region
21.	Doniyorova, Fatima	Registered Private Farmer, Toyloq District, Samarkand Region
22.	Dovidov, Abdulla	Member Farmer, Pop District, Namangan Region
23.	Egamov, Abdurahmon	Member Farmer, Pop District, Namangan Region
24.	Ergashev, Izzatillo	Registered Private Farm, Samarkand District, Samarkand Region
25.	Eshboyeva, Rano	Advisor at the Neighborhood Committee, Pop District, Namangan Region
26.	Eshkuvatov, Erkin	Director, 'Hujaboston Suv Tarmogi' WUA, Poyariq District, Samarkand Region
27.	Eshmatov, Turgunali	Private Household Owner, Pop District, Namangan Region
28.	Eshquziev, Muhammadjon	Employee of the 'Pungon' WUA, Pop District, Namangan Region
29.	Esonov, Erkinjon	Member Farmer, Turakurgon District, Namangan Region
30.	Fayziev, Akram	Registered Private Farm, Pop District, Namangan Region
31.	Ganiev, Saydullo	Registered Private Farm, Pop District, Namangan Region
32.	Giyosov, Rahimberdi	Registered Private Farm, Turakurgon District, Namangan Region
33.	Haknazarov, Abdugaffor	Cold Storage Owner, Head of " Private Farm, Turakurgon District, Namangan Region
34.	Halimov, Erkin	Registered Private Farmer, Toyloq District, Samarkand Region
35.	Hamidov, Komil	Member Farmer, Samarkand District, Samarkand Region
36.	Hamidova, Qandolat	Registered Private Farmer, Toyloq District, Samarkand Region
37.	Hamraev, Isomiddin	Accountant of 'Shirinsuv Yangiyer' WUA, Popo District, Namangan Region

38.	Hamroqulov, Abbas	Member Farmer, Samarkand District, Samarkand Region
39.	Haqnazarov, Hasanboy	Registered Private Farm, Turakurgon District, Namangan Region
40.	Haydarov, Gofurjon	Registered Private Farm, Pop District, Namangan Region
41.	Haydarova, Zebiniso	Housewife, Private Household Owner, Toyloq District, Samarkand Region
42.	Hayitov, Saydullo	Member Farmer, Pop District, Namangan Region
43.	Holboyeva, Zuhra	Graduate of Medical Collage, Pop District, Namangan Region
44.	Holmatova, Zulfiya	Head of 'Oltinvodiy Diyori' Private Farm, Turakurgon District, Namangan Region
45.	Holmirzaev, Abdulaziz	Registered Private Farm, Turakurgon District, Namangan Region
46.	Holov, Shukrillo	Registered Private Farmer, Toyloq District, Samarkand Region
47.	Hotamov, Husnatillo	Registered Private Farmer, Toyloq District, Samarkand Region
48.	Hudayberdiev, Mahammat	Registered Private Farmer, Poyariq District, Samarkand Region
49.	Hudayberdieva, Erkinoy	Private Farm Accountant, Poyariq District, Samarkand Region
50.	Hudoynazarova, Salima	Utility Service Employee, Private Household Owner, Quvasoy District, Fergana Region
51.	Hujamov, Ilhom	Head of 'Akbarshoh Akbar' Private Farm, Quvasoy District of Fergana Region
52.	Husainov, Alisher	Member Farmer, Samarkand District, Samarkand Region
53.	Husanov, Mirali	Registered Private Farm, Poyariq District, Samarkand Region
54.	Ibragimov, Shukhrat	Accountant, 'Karshiboy Mirob' WUA, Poyariq District, Samarkand Region
55.	Ibronov, Alijon	Member Farmer, Quvasoy District, Fergana Region
56.	Iskandarov, Sayfiddin	Registered Private Farmer, Poyariq District, Samarkand Region
57.	Isroilov, Mahmudjon	Member Farmer, Turakurgon District, Namangan Region
58.	Isroilova, Matluba	Housewife, Owner of Private Household, Turakurgon District, Namangan Region
59.	Jumaev, Umed	Member Farmer, Samarkand District, Samarkand Region
60.	Juraev, Hayitali	Head of 'Tursunli' Private Farm, Pop District, Namangan Region
61.	Juraev, Hidrali	Registered Private Farm, Pop District, Namangan Region
62.	Juraev, Shuhrat	Registered Private Farmer, Toyloq District, Samarkand Region
63.	Juraeva, Manzura	Cook at the Secondary School, Pop District, Namangan Region
64.	Khamraev, Ravshan	Registered Private Farmer, Poyariq District, Samarkand Region
65.	Khojanazarov, Karimjon	Head of " Private Farm, Turakurgon District, Namangan Region
66.	Komilova, Kamola	Employee of the Private Farm, Member of the Private Household, Quvasoy District, Fergana Region
67.	Latipov, Abdurashid	Director, 'Turakurgon Sohibkorlari' AgriFirm, Turakurgon District, Namangan Region
68.	Mahmudov, Ahmadjon	Member Farmer, Quvasoy District, Fergana Region
69.	Mahmudov, Nematjon	Director, 'Quvasoy Behizorlary' AgriFirm, Quvasoy District, Fergana Region
70.	Makhmudov, Alam	'Bahriev Halim Boglari' Private Farm, Samarkand District, Samarkand Region
71.	Mallaev, Asror	Head of 'Davlatjon Sardor Tokzori' Private Farm, Toyloq District, Samarkand Region
72.	Mamadaliyev, Azamat	Member Farmer, Pop District, Namangan Region
73.	Mamadaliyev, Oybek	Registered Private Farm, Pop District, Namangan Region

74.	Mamadjanov, Nabijon	Registered Private Farm, Pop District, Namangan Region
75.	Mamatov, Muminjon	Registered Private Farm, Pop District, Namangan Region
76.	Mamirov, Farhod	Member Farmer, Poyariq District, Samarkand Region
77.	Mansurjon Sohibnazarov	Director, 'Dilkusho Sifat' AgriFirm, Toyloq District, Samarkand Region
78.	Mirzabekov, Komiljon	Registered Private Farm, Turakurgon District, Namangan Region
79.	Mirzaev, Eldor	Owner of Cold Storage, Head of " Private Farm, Pop District, Namangan Region
80.	Mirzaev, Iqbol	Employee of the 'Pungon' WUA, Pop District, Namangan Region
81.	Mirzayev, Hudoyor	Manager of 'Damkhasa Arigi' WUA, Poyariq District, Samarkand Region
82.	Mirzayev, Mamadiyar	Registered Private Farmer, Poyariq District, Samarkand Region
83.	Muminov, Tolib	Member Farmer, Quvasoy District, Fergana Region
84.	Nabiev, Mirzo	Registered Private Farmer, Toyloq District, Samarkand Region
85.	Najmiyev, Golib	'Najmiyev Fazliddin Fayz Agro' Private Farm, Manager of Cold Storage, Samarkand District, Samarkand Region
86.	Nishonboyeva, Feruza	Graduate of Collage, Member of the Private Household, Quvasoy District, Fergana Region
87.	Norqulov, Navruz	Registered Private Farmer, Poyariq District, Samarkand Region
88.	Nurmukhamedova, Sayyora	Member Farmer, Toyloq District, Samarkand Region
89.	Ochilov, Rahmon	Registered Private Farmer, Poyariq District, Samarkand Region
90.	Olimhonov, Ortiqhon	Private Orchard Owner, Pop District, Namangan Region
91.	Olmatoeva, Zulfiya	Registered Private Farm, Turakurgon District, Namangan Region
92.	Omonov, Ibrohimjon	Accountant, 'Pungon' WUA, Pop District, Namangan Region
93.	Oripov, Davron	Registered Private Farm, Samarkand District, Samarkand Region
94.	Otaboeva, Umitoy	Advisor at the Neighborhood Committee, Pop District, Namangan Region
95.	Pirmatov, Yoqubjon	Registered Private Farm, Samarkand District, Samarkand Region
96.	Qaraaulov, Bakhtiyor	Water inspector, Poyariq District, Samarkand Region
97.	Qarshiev, Jasur	Member Farmer, Poyariq District, Samarkand Region
98.	Qarshiev, Rustam	Member Farmer, Poyariq District, Samarkand Region
99.	Qarshiev, Tulqin	Member Farmer, Poyariq District, Samarkand Region
100.	Qarshiev, Turgunboy	Member Farmer, Poyariq District, Samarkand Region
101.	Qodirov, Abdulhakim	Private Household Owner, Pop District, Namangan Region
102.	Qodirov, Hasanboy	Registered Private Farm, Turakurgon District, Namangan Region
103.	Qodirova, Shohida	Teacher at the Kindergarten, Pop District, Namangan Region
104.	Qoraev, Shokir	Head of 'Kupaysinobod' Private Farm, Quvasoy District, Fergana Region
105.	Qosimov, Narzullo	Registered Private Farmer, Toyloq District, Samarkand Region
106.	Quchbaeva, Mahfirat	Employee of the Registered Private Farm, Pop District, Namangan Region
107.	Qurahalieva, Gulnara	Employee of the Registered Private Farm, Pop District, Namangan Region
108.	Quramatov, Giyos	Registered Private Farm, Pop District, Namangan Region
109.	Qurolov, Nazirjon	Private Orchard Owner, Pop District, Namangan Region
110.	Qushvaqov, Boliboy	Registered Private Farmer, Poyariq District, Samarkand Region

111.	Rahimberdiev, Husan	Member Farmer, Quvasoy District, Fergana Region
112.	Rahimberdiev, Odil	Owner of Cold Storage, Head of 'Lochinbek Rahimberdiev Bogi' Private Farm, Quvasoy District, Fergana Region
113.	Rahmanova, Mavluda	Housewife, Owner of Private Household, Turakurgon District, Namangan Region
114.	Rahmanova, Oisha	Member Farmer, Turakurgon District, Namangan Region
115.	Rahmonov, Hamroqul	Registered Private Farmer, Toyloq District, Samarkand Region
116.	Rahmonov, Muhtorjon	Registered Private Farm, Turakurgon District, Namangan Region
117.	Rajabova, Muharram	Utility Service Employee, Private Household Owner, Quvasoy District, Fergana Region
118.	Rashidova, Mavlyuda	Registered Private Farm, Quvasoy District, Fergana Region
119.	Rasulov, Abduhalil	Registered Private Farm, Pop District, Namangan Region
120.	Razaqov, Shuhratjon	Registered Private Farmer, Quvasoy District, Fergana Region
121.	Rizoqulov, Saydullo	Registered Private Farm, Samarkand District, Samarkand Region
122.	Rustamova, Bodomhon	Member Farmer, Turakurgon District, Namangan Region
123.	Rustamova, Sevara	Employee of the Registered Private Farm, Pop District, Namangan Region
124.	Ruzibaev, Sadridin	Member Farmer, Poyariq District, Samarkand Region
125.	Safarov, Sharif	Head of 'Mehribon Muhlisa' Private Farm, Toyloq District, Samarkand Region
126.	Salaidinov, Muhammadnazar	Registered Private Farm, Quvasoy District, Fergana Region
127.	Salaydinov, Nozir	Head of 'Jamshid Mavlon Iqboliddin' Private Farm, Quvasoy District of Fergana Region
128.	Saydullaev, Asatulla	Registered Private Farmer, Poyariq District, Samarkand Region
129.	Shakarov, Mamadali	Chairman of the Board, 'Hujaboston Suv Tarmogi' WUA, Poyariq District, Samarkand Region
130.	Shakarova, Shafoat	Private Household Owner, Poyariq District, Samarkand Region
131.	Sharipov, Ahror	Member Farmer, Samarkand District, Samarkand Region
132.	Sharipov, Rahmonali	Registered Private Farmer, Quvasoy District, Fergana Region
133.	Shavkatov, Shoir	Member Farmer, Quvasoy District, Fergana Region
134.	Sidiqov, Saidqosim	Member Farmer, Poyariq District, Samarkand Region
135.	Sobirov, Rahmat	Head of 'Sobirov Ergash Boglari' Private Farm, Manager of Cold Storage, Samarkand District, Samarkand Region
136.	Sultanov, Fazliddin	Agronomist, 'Turakurgon Sohibkorlari' AgriFirm, Turakurgon District, Namangan Region
137.	Teshaev, Holboy	Member Farmer, Samarkand District, Samarkand Region
138.	Tillayeva, Munavvar	Registered Private Farmer, Toyloq District, Samarkand Region
139.	Tilovboyev, Eshpulat	Member Farmer, Poyariq District, Samarkand Region
140.	Togaev, Abbosali	Head of 'Arabjonobod' Private Farm, Quvasoy District, Fergana Region
141.	Togayev, Arabjon	Member Farmer, Quvasoy District, Fergana Region
142.	Toshbaev, Muhammadjon	Member Farmer, Turakurgon District, Namangan Region
143.	Toshbekov, Qilichboy	Member Farmer, Poyariq District, Samarkand Region
144.	Toshpulatov, Tojiddin	Member Farmer, Turakurgon District, Namangan Region
145.	Tursunmuratova, Oytubi	Housewife, Private Household Owner, Poyariq District, Samarkand Region
146.	Tursunov, Hotam	Registered Private Farm, Samarkand District, Samarkand Region
147.	Ubaydullaeva, Munisahon	Secretary, Neighborhood Committee, Private Household Owner,

		Quvasoy District, Fergana Region
148.	Umurzaqov, Alloyor	Director, 'Karshiboy Mirob' WUA, Poyariq District, Samarkand Region
149.	Umurzaqov, Nahalboy	Registered Private Farm, Poyariq District, Samarkand Region
150.	Urolov, Umarali	Private Orchard Owner, Pop District, Namangan Region
151.	Usarov, Farhod	Member Farmer, Poyariq District, Samarkand Region
152.	Usmonov, Ikrom	Registered Private Farm, Pop District, Namangan Region
153.	Vaqqosova, Zaynab	Nurse at the Village Health Center, Pop District, Namangan Region
154.	Yuldashev, Abloqul	Registered Private Farmer, Poyariq District, Samarkand Region
155.	Yuldashev, Bakhtiyor	Registered Private Farmer, Poyariq District, Samarkand Region
156.	Yuldashev, Tohirjon	Member Farmer, Quvasoy District, Fergana Region
157.	Yuldashev, Tursunali	'Ruzimurod Ota' Private Farm, Poyariq District, Samarkand Region
158.	Yuldoshev, Tursunali	Member Farmer, Poyariq District, Samarkand Region
159.	Yusufjanov, Bahodir	Head 'Erkinjonov Bahodir Yangi Bogi' Private Farm, Quvasoy District, Fergana Region
160.	Ziyobaev, Nurbek	Non-registered farmer, Poyariq District, Samarkand Region

## **ANNEX B: DETAILED TRAVEL AND MEETING SCHEDULE**

## 30 June – 3 August 2013

### Summary of travel agenda

<b>From</b>	<b>To</b>	<b>Site</b>
30 June	5 July	Tashkent
6 July	12 July	Samarkand
13 July	16 July	Fergana
17 July	19 July	Namangan
20 July	3 August	Tashkent

### 30 June – 5 July, Tashkent city and Tashkent region

#### **June 30, Sunday, day 1, Tashkent**

- Conrad Fritsch arrives in Tashkent from London, UK
- Ulugbek Dedabaev arrives in Tashkent from Namangan
- Set up working condition in hotel room and team planning meeting

#### **July 1, Monday, day 2, Tashkent.**

- Team planning meeting
- In-briefing in the USAID CAM, US Embassy (3, Moyqurqon st.)
- Meeting with 'AgLinks' project staff (12, Afrosiyob st.)
- Team planning meeting and desk work

#### **July 2, Tuesday, day 3, Tashkent.**

- Team planning meeting
- Meeting at the Ministry of Agriculture and Water Resources of Republic of Uzbekistan
- Team planning meeting and desk work

#### **July 3, Wednesday, day 4, Tashkent.**

- Meeting with Mr. Ravshan Abdullaev, Deputy Director of Horticulture Research Institute named after 'R.R. Shreder'
- Tour of institute demo fields
- Meeting/interview with Mr. Alisher Babahanov, Deputy Director of JV Berad-Agro
- Team planning meeting and desk work

#### **July 4, Thursday, day 5, Tashkent (US Independence Day).**

- Development and revision of questionnaires
- Team planning meeting and desk work

#### **July 5, Friday, day 6, Tashkent region (fieldwork).**

- Visit to Parkent district of Tashkent region
- Meet with processors and visit fields
- Team planning meeting and desk work

#### **July 6, Saturday, day 7, Tashkent – Samarkand.**

- 
- Travel to Samarkand by car
  - Team planning meeting and rest

### **7 July – 12 July, Samarkand region**

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#### **July 7, Sunday, day 8, Samarkand.**

- Planning, desk work, rest

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#### **July 8, Monday, day 9, Samarkand, Poyariq district.**

- Travel to Poyariq district 'Damkhasa Arigi' WUA territory
- Meet and interview Mr. Hudoyor Mirzaev, Head of 'Damkhasa Arigi' WUA
- Conduct focus group meeting with WUA member farmers
- Conduct interview with private farmer
- Field visit and tour of fields

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#### **July 9, Tuesday, day 10, Samarkand, Toyloq district.**

- Travel to Toyloq district 'Dilkusho Sifat' AgriFirm territory
- Meet and interview Mr. Mansur Sohbnazarov, Head of 'Dilkusho Sifat' AgriFirm
- Conduct focus group meeting with AgriFirm member farmers
- Conduct focus group meeting with women processing group
- Conduct interview with 2 demonstration plot farmers
- Field visit and tour of fields

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#### **July 10, Wednesday, day 11, Samarkand, Poyariq district.**

- Travel to Poyariq district 'Hojabuston Suv Tarmogi' WUA territory
- Meet and interview Mr. Erkin Eshkuvatov, Head of WUA
- Conduct focus group meeting with WUA member farmers
- Conduct interview with a demonstration plot farmer
- Field visit and tour of fields

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#### **July 11, Thursday, day 12, Samarkand, Samarkand district.**

- Travel to Samarkand district 'Istiqlol Meva Sabzavot' AgriFirm territory
- Meet and interview Mr. Jamshed Bahriev, Director of AgriFirm
- Conduct focus group meeting with AgriFirm member farmers
- Conduct interview with a demonstration plot farmer
- Conduct interview with 2 Cold Storage farmers
- Field visit and tour of fields

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#### **July 12, Friday, day 13, Samarkand, Poyariq district.**

- Travel to Poyariq district ‘Karshiboy Mirob’ WUA territory
- Meet and interview Mr. Alloyor Umurzaqov, Director of WUA
- Conduct focus group meeting with WUA member farmers
- Conduct interview with a demonstration plot farmer
- Field visit and tour of fields

**July 13, Saturday, day 14, Samarkand – Fergana.**

- Leave Samarkand and travel to Fergana by car
- Arrive in Fergana city and check in the hotel
- Team planning meeting and rest

**14 July – 16 July, Fergana region**

**July 14, Sunday, day 15, Fergana.**

- Planning, desk work, rest

**July 15, Monday, day 16, Fergana, Quvasoy district.**

- Travel to Quvasoy district ‘Muyan Sohinkorlari’ AgriFirm territory
- Meet and interview Mr. Sobit Akbarov, A.I. Director of AgriFirm
- Conduct focus group meeting with AgriFirm member farmers
- Conduct focus group meeting with women processing group
- Conduct interview with 2 demonstration plot farmers
- Field visit and tour of fields

**July 16, Tuesday, day 17, Fergana, Quvasoy district.**

**17 July – 20 July, Namangan region**

**July 17, Wednesday, day 18, Namangan, Turakurgan district.**

- Travel to Turakurgan district ‘Turakurgan Sohibkorlari’ AgriFirm territory
- Meet and interview Mr. Abdurashid Latipov, Director of AgriFirm
- Conduct focus group meeting with AgriFirm member farmers
- Conduct interview with a Cold Storage farmer
- Conduct interview with 2 demonstration plot farmers
- Conduct focus group meeting with women processing group
- Field visit and tour of fields

**July 18, Thursday, day 19, Namangan, Pop district.**

- 
- Travel to Pop district ‘Pungon’ WUA territory
  - Meet and interview Mr. Ibrohimjon Esonov, Accountant of WUA
  - Conduct focus group meeting with WUA member farmers
  - Conduct interview with a Cold Storage farmer
  - Conduct interview with demonstration plot farmer
  - Field visit and tour of fields

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**July 19, Friday, day 20, Namangan, Pop district.**

- Travel to Pop district ‘Shirinsuv Yangiyer’ WUA territory
- Meet and interview Mr. Isomiddin Hamraev, Accountant of WUA
- Conduct focus group meeting with WUA member farmers
- Conduct focus group meeting with women processing group
- Field visit and tour of fields

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**July 20, Saturday, day 21, Namangan – Tashkent.**

- Leave Namangan and travel to Tashkent by car
- Arrive in Tashkent city and check in the hotel
- Team planning meeting and rest

**20 July – 3 August, Tashkent city**

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**July 20, Saturday, day 21, Namangan – Tashkent.**

- Leave Namangan and travel to Tashkent by car
- Arrive in Tashkent city and check in the hotel
- Team planning meeting and rest

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**July 21, Sunday, day 22, Tashkent.**

- Planning, desk work, rest

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**July 22- 23, Monday-Tuesday, day 23-24, Tashkent.**

- Prepare initial draft report

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**July 24, Wednesday, day 25, Tashkent.**

- Prepare initial draft report and PP presentation

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**July 25, Thursday, day 26, Tashkent.**

- Submit initial draft report and PP presentation to USAID

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**July 26, Friday, day 27, Tashkent.**

- Mid-term USAID briefing

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**July 27 – 1 August, Saturday - Thursday, day 28 - 33, Tashkent.**

- Prepare final evaluation report

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**July 29, Monday, day 30, Tashkent.**

- Meet Vasilya Abdullaeva, Tashkent City Center for Testing and Certification
- Meet Zarip Pulatov, Plant Protection Institute
- Meet representatives of Farmers’ Council of Uzbekistan

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***July 30, Tuesday, day 31, Tashkent.***

- Videoconference with Mehroj Fayzilov, Director of 'Agromir' company
- Meeting with representatives of AgLinks project

***July 30, Thursday, day 33, Tashkent.***

- Briefing MAWR on evaluation results

***2 August, Friday, day 34, Tashkent.***

- Final out-briefing with AgLinks and USAID.
- Submit draft report to USAID

***3 August, Saturday, day 35, Tashkent.***

- Return home
-

**ANNEX C: EVALUATION SCOPE OF WORK**



## SECTION C – DESCRIPTION / SPECIFICATIONS/STATEMENT OF WORK

### C.1. PURPOSE

The United States Agency for International Development (USAID), Central Asian Republics (CAR) Regional Mission, Uzbekistan Country Office (UCO) seeks to conduct a third-party performance evaluation of the Agricultural Linkages Project (AgLinks), Contract No. EDH-I-07-05-00004, which ended on January 31, 2012. This performance evaluation will validate AgLinks' theory of change, assess how well implementation decisions supported achievement of results, examine differential outcomes of men and women beneficiaries, and make evidence-based recommendations for enhancing the performance of the follow-on project, Agricultural Linkages Plus (AgLinks Plus). The purpose of the evaluation is to make recommendations on the future direction and activities of AgLinks Plus program.

### C.2. BACKGROUND

USAID's agricultural strategy in Uzbekistan to date has focused on assisting private farmers diversify out of low-profit, state-controlled products, such as wheat and cotton, by developing stronger linkages to high-income markets for other agricultural commodities. This strategy aligns with the Government of Uzbekistan's (GOU) goal of increasing fruit and vegetable output by 30% over the next three years. While cotton and wheat have historically been the two most important export crops in Uzbekistan, fruits and vegetables (F&V) have significant potential for growth. F&V already account for nearly \$1 billion in exports to Russia alone, the same amount generated from all of Uzbekistan's cotton exports.

### C.3. DESCRIPTION OF PROGRAM THEORY AND PROJECT DESIGN

#### Value-chain Approach

Starting in 2008, USAID's AgLinks project strengthened the value-chains of selected high-value fruits and grapes in three provinces of Uzbekistan – Samarkand, Namangan, and Ferghana – and in Tashkent City. These locations were chosen through mutual agreement between the Government of Uzbekistan and USAID. To improve the livelihoods of USAID's target private farmers, AgLinks' technical approach focused on:

- developing the capacity of Local Service Providers (LSPs) to identify and capitalize on new market opportunities in the agricultural sector;
- Increasing productivity at the farm level to meet market demand;
- upgrading target agribusiness value chains by ameliorating choke points in the market linkages between producers, input suppliers, agro-processors and buyers; and
- fostering close collaboration between the Ministry of Agriculture and Water Resources (MAWR) and public agriculture research institutes to increase the number of specialized agricultural service providers; improving coordination among these providers, farmers, and the MAWR; and thereby establishing a sustainable model for continuous improvements in agricultural productivity driven by market-demand.

AgLinks opted to work principally through two rural institutions to reach farmers; namely, Water Users Associations (WUAs) and AgriFirms. In addition to these two rural organizations the project also worked with private sector agro- processors and public sector institutions linked to the horticulture sector. The projects crop focus was on fruits; mainly stone fruits, pome fruits and grapes.

## **Partner Organizations and Geographic Focus**

AgLinks supported increased agricultural productivity along the fruit value chain in Uzbekistan with a focus on on-farm production. This focus was reflected in the relative share of the different types of partner organizations over the course of the project.

Production-related partners accounted for 62% of total partners while processors and public institutions represented roughly 19% each. To reach farmers – fruit producers – the project collaborated with two grass roots rural organizations – Agrifirms and WUAs. In Uzbekistan Agrifirms are not general agribusiness-related entities but very specific legal business bodies which replaced the former horticulturally-oriented shirkats (agricultural cooperatives in Uzbek). AgLinks cooperated with 5 Agrifirms (two in both Samarkand and Fergana provinces and one in Namangan) and 5 WUAs (three in Samarkand and two in Namangan).

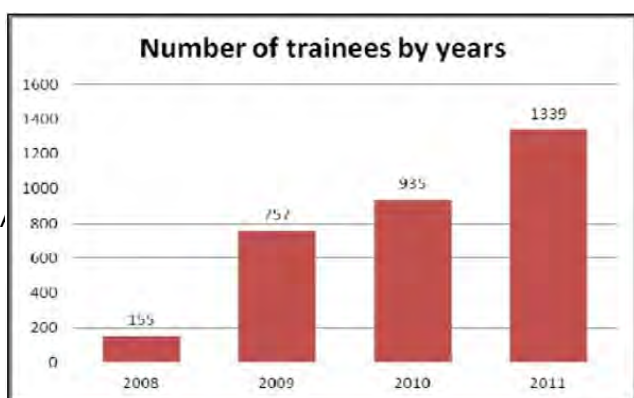
Processor partners were represented by three companies – two of them (Agromir and Siyob Sahovat) with a main focus on juicing (for the stone and pome fruits) and Berad-Agro - only dried produce processing (for transforming grapes into raisins). For partnering with public institutions, AgLinks selected the most crucial organizations for horticulture sector development and quality control in Uzbekistan. Shreder Horticulture Research Institute has a long history and was previously the Central Asian regional research center during the Soviet era. Project technical staff quickly identified pest and disease identification and control as an area in need of immediate assistance in Uzbekistan and subsequently partnered with National Plant Protection Center. The Tashkent City Center for Testing and Certification was the third public sector representative identified as a local partner to address these types of issues while implementing AgLinks activities.

The principle local government partner for the AgLinks activity was the Ministry of Agriculture and Water Resources (MAWR). USAID and MAWR concluded a Memorandum of Understanding (MOU) regarding the AgLinks activity which included specific geographic areas in which the project would be active. AgLinks was conceived as a pilot program to determine what types of actions could be undertaken to impact the horticulture industry and how best to implement activities in the Uzbek environment.

Under the terms of the MOU the project was authorized to work with production partners in three provinces: Fergana, Namangan and Samarkand. Within these provinces specific districts were similarly targeted: Kuvasay in Fergana, Pop and Turakurgan in Namangan and Samarkand, Toyloq and Poyariq districts in Samarkand Province.

## **Training Programs (Production-related)**

The bulk of the project training programs over the life of the project were directed to farm producers through the WUAs and AgriFirms. The total number of trainings per district averaged in the low 20's over three full agricultural seasons (calendar years 2009-11) or about 7 per season. More trainings were held in those districts with more partners (ex., Poyariq and Pop) while those districts with fewer partners had lower levels of trainings (Samarkand and Toyloq).



A total of 3,186 trainees were introduced to modern orchard management, post-harvest handling and strategic planning through these training sessions over the life of the project. AgLinks used **demonstration plots** as the principle means of holding training sessions targeted to farmers. These trainings were hands-on, with minimal classroom instruction and became known as “field schools” with demo plots serving as “classrooms.” By the end of the project a total of 31 demonstration plots had been established in the targeted districts and with the respective partners. The demonstration plots focused on a variety of crops (e.g., apple, cherry, grape, peach, plum, and pomegranate), as well as a diverse set of new techniques (e.g., trellis, pruning, pest management, drip irrigation, grafting, young vineyard, and biosaline technologies).

### **Accounting and Business Plan Trainings**

AgLinks also hired the National Association of Accountants and Auditors of Uzbekistan (NAAA) to provide trainings in 4 provinces; Tashkent, Samarkand, Ferghana and Namangan. Each training took place over a four-day period and culminated in a competency test that was certified by the NAAA. A total of 91 accountants and representatives from 20 Agrifirms participated. The simplified accounting system has become one of the market driven services offered by Agrifirms to private farmers with technical assistance from AgLinks Uzbekistan.

### **Post-Production Interventions**

AgLinks initiated variety contests (VCs) during the 2009 agricultural season to promote farmer interaction, stimulate interest in agronomic best practices, identify new local varieties and disseminate agricultural information. Variety contests also provided an opportunity for farmers to share interest and experiences, spot common concerns, and identify solutions to problems. Three variety contests were organized in 2009 with separate sessions held for apricots, peaches and grapes in the provinces of Namangan, Ferghana and Samarkand, respectively. Variety contests are held in specific geographic locales based upon their specialization and reputation for that particular fruit produce.

AgLinks facilitated the construction of four on-farm **cold storage facilities** in three provinces of Uzbekistan in FY 2011 through cost-share arrangements with local farmers. Two cold rooms were installed in Namangan, one in Fergana and one in Samarkand during the period of October 2010 to April 2011.

Initial work was done on improving access to **Regional and International Markets**. Uzbekistan has traditionally been a source of fresh and processed fruit produce to the countries that comprised the former Soviet Union, however, these markets have evolved over the last two decades and some now source their produce from other suppliers. AgLinks teamed with local agroprocessors, agrifirms and farmers to begin the process of reintegrating the Uzbek fruit produce into these markets while each year exploring a potential new market. This program was implemented in FY 2009 and FY 2010 but discontinued in FY 2011 due to funding shortfalls.

AgLinks staff collaborated with the centrally funded USAID **Community Connection (CC) program** in both FY 2010 and FY 2011. Community Connection sends groups of roughly 10 host country nationals to the US to meet with American counterparts in a given industry, sector or cluster. AgLinks staff contributed to the program design, identification of appropriate program participants, and accompanied the delegations in these two Community Connection programs.

The FY 2010 collaboration sent 10 Uzbek agriculturalists to California for an exchange visit focused on “Contemporary Agro technology in Fruit Cultivation” for three weeks in the summer (June-July). In the spring of 2011 a second group of Uzbek agriculturalists visited California for a similar period of time on the “Food Safety – Farm to Fork” program. The “community” proposed for the FY 2011 program focused on the domestic supply chain for fruits with a geographic focus on the east and central regions of Uzbekistan. A total of nine (9) Uzbek representatives from Tashkent, Samarkand and Ferghana provinces attended the 3 week program in California from 06 to 27 April 2011.

**Project Performance Indicators**

AgLinks’ Performance Management Plan, approved in September 2008, established 8 top-level indicators to measure project performance. The following table lists the indicators, targets and actuals achieved for Fiscal Year 2009 to 2011.

#	Indicator	Disaggregate	Unit	BL	FY09 Target	FY09 Actual	FY10 Target	FY10 Actual	FY11 Target	FY11 Annual
1	Annual farm yields for all targeted crop commodities for all AgLinks farm clients	Grapes Stone fruits	Mt/h a Mt/h a	6.0	6.5	13.47	7.1	12.5	8.2	
2	Change in profitability index for the AgLinks AgriFirm clients	Uzstandart AgriFirms	% %	5% 3%	7% 6%	5% 315%	15% 14%	12% 61%	25% 23%	15% 3%
3	Change in production volume for targeted commodities among AgLinks clients	Grapes Stone fruits	% %	4% 5%	8% 8%	246% 58%	15% 15%	221% 172%	20% 20%	400% 286%
4	Change in annual sales value for targeted commodities among AgLinks clients	Berard AgroMir	% %	4% 3%	7% 7%	8% 10%	13% 13%	10% 14%	18% 18%	17% 22%
5	Change in sales volume exported for targeted commodities from AgLinks clients	Berard AgroMir	% %	3% 2%	6% 6%	8% 8%	8% 8%	6% 8%	10% 10%	8% 14%
6	Change in sales value exported for targeted commodities from AgLinks clients	Berard AgroMir	% %	2% 2%	5% 5%	6% 9%	7% 7%	5% 11%	9% 9%	7% 12%
7	Number of new techniques and technologies introduced to AgLinks clients	Farms Firms & Agency	# #	0 0	16 9	17 9	10 11	12 11	6 3	8 3
8	Number of new techniques and technologies adopted by AgLinks clients	Farms Firms & Agency	# #	0 0	11 7	17 8	7 9	12 10	5 2	8 3

FY11

**C.4. EVALUATION QUESTIONS:**

The performance evaluation will be designed and implemented to address the following key questions:

1. How and to what extent did the project create or strengthen linkages in the fruit and grapes value chains? (PERFORMANCE)
  - A. How and to what extent have relationships between farmers and processors been improved as a result of project activities?
  - B. How and to what extent have relationships between farmers and exporters been improved as a result of project activities?
  
2. To what extent were women and woman-owned firms actively engaged and given a fair opportunity to access or compete for project resources? (PERFORMANCE)
  - A. On average, did women and women-owned firms who participated in AgLinks have different outcomes in terms of increased income and productivity than their male counterparts? If so, why?
  - B. How can women and women-owned firms be better engaged in the project?
  
3. How and to what extent did information exchange and technical collaboration amongst project partners (i.e., farmers, WUAs, Agrifirms, public research institutions, governmental authorities, and other stakeholders) help or hinder project activities? (PROCESS)
  - A. Did the project identify the right communication channels between key stakeholders for effective implementation?
  - B. Was the project able to effectively open these communication channels?
  - C. Which communication channel(s) contributed the most to strengthening market linkages and how?
  - D. What more could have been done to improve communication between key stakeholders?
  
4. To what extent are farmers in the project's target regions still using the new agricultural technologies and new irrigation methods introduced by the project? (SUSTAINABILITY)
  - A. With an eye to assessing sustainability of reported results, what is the uptake/retention rate for new technologies and methods between Year 1 and Year 2 participants?
  
5. What additional activities should the project consider undertaking that would leverage other projects in USAID Central Asia's portfolio so as to remove barriers to horticulture export? (DESIGN)

### **C.5. EVALUATION METHODOLOGY**

The evaluation must include but may not be limited to the following data collection methods:

- Desk review of relevant documents (project documents, quarterly and annual project reports, progress reports on project activities, performance indicators, etc.);
- Individual or group interviews with representatives of project partners and additional stakeholders;
- Interviews with project beneficiaries;
- Meetings with representatives of USAID Uzbekistan Office;
- Meetings with local government officials, as appropriate;
- Site visits to project target areas.

The Evaluation Team must present a detailed statement of proposed evaluation methods for each

evaluation question, including a data analysis plan for each evaluation question, in the submitted technical proposal.

### **Existing Performance Information**

USAID will provide upon awarding of the task order the following documents:

- AgLinks and AgLinks Plus contracts;
- AgLinks and AgLinks Plus results frameworks, Performance Management Plans, and performance data;
- AgLinks and AgLinks Plus annual work plans, technical documents, and progress reports.

## **C.6. QUALIFICATION OF KEY PERSONNEL**

### **Key Personnel:**

#### **Technical Qualifications:**

#### **Evaluation Methods Specialist (Evaluation Team Leader)- Level II**

The Evaluation Methods Specialist will be responsible for providing leadership for the team, finalizing the evaluation design, coordinating activities, arranging periodic meetings, consolidating individual input from team members, coordinating the process of assembling the final findings and recommendations into a high quality document, writing the draft and final evaluation reports. S/he will also lead the preparation and presentation of the key evaluation findings and recommendations to the USAID/CAR team.

This person must possess the following minimum qualifications:

- 10 years of experience in evaluation, economics, agriculture and/or a related field;
- Master's degree with an emphasis on research and/or evaluation;
- At least 5 years of experience in conducting qualitative evaluations/ assessments;
- At least 5 years of experience in leading international evaluation teams and preparing high quality evaluation reports;
- Familiarity with the agriculture sector is a plus;
- Excellent oral and written skills are required;
- Fluency in English;
- Proficiency in Russian is desirable.

#### **Local Agriculture Technical Specialist**

The Local Agriculture Technical Specialist will be responsible for assisting the Evaluation Specialist (Evaluation Team Leader) in conducting the necessary data analysis, organizing and attending meetings with relevant stakeholders and contributing to the draft and final evaluation report.

This person must possess the following minimum expertise and skills:

- 7 years of work experience in the implementation of agricultural projects and/or evaluation of

- agriculture programs in Uzbekistan;
- Master's degree in agriculture or a related field;
  - Evidence of strong communication skills, both interpersonal and written;
  - Preference will be given to candidates who understand and speak Uzbek, Russian, and English.

**[END OF  
SECTION C]**

## **ANNEX D: EVALUATION METHODOLOGY**

A comprehensive desk review of relevant project material was conducted prior to initiation of in-country activities to gain an understanding and background of project objectives, and implementation results. A complex sample selection process was used to select a minimally sufficient representation of women, AgriFirm and WUA Directors, crop variety specialization, cold store operators and demo plot operators to be included for either focus group or individual interviews. The sampling procedure complements the AgLinks Project implementation strategy which is to identify AgriFirm and WUA informal leaders and work with them to establish innovative technologies through introduction of demonstration plots, cold storages, nurseries, etc. around which training programs are developed to attract other farmers in the immediate area. Consequently, these technology leaders or technology champions are selected for individual interviews while the remaining farmers are eligible for selection as focus group participants.

The RFTOP identified evaluation questions are largely oriented to measuring improvement in communications and relationships between various economic actors including producers and processors, domestic and export marketing enterprises, agricultural service providers, and technical support organizations. Other objectives include measurement of project beneficiary income increases over the project period, effectiveness of partner communication and linkage activities and technology uptake and retention levels.

The team used several compatible and complementary data collection and analytical techniques to address this differential set of objectives including comparison of historical project data against current conditions, comparative ranking of responses to identical questions by participants at different stages of the value chain and in different geographical locations, and triangulation of qualitative information collected during the interview stage from participants of similar and differing stages along the value chain. Using the formal questions as an entry point the Evaluation Team expanded on them to gain additional important insights into the impact of farm restructuring and land tenure status on farm productivity and marketing development patterns.

Data was collected from participants along the value chain including:

- A comprehensive review of the AgLinks Contract, Workplans, Quarterly Reports, and Performance Monitoring Plans etc to provide the basis for conducting a historical development perspective and measurement of change indicators;
- Semi-structured interviews with AgLinks technical staff and BDS trainers to gain a more complete understanding of the AgLinks technology transfer approach and issues and objectives that are not included in the formal project reports;
- Semi-structured, systematic interviews with partners and beneficiaries involved with leadership and strategy development, and technical activities associated with WUA, AgriFirm, processor, and marketing enterprises. They were asked a common set of questions related to the relevance and importance of crop specific technical training methods and materials, importance and usefulness of technology transfer and market linkage activities, technology adaptation rates, changes in productivity, improvement in communication and working relationships between participants in the various value chain stages, differential gender impacts to project beneficiaries as a result of AgLinks participation, etc.;

- Individual and focus group Interviews differentiated by gender and including subsets of AF and WUA project beneficiaries using a similar set of questions to those used to interview leadership personnel in order to compare and contrast the perceived impact and working relationships between the various project partners and beneficiaries;
- In depth, semi-structured interviews with project public sector partners including Ministry of Agriculture and Water Resources (MAWR), the Shreder Institute for Fruit Growing, Viticulture and Winemaking, Tashkent City Center for Testing and Certification (TCCTC) the National Plant Protection Center, BDS trainers, etc. to gain their perspective on the impact of project activities on improving communications and working relationships and on additional strategies and activities needed to gain long term sustainability of the positive short term project impacts and to address perceived project weaknesses.

There are several limitations inherent to the design of this evaluation:

- Due to funding and time constraints, the field survey sample size is too small to provide conclusions with measurable statistical reliability;
- Recall bias cannot be excluded as some questions required respondents to provide information on events that took place several years in the past;
- Cultural norms may have prevented some respondents from providing negative responses to some questions.

# **ANNEX E: EVALUATION TOOLS**

<b>AGRIFIRM/WATER USERS ASSOCIATION QUESTIONS</b>		pg 1
Questionnaire No. _____		
Region _____ District _____		
AF/WUA Name _____ Date ____/____/____		
Interviewer's initials _____		
Name of Person Interviewed _____		
Position with Organization _____		
Start time: _____		
<b>1) Who are the main clients of the Agrifirm/WUA? (Provide number for each group)</b>		<b>1</b>
a. Members: Registered farmers _____; Member farmers _____	a.	
b. Local non-member farmers _____	b.	
c. Local households _____	c.	
d. Others (please specify) _____	d.	
<b>Questions 2 through 4 are for WUAs only:</b>		
<b>2) What is your source of water?</b>		<b>2</b>
a. River _____	a.	
b. Reservoir _____	b.	
c. Wells _____	c.	
d. Other _____	d.	
<b>2a) Did the government upgrade the water system since Independence?</b> Yes ___ No ___		<b>2a</b>
<b>3) What is the total number of hectares that are provided with water by your WUA?</b> hectares _____		<b>3</b>
<b>4) What is the membership fee per hectare? _____</b>		<b>4</b>
<b>The remaining questions are for both Agrifirms and WUAs.</b>		
<b>5) What commercial services are offered to clients? (Tick all that apply)</b>		<b>5</b>
a. Irrigation _____	a.	
b. Storage _____	b.	
c. Processing _____	c.	
d. Seeds and planting materials _____	d.	
e. Chemical fertilizers _____	e.	
f. Chemical pesticides _____	f.	
g. Marketing and access to domestic bazaars _____	g.	
h. Export of agro products _____	h.	
i. Introduction of new technologies _____	i.	
j. Business planning and accounting _____	j.	
k. Trade credits _____	k.	
l. Technical training/consulting services _____	l.	
m. Plant protection services _____	m.	
n. Pruning _____	n.	
o. Grafting _____	o.	
p. Tractor/machinery service _____	p.	
q. Other (please specify) _____	q.	

<p>6) Which <b>five</b> Agrifirm/WUA's services are the most provided?  <i>(Rank from 1-5 with 1 being the most important)</i></p> <p>a. Irrigation _____</p> <p>b. Storage _____</p> <p>c. Processing _____</p> <p>d. Seeds and planting materials _____</p> <p>e. Chemical fertilizers _____</p> <p>f. Chemical pesticides _____</p> <p>g. Marketing and access to domestic bazaars _____</p> <p>h. Export of agro products _____</p> <p>i. Introduction of new technologies _____</p> <p>j. Business planning and accounting _____</p> <p>k. Trade credits _____</p> <p>l. Technical training/consulting services _____</p> <p>m. Plant protection services _____</p> <p>n. Pruning _____</p> <p>o. Grafting _____</p> <p>p. Tractor/machinery service _____</p> <p>q. Other (please specify) _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>a.</td><td></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> <tr><td>m.</td><td></td></tr> <tr><td>n.</td><td></td></tr> <tr><td>o.</td><td></td></tr> <tr><td>p.</td><td></td></tr> <tr><td>q.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		m.		n.		o.		p.		q.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>6</b></td></tr> </table>	<b>6</b>
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<p>7) Are any of these services provided free of charge to your clients                  Yes ___/ No ___ If yes, which of them? <i>(Tick all that apply)</i></p> <p>a. Irrigation _____</p> <p>b. Storage _____</p> <p>c. Processing _____</p> <p>d. Seeds and planting materials _____</p> <p>e. Chemical fertilizers _____</p> <p>f. Chemical pesticides _____</p> <p>g. Marketing and access to domestic bazaars _____</p> <p>h. Export of agro products _____</p> <p>i. Introduction of new technologies _____</p> <p>j. Business planning and accounting _____</p> <p>k. Credit facilitation _____</p> <p>l. Technical training/consulting services _____</p> <p>m. Plant protection services _____</p> <p>n. Pruning _____</p> <p>o. Grafting _____</p> <p>p. Tractor/machinery service _____</p> <p>q. Other (please specify) _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>a.</td><td></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> <tr><td>m.</td><td></td></tr> <tr><td>n.</td><td></td></tr> <tr><td>o.</td><td></td></tr> <tr><td>p.</td><td></td></tr> <tr><td>q.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		m.		n.		o.		p.		q.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>7</b></td></tr> </table>	<b>7</b>
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<b>7</b>																																					
<p>8) Is the revenue from these services enough to provide AF/WUA financial sustainability?                  Yes ___/ No ___</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>8</b></td></tr> </table>	<b>8</b>																																			
<b>8</b>																																					
<p>9) Does the AgriFirm have any other income sources?                  Yes ___/ No ___ If yes, what kind of sources?</p> <p>a. _____</p> <p>b. _____</p> <p>c. _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>9</b></td></tr> </table>	<b>9</b>																																			
<b>9</b>																																					
<p>10) Has the Agrifirm/WUA annual revenue increased as a result of cooperation with AgLinks project?</p> <p>a. Yes _____</p> <p>b. No _____</p> <p>c. I do not know _____</p> <p>d. Question is not relevant _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>a.</td><td></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> </table>	a.		b.		c.		d.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>10</b></td></tr> </table>	<b>10</b>																										
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<p>11) If yes, what is the percentage of this increase? _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>11</b></td></tr> </table>	<b>11</b>																																			
<b>11</b>																																					

12) What kind of assistance has the <b>Agrifirm/WUA itself</b> obtained from AgLinks project?	<b>12</b>	
a. Production technology trainings _____	a.	
b. Postharvest technology trainings _____	b.	
c. Quality standards trainings _____	c.	
d. Other trainings _____	d.	
e. Individual expert's consultancy _____	e.	
f. Study/exchange tours _____	f.	
g. Exhibition/Trade shows _____	g.	
h. Tools _____	h.	
i. Equipment _____	i.	
j. Materials _____	j.	
k. Seeds/planting materials _____	k.	
l. Other (please specify) _____	l.	
13) How would you rate the usefulness of the assistance provided by AgLinks project?	<b>13</b>	
a. Very useful _____	a.	
b. Useful _____	b.	
c. Not useful _____	c.	
d. Needs some improvement (please specify) _____		
14) What kind of additional assistance is required from AgLinks project for strengthening and ensuring sustainability of the <b>Agrifirm/WUA</b> ? (tick blank lines for all that apply and in right hand boxes rank all ticked from 1; with 1 as the highest)	<b>14</b>	
a. Production technology trainings _____	a.	
b. Postharvest technology trainings _____	b.	
c. Quality standards trainings _____	c.	
d. Other trainings _____	d.	
e. Individual expert's consultancy _____	e.	
f. Study/exchange tours _____	f.	
g. Exhibition/Trade shows _____	g.	
h. Tools _____	h.	
i. Equipment _____	i.	
j. Materials _____	j.	
k. Seeds/planting materials _____	k.	
l. Other (please specify) _____	l.	
15) How would you rate your current partnership and cooperation with Aglinks project?	<b>15</b>	
a. Excellent _____	a.	
b. Very good _____	b.	
c. Good _____	c.	
d. Fair _____	d.	
e. Needs some improvement (please specify) _____	e.	

16) What would you suggest for further improvement and strengthening partnership relations between <b>your Agrifirm/WUA and AgLinks project</b> ?	16
_____ _____	
17) Were new opportunities or new linkages established by the <b>Agrifirm/WUA</b> as a result of cooperation with AgLinks project? ( <i>Probe for commercial, research and training linkage s</i> )	17
a. Yes (please explain _____)	
b. No (please explain) _____	
18) Have <b>AF/WUA staff</b> been involved in any of following AgLinks activities?	18
a. Production technology trainings _____	a.
b. Postharvest technology trainings _____	b.
c. Quality standards trainings _____	c.
d. Other trainings _____	d.
e. Individual expert's consultancy _____	e.
f. Study/exchange tours _____	f.
g. Exhibition/Trade shows _____	g.
h. Tools _____	h.
i. Equipment _____	i.
j. Materials _____	j.
k. Seeds/planting materials _____	k.
l. Other (please specify) _____	l.
19) What new technologies or innovations did AgLinks introduce <b>to farmers</b> in your area?	19
a. Storage of agro-products _____	a.
b. Quality standards _____	b.
c. Trellising _____	c.
d. Pruning _____	d.
e. Grafting _____	e.
f. Disease and pest control _____	f.
g. Soil management _____	g.
h. Drip irrigation _____	h.
i. Other water saving technology _____	i.
j. New Varieties _____	j.
k. Other (please specify) _____	k.
20) Did farmers of your region adopt any of those technologies or innovations?	20
a. Yes _____	a.
b. No _____	b.
c. I do not know _____	c.

21) If yes, what kind of new technologies were adopted and how many farmers adopted them? <i>(Put the number of people adopting in the space after the technology adopted )</i>	<b>21</b>
a. Storage of agro-products _____	a. <input style="width: 40px;" type="text"/>
b. Quality standards _____	b. <input style="width: 40px;" type="text"/>
c. Trellising _____	c. <input style="width: 40px;" type="text"/>
d. Pruning _____	d. <input style="width: 40px;" type="text"/>
e. Grafting _____	e. <input style="width: 40px;" type="text"/>
f. Disease and pest control _____	f. <input style="width: 40px;" type="text"/>
g. Soil management _____	g. <input style="width: 40px;" type="text"/>
h. Drip irrigation _____	h. <input style="width: 40px;" type="text"/>
i. Other water saving technology _____	i. <input style="width: 40px;" type="text"/>
j. New Varieties _____	j. <input style="width: 40px;" type="text"/>
k. Other (please specify) _____	k. <input style="width: 40px;" type="text"/>

22) In your opinion, what are the <b>five</b> most important innovations introduced by AgLinks to farmers for improving productivity and income? <i>(Please rank by 1 to 5 with 1 as the highest)</i>	<b>22</b>
a. Storage of agro-products _____	a. <input style="width: 40px;" type="text"/>
b. Quality standards _____	b. <input style="width: 40px;" type="text"/>
c. Trellising _____	c. <input style="width: 40px;" type="text"/>
d. Pruning _____	d. <input style="width: 40px;" type="text"/>
e. Grafting _____	e. <input style="width: 40px;" type="text"/>
f. Disease and pest control _____	f. <input style="width: 40px;" type="text"/>
g. Soil management _____	g. <input style="width: 40px;" type="text"/>
h. Drip irrigation _____	h. <input style="width: 40px;" type="text"/>
i. Other water saving technology _____	i. <input style="width: 40px;" type="text"/>
j. New Varieties _____	j. <input style="width: 40px;" type="text"/>
k. Other (please specify) _____	k. <input style="width: 40px;" type="text"/>

23) How relevant and timely were these AgLinks project activities?	<b>23</b>
a. Relevant and timely _____	a. <input style="width: 40px;" type="text"/>
b. Relevant, but late _____	b. <input style="width: 40px;" type="text"/>
c. Not relevant _____	c. <input style="width: 40px;" type="text"/>
d. I do not know _____	d. <input style="width: 40px;" type="text"/>

**Ask Question 25 for AgriFirm Leaders only.**

25) Do your farmer-members sell their produce to outside agro-processor/s or traders?	<b>25</b>
a. Yes _____	a. <input style="width: 40px;" type="text"/>
b. No _____	b. <input style="width: 40px;" type="text"/>

25a. If yes, who are these buyers?	<b>25a</b>
a. _____	
b. _____	
c. _____	

**Ask questions 26 and 27 for both AgriFirm and WUA leaders.**

26) In your opinion, what are the **five** most important items for improving farmers productivity? *(Please rank by 1 to 5 with 1 as the highest)*

**26**

- a. Better knowledge and access to production technologies \_\_\_\_\_
- b. Better knowledge and access to postharvest handling technologies \_\_\_\_\_
- c. Better access to market information \_\_\_\_\_
- d. Better knowledge and access to drip irrigation \_\_\_\_\_
- e. Better knowledge about fertilizers \_\_\_\_\_
- f. Better access to seeds and planting material \_\_\_\_\_
- g. Better access to credit \_\_\_\_\_
- h. Better access to processors \_\_\_\_\_
- i. Better access to export markets \_\_\_\_\_
- j. Better access to new varieties \_\_\_\_\_
- k. Better irrigation \_\_\_\_\_
- l. Other (please specify) \_\_\_\_\_

a.	
b.	
c.	
d.	
e.	
f.	
g.	
h.	
i.	
j.	
k.	
l.	

27) How can the AgLinks Project be further improved?

**27**

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End time: \_\_\_\_\_

<b>Cold Storage Operators (CSO)</b>		pg 1	
Questionnaire No. <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></span>			
Region _____ District _____			
CSO Name _____ Date ____/____/____			
Interviewer's initials _____			
Name of Person Interviewed _____			
Position with Organization _____			
Start time: _____			
1) How did you find out about AgLinks project and its activities in your area? <i>(Tick all that apply)</i>		<b>1</b>	
a. Agrifirm/WUA _____	a. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
b. Local agro-processor _____	b. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
c. Other local cold storage operator _____	c. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
d. Local farmers _____	d. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
e. AgLinks project staff _____	e. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
f. Other (please specify) _____	f. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
2) Do you have own production of agro products? Yes ____/No ____		<b>2</b>	
3) If yes, what do you produce? Average yield per hectare in mt?		<b>3</b>	
a. Grapes: Table _____; raisin _____ processing _____.			
b. Stone fruits: cherry _____; apricot _____; peach _____; plum _____			
c. Pome fruits: apple _____; pear _____			
d. Other (please specify) _____			
4) What is the legal status of the CS? <i>(Tick only one box)</i>		<b>4</b>	
a. Registered farmer _____	a. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
b. Individual entrepreneur _____	b. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
c. Company with limited liabilities _____	c. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
d. Joint stock company _____	d. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
e. Other (please specify) _____	e. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
5) How many workers do you employ?		<b>5</b>	
a. Full time _____	a. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
b. Seasonal _____	b. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 15px;"></td></tr></table>		
6) What is the capacity of the cold storage facility in mt? In mt _____		<b>6</b>	

7) For the past 5 years what was the average annual total volume of products stored in your CS (in mt)? _____. Of this total, what percentage was:		<b>7</b>
a. Your own produce _____	a.	
b. Products purchased from local farmers and dehkans _____	b.	
c. Space rented to others producers/brokers _____	c.	
d. Others (please specify) _____	d.	
8) Do you do any fruit processing? Yes ____/No ____ (If yes, continue. If no, go to question 9)		<b>8</b>
8a) If yes, what was your average annual turnover of processed products for the past 5 years (in mt)? ____		<b>8a</b>
8b) Do you expect that your annual turnover for the next 5 years will increase or decrease? (Put percentage in the one appropriate box )		<b>8b</b>
a. Increase ____ by what percentage? _____	a.	
b. Decrease ____ by what percentage? _____	b.	
c. Stay the same _____	c.	
9) What other agro-products you would like to add to your cold storage in near future?		<b>9</b>
a. _____		
b. _____		
c. _____		
10) Who are your main agro products suppliers? (Please provide percentage to = 100)		<b>10</b>
a. Local AF or WUA farmers _____	a.	
b. Other commercial farmers ____	b.	
c. Local households _____	c.	
d. Others (please specify) _____	d.	
		100
11) Do you provide any other services besides the cold-storage/processing? (Tick all that apply)		<b>11</b>
a. Irrigation _____	a.	
b. Storage _____	b.	
c. Processing _____	c.	
d. Seeds and planting materials	d.	
e. Chemical fertilizers _____	e.	
f. Chemical pesticides _____	f.	
g. Introduction of new technologies _____	g.	
h. Financial planning and accounting _____	h.	
i. Trade credits _____	i.	
j. Technical training/consulting services _____	j.	
k. Plant protection services _____	k.	
l. Pruning _____	l.	
m. Grafting _____	m.	
n. New varieties _____	n.	
o. Other (please specify) _____	o.	

12) What percentage of the products do you sell at domestic and export markets? **12**

(code domestic bazaar in 1st column; export in 2nd column; total should = 100)

	dom	exp
a. Grape (table): domestic bazaars _____; export markets _____		
b. Grape (raisin): domestic bazaars _____; export markets _____		
c. Grape (processing): domestic bazaars _____ export markets _____		
d. Cherry: domestic bazaars _____; export markets _____		
e. Apricot: domestic bazaars _____; export markets _____		
f. Plum: domestic bazaars _____; export markets _____		
g. Peach: domestic bazaars _____; export markets _____		
h. Apple: domestic bazaars _____; export markets _____		
i. Pear: domestic bazaars _____; export markets _____		
j. Pomegranate: domestic bazaars _____; export markets _____		
k. Other (please specify) _____ export markets _____		

13) What kind of assistance did you receive as a result of cooperation with AgLinks project? **13**

(Tick all that apply)

a. Production technology trainings _____	a.	
b. Postharvest technology trainings _____	b.	
c. Quality standards trainings _____	c.	
d. Other trainings _____	d.	
e. Individual expert's consultancy _____	e.	
f. Study/exchange tours _____	f.	
g. Exhibition/Trade shows _____	g.	
h. Tools _____	h.	
i. Equipment _____	i.	
j. Materials _____	j.	
k. Seeds/planting materials _____	k.	
l. New varieties	l.	
m. Other (please specify) _____	m.	

14) How would you rate the usefulness of the provided assistance by AgLinks project? **14**

a. Very useful _____	a.	
b. Useful _____	b.	
c. Not useful _____	c.	
d. Needs some improvement (please specify) _____	d.	

15) Has your revenue increased as a result of cooperation with AgLinks project? **15**

a. Yes _____	a.	
b. No _____	b.	
c. I do not know _____	c.	

16) If the revenue has increased, what is the percentage of this increase? \_\_\_\_\_ [ ]

<p>17) What kind of additional assistance is required from AgLinks project for strengthening and ensuring sustainability of the CS? <i>(Tick blank lines for all that apply and in right hand boxes rank all ticked from 1 with 1 as the highest)</i></p>		<b>17</b>																										
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<p>20) Were new opportunities or linkages established by the CS as a result of cooperation with AgLinks project?</p>		<b>20</b>																										
<p>a. Yes (please explain _____)</p> <p>b. No (please explain) _____</p>																												
<b>Ask question 21 only if CS operator hires employees.</b>																												
<p>21) Have CS staff been involved in any of following AgLinks activities?</p>		<b>21</b>																										
<p>a. Production technology trainings _____</p> <p>b. Postharvest technology trainings _____</p> <p>c. Quality standards trainings _____</p> <p>d. Other trainings _____</p> <p>e. Individual expert's consultancy _____</p> <p>f. Study/exchange tours _____</p> <p>g. Exhibition/Trade shows _____</p> <p>h. Tools _____</p> <p>i. Equipment _____</p> <p>j. Materials _____</p> <p>k. Seeds/planting materials _____</p> <p>l. New varieties _____</p> <p>m. Other (please specify) _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 40px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> <tr><td>m.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		m.		
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<p>23) Did farmers of your region adopt any of those technologies or innovations?</p> <ul style="list-style-type: none"> <li>a. Yes _____</li> <li>b. No _____</li> <li>c. I do not know _____</li> </ul>	<b>23</b>																							
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<p>24) If yes, what kind of new technologies and how many farmers adopted those innovations? <i>(Tick blank lines and put number in space after each technology adopted)</i></p> <ul style="list-style-type: none"> <li>a. Storage of agro-products _____</li> <li>b. Quality standards _____</li> <li>c. Trellising _____</li> <li>d. Pruning _____</li> <li>e. Grafting _____</li> <li>f. Disease and pest control _____</li> <li>g. Soil management _____</li> <li>h. Drip irrigation _____</li> <li>i. Other water saving technology _____</li> <li>j. New varieties _____</li> <li>k. Other (please specify) _____</li> </ul>	<b>24</b>																							
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<p>25) In your opinion, what are the <b>five</b> most important innovations introduced by AgLinks to farmers for improving productivity? <i>(Please rank by 1 to 5 with 1 as the</i></p> <ul style="list-style-type: none"> <li>a. Storage of agro-products _____</li> <li>b. Quality standards _____</li> <li>c. Trellising _____</li> <li>d. Pruning _____</li> <li>e. Grafting _____</li> <li>f. Disease and pest control _____</li> <li>g. Soil management _____</li> <li>h. Drip irrigation _____</li> <li>i. Other water saving technology _____</li> <li>j. New varieties _____</li> <li>k. Other (please specify) _____</li> </ul>	<b>25</b>																							
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<p>26) In your opinion, what are the <b>five</b> most important items for improving farmers productivity? <i>(Please rank by 1 to 5 with 1 as the highest)</i></p> <ul style="list-style-type: none"> <li>a. Better knowledge and access to production technologies _____</li> <li>b. Better knowledge and access to postharvest handling technologies _____</li> <li>c. Better access to market information _____</li> <li>d. Better knowledge and access to drip irrigation _____</li> <li>e. Better knowledge about fertilizers _____</li> <li>f. Better access to seeds and planting material _____</li> <li>g. Better access to credit _____</li> <li>h. Better access to processors _____</li> <li>i. Better access to export markets _____</li> <li>j. New varieties _____</li> <li>k. Better irrigaton _____</li> <li>k. Other (please specify) _____</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px;">a.</td><td style="width: 50px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		26
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<p>27) How can the AgLinks Project be further improved?</p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/>		27																								

End time \_\_\_\_\_

July 8, 2013

**FOCUS GROUP FARMER / DEMO PLOT FARMER QUESTIONS**

**Region** \_\_\_\_\_

**District** \_\_\_\_\_

**AF/WUA Name** \_\_\_\_\_

**Date** \_\_/\_\_/\_\_

**Interviewer Initials** \_\_\_\_\_

**Questionnaire No.** \_\_\_\_\_

**List of participants:**

<b>Name</b>
<b>1.</b>
<b>2.</b>
<b>3.</b>
<b>4.</b>
<b>5.</b>
<b>6.</b>
<b>7.</b>
<b>8.</b>
<b>9.</b>
<b>10.</b>
<b>11.</b>
<b>12.</b>

**Start Time** \_\_\_\_\_

<p>1) Are you: <span style="float: right;"><i>(Put number of people in each category in right hand box)</i></span></p> <p>a. Registered farmer _____</p> <p>b. Member farmer _____</p> <p>b. Dehkan/household _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> </table>	a.		b.		c.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px; text-align: center;"><b>1</b></td></tr> </table>	<b>1</b>																																																						
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<p>2) What do you produce? Average yield per hectare in mt? <span style="float: right;"><i>(For FG tick only crop being produced)</i></span></p> <p>a. Grapes: Table _____; raisin _____ processing _____.</p> <p>b. Stone fruits: cherry _____; apricot _____; peach _____; plum _____</p> <p>c. Pome fruits: apple _____; pear _____</p> <p>d. Other (please specify) _____</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px; text-align: center;"><b>2</b></td></tr> </table>	<b>2</b>																																																												
<b>2</b>																																																															
<p>3) How do you sell your produce <span style="float: right;"><i>(demo farmer indicate average percentage; for FG tick markets used)?</i></span></p> <p>a. Tashkent bazaar _____ <span style="float: right;"><i>(Demo farm sum should = 100)</i></span></p> <p>b. Other domestic bazaars _____</p> <p>c. Export markets _____</p> <p>d. Cold storage operators _____</p> <p>e. Processors _____</p> <p>f. Agrifirm/WUA _____</p> <p>g. Other _____</p> <p style="text-align: right; margin-right: 50px;">Total</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>=</td><td>100</td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		=	100	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px; text-align: center;"><b>3</b></td></tr> </table>	<b>3</b>																																												
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<p>4) If you sell products at export markets, how do you access those markets?</p> <p>a. Have a direct access to export markets _____</p> <p>b. Through intermediaries _____ <span style="float: right;"><i>(Explore options and make notes on right side)</i></span></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> </table>	a.		b.		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px; text-align: center;"><b>4</b></td></tr> </table>	<b>4</b>																																																								
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<p>5) What products do you sell at domestic and export markets or to processors or cold storages?  <span style="float: right;"><i>(FG tick those that apply; Demo plot farms put % in right hand boxes to equal 100)</i></span></p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px; text-align: center;"><b>5</b></td></tr> </table>	<b>5</b>																																																												
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<p>a. Grape (table): dom. bazaar _____; export market _____; AF _____; CS _____</p> <p>b. Grape (raisin): dom. bazaar _____; export market _____; AF _____; CS _____</p> <p>c. Grape (process): dom. bazaar _____; export market _____; AF _____; CS _____</p> <p>d. Cherry: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>e. Apricot: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>f. Plum: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>g. Peach: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>h. Apple: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>i. Pear: domestic bazaar _____; export market _____; AF _____; CS _____</p> <p>j. Pomegranate: dom. bazaar _____; export market _____; AF _____; CS _____</p> <p>k. Other _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20px;"></th> <th style="width: 15%;">dom</th> <th style="width: 15%;">exp</th> <th style="width: 15%;">pro</th> <th style="width: 15%;">CS</th> </tr> </thead> <tbody> <tr><td>a.</td><td></td><td></td><td></td><td></td></tr> <tr><td>b.</td><td></td><td></td><td></td><td></td></tr> <tr><td>c.</td><td></td><td></td><td></td><td></td></tr> <tr><td>d.</td><td></td><td></td><td></td><td></td></tr> <tr><td>e.</td><td></td><td></td><td></td><td></td></tr> <tr><td>f.</td><td></td><td></td><td></td><td></td></tr> <tr><td>g.</td><td></td><td></td><td></td><td></td></tr> <tr><td>h.</td><td></td><td></td><td></td><td></td></tr> <tr><td>i.</td><td></td><td></td><td></td><td></td></tr> <tr><td>j.</td><td></td><td></td><td></td><td></td></tr> <tr><td>k.</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		dom	exp	pro	CS	a.					b.					c.					d.					e.					f.					g.					h.					i.					j.					k.						
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<p><b>6) What commercial services are offered by AF/WUA to members? (tick all that apply)</b>  <i>For AF farmers informally determine if person can be member of both AF and WUA)</i></p>	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">a.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">b.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">c.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">d.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">e.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">f.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">g.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">h.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">i.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">j.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">k.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">l.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">m.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">n.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">o.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">p.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">q.</td><td style="width: 20px; height: 15px;"></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		m.		n.		o.		p.		q.		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center; font-weight: bold;">6</td></tr> </table>	6
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<p>a. Irrigation _____</p> <p>b. Storage _____</p> <p>c. Processing _____</p> <p>d. Seeds and planting materials _____</p> <p>e. Chemical fertilizers _____</p> <p>f. Chemical pesticides _____</p> <p>g. Marketing and access to domestic bazaars _____</p> <p>h. Export of agro products _____</p> <p>i. Introduction of new technologies _____</p> <p>j. Business planning and accounting _____</p> <p>k. Trade credits _____</p> <p>l. Technical training/consulting services _____</p> <p>m. Plant protection services _____</p> <p>n. Pruning _____</p> <p>o. Grafting _____</p> <p>p. Tractor/machinery service _____</p> <p>q. Other (please specify) _____</p>																																					
<p><b>7) How IMPORTANT to you are the services used, which were provided by AF/WUA?</b></p>	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">a.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">b.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">c.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">d.</td><td style="width: 20px; height: 15px;"></td></tr> </table>	a.		b.		c.		d.		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center; font-weight: bold;">7</td></tr> </table>	7																										
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<p>a. Very important _____</p> <p>b. Important _____</p> <p>c. Neutral _____</p> <p>d. Not important _____</p>																																					
<p><b>8) How did you find out about AgLinks project and its activities in your area? (tick all that apply)</b></p>	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">a.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">b.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">c.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">d.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">e.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">f.</td><td style="width: 20px; height: 15px;"></td></tr> </table>	a.		b.		c.		d.		e.		f.		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center; font-weight: bold;">8</td></tr> </table>	8																						
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<p>a. Agrifirm/WUA _____</p> <p>b. Local agro-processor _____</p> <p>c. Local cold storage operator _____</p> <p>d. Local farmers _____</p> <p>e. AgLinks project staff _____</p> <p>f. Other (please specify) _____</p>																																					
<p><b>9) What new technologies or innovations did AgLinks introduce to farmers in your area?</b></p>	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">a.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">b.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">c.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">d.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">e.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">f.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">g.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">h.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">i.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">j.</td><td style="width: 20px; height: 15px;"></td></tr> <tr><td style="text-align: center;">k.</td><td style="width: 20px; height: 15px;"></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="text-align: center; font-weight: bold;">9</td></tr> </table>	9												
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14) How relevant and timely were these AgLinks project activities? a. Relevant and timely _____ b. Relevant, but late _____ c. Not relevant _____ d. I do not know _____	<table border="1" style="margin: auto;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> </table>	a.		b.		c.		d.		<b>14</b>
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15) Did you benefit directly from AgLinks project activities? (provide % below for FG respondents) Yes ____/ No ____. If yes, please specify _____ _____ _____	<table border="1" style="margin: auto;"> <tr><td style="width: 20px;"></td><td style="width: 20px;"></td></tr> </table>			<b>15</b>						
16) To what extent has production output increased as a result of AgLinks project intervention? (provide % for each crop) a. Grapes: table _____; raisin _____; processing _____. b. Stone fruits: cherry _____; apricot _____; peach _____; plum _____. c. Pome fruits: apple _____; pear _____. d. Other (please specify) _____		<b>16</b>								
17) Has your revenue has increased as a result of AgLinks project intervention? a. Yes _____ b. No _____ c. I do not know _____	<table border="1" style="margin: auto;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> </table>	a.		b.		c.		<b>17</b>		
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**Question 18 is for Demonstration plot farmers only**

18) Did you have any financial or other challenges while establishing a demonstration plot and/or conducting trials ( <b>FOR DEMO PLOT MANAGERS ONLY</b> )? a. Yes _____ b. No _____	<table border="1" style="margin: auto;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> </table>	a.		b.		<b>18</b>
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b.						
18a a) What were the challenges you faced and how did you resolve them? a. Lack of finance: Resolved myself _____; obtained help from AgLinks _____; other _____ b. Lack of knowledge/information: Resolved myself _____; obtained help from AgLinks _____; other _____ c. Lack of agro inputs: Resolved myself _____; obtained help from AgLinks _____; other _____ d. Lack of market opportunities: Resolved myself _____; obtained help from AgLinks _____; other _____ e. Lack of tools/equipment: Resolved myself _____; obtained help from AgLinks _____; other _____ f. Lack of machinery: Resolved myself _____; obtained help from AgLinks _____; other _____ g. Other _____: Resolved myself _____; obtained help from AgLinks _____; other _____		<b>18a</b>				

<p>19) What kind of additional assistance is required from AgLinks project for strengthening and ensuring sustainability of your farm?</p> <p>a. Production technology trainings _____</p> <p>b. Postharvest technology trainings _____</p> <p>c. Quality standards trainings _____</p> <p>d. Other trainings _____</p> <p>e. Individual expert's consultancy _____</p> <p>f. Study/exchange tours _____</p> <p>g. Exhibition/Trade shows _____</p> <p>h. Tools _____</p> <p>i. Equipment _____</p> <p>j. Materials _____</p> <p>k. Seeds/planting materials _____</p> <p>l. New varieties _____</p> <p>m. Other (please specify) _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> <tr><td>m.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		m.		<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">19</div>
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<p>20) Were new opportunities or linkages established by you as a result of cooperation with AgLinks project?</p> <p>a. Yes (please explain _____)</p> <p>b. No (please explain) _____</p>		<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">20</div>																										
<p>21) Do you have access to financial sources if you need to expand your business? Yes ___ No ___. If Yes, what are they?</p> <p>a. Savings _____</p> <p>b. Borrow from family/neighbours _____</p> <p>c. Informal lenders _____</p> <p>d. Bank/financial institutions _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> </table>	a.		b.		c.		d.		<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">21</div>																		
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<p>22) In your opinion, what are the <b>five</b> most important items for improving farmers productivity? <i>(Please rank by 1 to 5 with 1 as the highest)</i></p> <p>a. Better knowledge and access to production technologies _____</p> <p>b. Better knowledge and access to postharvest handling technologies _____</p> <p>c. Better access to market information _____</p> <p>d. Better knowledge and access to drip irrigation _____</p> <p>e. Better knowledge about fertilizers _____</p> <p>f. Better access to seeds and planting material _____</p> <p>g. Better access to credit _____</p> <p>h. Better access to processors _____</p> <p>i. Better access to export markets _____</p> <p>j. Better access to new varieties _____</p> <p>k. Better irrigation _____</p> <p>l. Other (please specify) _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 20px;">a.</td><td style="width: 20px;"></td></tr> <tr><td>b.</td><td></td></tr> <tr><td>c.</td><td></td></tr> <tr><td>d.</td><td></td></tr> <tr><td>e.</td><td></td></tr> <tr><td>f.</td><td></td></tr> <tr><td>g.</td><td></td></tr> <tr><td>h.</td><td></td></tr> <tr><td>i.</td><td></td></tr> <tr><td>j.</td><td></td></tr> <tr><td>k.</td><td></td></tr> <tr><td>l.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		j.		k.		l.		<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">22</div>		
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<p>23) How can the AgLinks Project be further improved?</p> <p>_____</p> <p>_____</p> <p>_____</p>		<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">23</div>																										

End Time: \_\_\_\_\_

July 8, 2013, 2013

### WOMEN FOCUS GROUP QUESTIONS

Region \_\_\_\_\_ District \_\_\_\_\_

AF/WUA Name \_\_\_\_\_ Date \_\_/\_\_/\_\_

Interviewer Initials \_\_\_\_\_ Questionnaire No. \_\_\_\_\_

#### List of participants:

Name
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

Start Time \_\_\_\_\_

1) Are you: a. Registered farmer _____ Member farmer _____ b. Dehkan/household _____ c. Other _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px; text-align: center;">a.</td><td style="width: 10px;"></td></tr> <tr><td style="text-align: center;">b.</td><td></td></tr> <tr><td style="text-align: center;">c.</td><td></td></tr> </table>	a.		b.		c.		<b>1</b>												
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b.																				
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2) How did you find out about the AgLinks project and its activities in your area? <i>(tick all that apply)</i> a. Agrifirm/WUA _____ b. Local agro-processor _____ c. Local cold storage operator _____ d. Local women/farmers _____ e. AgLinks staff _____ f. Other (please specify) _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px; text-align: center;">a.</td><td style="width: 10px;"></td></tr> <tr><td style="text-align: center;">b.</td><td></td></tr> <tr><td style="text-align: center;">c.</td><td></td></tr> <tr><td style="text-align: center;">d.</td><td></td></tr> <tr><td style="text-align: center;">e.</td><td></td></tr> <tr><td style="text-align: center;">f.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		<b>2</b>						
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f.																				
3). What type of AgLinks training or other activity has been provided to you? <i>(tick all that apply)</i> a. Home food processing _____ b. Food quality standards _____ c. Trellising _____ d. Pruning _____ e. Grafting _____ f. Strategic planning _____ g. Study Tours _____ h. Variety contests _____ i. Other (please specify) _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px; text-align: center;">a.</td><td style="width: 10px;"></td></tr> <tr><td style="text-align: center;">b.</td><td></td></tr> <tr><td style="text-align: center;">c.</td><td></td></tr> <tr><td style="text-align: center;">d.</td><td></td></tr> <tr><td style="text-align: center;">e.</td><td></td></tr> <tr><td style="text-align: center;">f.</td><td></td></tr> <tr><td style="text-align: center;">g.</td><td></td></tr> <tr><td style="text-align: center;">h.</td><td></td></tr> <tr><td style="text-align: center;">i.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		f.		g.		h.		i.		<b>3a.</b>
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4) How useful was this training? a. Very useful _____ b. Useful _____ c. Somewhat useful _____ d. Needs to be improved _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px; text-align: center;">a.</td><td style="width: 10px;"></td></tr> <tr><td style="text-align: center;">b.</td><td></td></tr> <tr><td style="text-align: center;">c.</td><td></td></tr> <tr><td style="text-align: center;">d.</td><td></td></tr> </table>	a.		b.		c.		d.		<b>4</b>										
a.																				
b.																				
c.																				
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5) What type of processed food products do you produce? a. salads _____ b. compotes _____ c. jellies _____ d. dried fruits and vegetables _____ e. other (please specify) _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10px; text-align: center;">a.</td><td style="width: 10px;"></td></tr> <tr><td style="text-align: center;">b.</td><td></td></tr> <tr><td style="text-align: center;">c.</td><td></td></tr> <tr><td style="text-align: center;">d.</td><td></td></tr> <tr><td style="text-align: center;">e.</td><td></td></tr> </table>	a.		b.		c.		d.		e.		<b>5</b>								
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6) Do you sell any of your processed foods? Yes/No (If yes, go to question 7a. If no go to question 10)		<b>6</b>															
	<input style="width: 50px; height: 20px;" type="text"/>																
6a.) If yes, which products do you sell? a. salads _____ b. compotes _____ c. jellies _____ d. dried fruits and vegetables _____ e. other (please specify) _____		<b>6a.</b>															
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7) To whom do you sell your products? (tick each box that applies) a. neighbors _____ b. traders _____ c. directly at a local bazaar _____ d. other (please specify) _____		<b>7</b>															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">a.</td><td style="width: 50%;"></td><td style="width: 40%;"></td></tr> <tr><td>b.</td><td></td><td></td></tr> <tr><td>c.</td><td></td><td></td></tr> <tr><td>d.</td><td></td><td></td></tr> </table> <p style="margin-left: 20px;">= 100%</p>	a.			b.			c.			d.						
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8) Are you interested in selling more of the foods that you process at home? Yes/No (If yes, continue to question 8a. and 8b.)		<b>8</b>															
	<input style="width: 50px; height: 20px;" type="text"/>																
8a.) If yes, how do you expect to get the needed raw fruits and vegetables? a. Grow them myself _____ b. Buy them from others _____ c. Other (please specify) _____		<b>8a</b>															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">a.</td><td style="width: 50%;"></td><td style="width: 40%;"></td></tr> <tr><td>b.</td><td></td><td></td></tr> <tr><td>c.</td><td></td><td></td></tr> </table>	a.			b.			c.									
a.																	
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8b.) Will you need access to financial services if you expand your business? Yes/No (If yes, continue to question 8c. If no go to question 9)		<b>8b</b>															
	<input style="width: 50px; height: 20px;" type="text"/>																
8c.) What financial sources are available to you? a. Savings _____ b. Borrow from family or neighbors _____ c. Borrow from informal lenders _____ d. Borrow from bank or other financial institution? _____		<b>8c</b>															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">a.</td><td style="width: 50%;"></td><td style="width: 40%;"></td></tr> <tr><td>b.</td><td></td><td></td></tr> <tr><td>c.</td><td></td><td></td></tr> <tr><td>d.</td><td></td><td></td></tr> </table>	a.			b.			c.			d.						
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<p>9) What kind of additional AgLinks training or other assistance can help you meet your goals?  <i>(Tick blank lines for all that apply and in right hand boxes rank all ticked from 1 with 1 as the highest)</i></p>	<b>9</b>																																																
<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 70%;">a. Home foods processing _____</td><td style="width: 10%; text-align: center;">a.</td><td style="width: 20%;"></td></tr> <tr><td>b. Better understanding of food quality _____</td><td style="text-align: center;">b.</td><td></td></tr> <tr><td>c. Trellising _____</td><td style="text-align: center;">c.</td><td></td></tr> <tr><td>d. Pruning _____</td><td style="text-align: center;">d.</td><td></td></tr> <tr><td>e. Fruit tree grafting _____</td><td style="text-align: center;">e.</td><td></td></tr> <tr><td>f. Study/exchange tours _____</td><td style="text-align: center;">f.</td><td></td></tr> <tr><td>g. Strategic planning _____</td><td style="text-align: center;">g.</td><td></td></tr> <tr><td>h. Drip irrigation _____</td><td style="text-align: center;">h.</td><td></td></tr> <tr><td>i. Cold storage construction and use _____</td><td style="text-align: center;">i.</td><td></td></tr> <tr><td>j. Exhibitions _____</td><td style="text-align: center;">j.</td><td></td></tr> <tr><td>k. Variety contests _____</td><td style="text-align: center;">k.</td><td></td></tr> <tr><td>l. Hand tools _____</td><td style="text-align: center;">l.</td><td></td></tr> <tr><td>m. Equipment _____</td><td style="text-align: center;">m.</td><td></td></tr> <tr><td>n. Seeds/planting materials _____</td><td style="text-align: center;">n.</td><td></td></tr> <tr><td>o. New varieties _____</td><td style="text-align: center;">o.</td><td></td></tr> <tr><td>p. Other (please specify) _____</td><td style="text-align: center;">p.</td><td></td></tr> </table>	a. Home foods processing _____	a.		b. Better understanding of food quality _____	b.		c. Trellising _____	c.		d. Pruning _____	d.		e. Fruit tree grafting _____	e.		f. Study/exchange tours _____	f.		g. Strategic planning _____	g.		h. Drip irrigation _____	h.		i. Cold storage construction and use _____	i.		j. Exhibitions _____	j.		k. Variety contests _____	k.		l. Hand tools _____	l.		m. Equipment _____	m.		n. Seeds/planting materials _____	n.		o. New varieties _____	o.		p. Other (please specify) _____	p.		
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<p>10) In your opinion, what are the <b>five</b> most important items for <b>improving farmer productivity in your area?</b> <i>(rank from 1 to 5 with 1 as the highest)</i></p>	<b>10</b>																																																
<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 70%;">a. Better knowledge and access to production technologies _____</td><td style="width: 10%; text-align: center;">a.</td><td style="width: 20%;"></td></tr> <tr><td>b. Better knowledge and access to postharvest handling technologies _____</td><td style="text-align: center;">b.</td><td></td></tr> <tr><td>c. Better access to market information _____</td><td style="text-align: center;">c.</td><td></td></tr> <tr><td>d. Better knowledge and access to drip irrigation _____</td><td style="text-align: center;">d.</td><td></td></tr> <tr><td>e. Better knowledge about fertilizers _____</td><td style="text-align: center;">e.</td><td></td></tr> <tr><td>f. Better access to seeds and planting material _____</td><td style="text-align: center;">f.</td><td></td></tr> <tr><td>g. Better access to credit _____</td><td style="text-align: center;">g.</td><td></td></tr> <tr><td>h. Better access to processors _____</td><td style="text-align: center;">h.</td><td></td></tr> <tr><td>i. Better access to export markets _____</td><td style="text-align: center;">i.</td><td></td></tr> <tr><td>j. Better access to new varieties _____</td><td style="text-align: center;">j.</td><td></td></tr> <tr><td>k. Better irrigation _____</td><td style="text-align: center;">k.</td><td></td></tr> <tr><td>l. Other _____</td><td style="text-align: center;">l.</td><td></td></tr> </table>	a. Better knowledge and access to production technologies _____	a.		b. Better knowledge and access to postharvest handling technologies _____	b.		c. Better access to market information _____	c.		d. Better knowledge and access to drip irrigation _____	d.		e. Better knowledge about fertilizers _____	e.		f. Better access to seeds and planting material _____	f.		g. Better access to credit _____	g.		h. Better access to processors _____	h.		i. Better access to export markets _____	i.		j. Better access to new varieties _____	j.		k. Better irrigation _____	k.		l. Other _____	l.														
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<p>11) How can the AgLinks Project be further improved?</p> <p>_____</p> <p>_____</p> <p>_____</p>	<b>11</b>																																																

End time \_\_\_\_\_

## **ANNEX F: FARM RESTRUCTURING AND DEVELOPMENT: 1998 -2013**

Uzbekistan's agricultural reform started in 1989, two years before Independence, with Gorbachev's Soviet Union reform legislation supporting the transfer of state (*sovkhos*) and collective (*kolkhoz*) farms to private households. Lerman reports that:

The 1989 legislation proceeded in the dual track of giving more land to households and encouraging restructuring of large-scale farms for better efficiency. Over less than two years, the total area in the household sector increased by 60% from 250 thousand hectares to 400 thousand hectares as the maximum plot size on irrigated land was raised to 0.25 hectares from pre-1990 norms of 0.16 hectares in collective farms and 0.08 hectares in state farms. This initial phase of the reform process also spelled out the first principles of farm restructuring through creation of autonomously operating subdivisions and intra-farm family leaseholds in large-scale collective and state farms, which were now allowed to lease land to families of workers and groups of families (Land Law, 1990).<sup>15</sup>

### **Legal Farm Restructuring and Land Reform Processes**

Four phases represented the Uzbek farm restructuring process. The first phase (1992–1997) was based on the Law of Destatization and Privatization adopted in November 1991. It included transformation of state farms into collective entities, expansion of the *dekhan* (household) farm size and introduction of sub-leasing of collective land by worker families to create an initial group of private farmers.<sup>16</sup> The small number of remaining state farms were engaged in the production of public goods, such as agricultural education, research and development, livestock, and crop selection. There was no change in the legal collective farm structure but transformation of state farms into collective farms removed them from the state budget making them self-sufficient farming entities. Most crops remained subject to single channel state procurement regulations and private farmers sold their crops through the collective farm from which land had been leased. Exclusive state ownership of agricultural land was incorporated into the Uzbek Constitution of December 1992, without any rights of transfer with the exception of “intrafarm leasing” as described above, for periods up to 30 years.

The second farm restructuring phase (1998 – 2002), initiated with the 1998 Law on Agricultural Cooperatives, led to restructuring of collective farms into new agricultural cooperatives (*shirkats*). The law required all collective farms (*kolkhoz*) to be legally transformed into the cooperative (*shirkat*) legal structure and it expanded the concept of intrafarm leasing by private farm families. State procurement crop purchases were limited to cotton and wheat. As the collective farms were broken up and restructured separate Water User Associations and Tractor Parks, formerly organized within the collective structure, were formed to provide irrigation water and tractor services to the expanding number of private farmers. During this phase, agriculture in Uzbekistan took on a dual nature as each private farmer who leased land from the cooperative also held *dekhan* land that was designed to support family crop self-sufficiency.

The *dekhan* farm was never a part of the commercial farm restructuring process and their land share size increased along with population growth to support farm family food security policy objectives. This period also saw the beginning of farm crop specialization, with private farmers holding 10 hectares or more concentrating primarily on cotton and wheat, while those with less than one hectare concentrated mostly on horticultural production, including orchard crops, vegetables, and grapes. However, as state procurement regulations were removed these farmers were also allowed

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<sup>15</sup> Lerman Zvi, Agricultural Development in Uzbekistan: The Effect of Ongoing Reforms, Discussion Paper No. 7.08, Hebrew University of Jerusalem, pg 3.

<sup>16</sup> This discussion draws heavily from Djanibekov Nodir, et al, Farm Restructuring and Land Consolidation in Uzbekistan: New farms with Old Barriers, in *Europe-Asia Studies*, vol 64 No.6 August 2012 pp. 1101-1126.

to produce fodder and wheat, and crops such as melons that could be sold directly from the farm on a cash basis. The maximum land lease length was extended from 30 to 49 years.

The third stage of farm reform, (2003 – 2008) was initiated by Presidential Decree No. 3342 of October 2003, “On the Conception of Farms’ Development for 2004 – 2006”, and led to additional legislation and regulations governing the complete restructuring of the cooperative farm. This phase marked the complete breakup of the cooperative production organizational form while institutionalizing the private farm as the primary agricultural production unit. Moreover, Presidential Decree No. 3709 of March 2006 “On Measures to Deepen Economic Reforms in Horticulture and Viticulture” set out the basis for transforming non-performing horticultural cooperatives into “Agroindustrial” companies (AgriFirms) whose main activity is the processing and marketing of horticultural products produced by farms and communities. Founding members included private farmers who had evolved from the cooperative (*shirkat*) restructuring who grew vegetables, orchard and vineyard crops. Cooperative owned processing plants and Tractor Parks could also become founding members.

The policy to allow registered farmers to lease (but not own) agricultural land continued and remains the only available form of agricultural land tenure. It was adopted to prevent land speculation by absentee landowners and to prevent foreign ownership of agricultural lands.

The fourth restructuring phase (2008 – 2010) consolidated the large number of private registered farms emerging from the third phase restructuring process into fewer and more “optimum” sized farms”. Throughout the 15-year period of restructuring state farms into collective farms and cooperative farms into AgriFirms, private registered farms formed of individuals and family groups gained their land lease holding status by preparing business plans for review by District Agricultural officials. The impact of the cooperative restructuring process resulted in the more efficient private farmers realizing significant yield increases over those realized by the cooperatives (two to three times the cooperative average according to a Samarkand district agricultural officer interviewed by the Evaluation Team). At the same time, some farmers were less competitive than others. During the optimization process, District agricultural officers sought to gain further productivity increases by expanding land leases of the more productive farmers while registered farmers who lost this status would generally develop share lease arrangements with the now larger registered farmer.

### **AgriFirm and Farmer Business Relationships**

The Evaluation Team discussions with AgriFirm leaders and private farmers and with District agricultural officials confirmed the above land and farm restructuring processes and provided some additional explanatory details. AgriFirms, as the successor organization to the cooperative farms are organized as either limited liability companies or closed joint stock companies. They do not engage in agricultural production but serve as the marketing arm for the private farmers emerging from the 2003 restructuring reforms. They also organize training and technology transfer support to members and some provide production inputs and/or tractor and machinery services. AgriFirm lineage can be traced directly back to the original collective or state farm, as founding members include the registered farmers who were members of the originating *shirkat* and most of these private farmers were usually members of the state or collective farm from which the *shirkat* was formed. Although the AgriFirm is organized to provide marketing and other services to its members, they are not required to sell all, or even any, of their product to the AgriFirm in which they are a member. As result, AgriFirms must compete with other private traders and processors in a competitive market environment.

AgriFirm membership can take two forms. First, some AgriFirms provide services only to private farmers who are members of the legal organization. Second, some AgriFirms include as members all private farmers with whom they sign a marketing contract. However, only private farmers who are

legal members of the AgriFirm share in any end of year profit distributions and can vote on internal management issues.

While some AgriFirms provide production inputs such as chemical fertilizers, pesticides and seeds most do not and farmers rely on private sector companies for these inputs. In some cases the AgriFirm, which has inherited the physical premises of the original collective or state farm, leases space to such an input supplier. In all cases however, the AgriFirm provides product marketing services to their members, by serving as a broker between the private farmer and the processor. Typically a contract is signed by all parties at the start of the season specifying the amount of product to be sold and the estimated price. Both the quantity and the price can be renegotiated shortly before the start of the harvest season to accommodate seasonally induced quantity or price changes. In some cases, AgriFirms may sell fresh products to local markets, but this is not a common occurrence. However, the Evaluation Team did not find any AgriFirm that engaged directly in fresh fruit export marketing.<sup>17</sup>

In most cases, the processor with whom the AgriFirm works is not a legal member of the AgriFirm but in other cases the processor may be a legal member. In all cases discussed, either the AgriFirm or the processor provided trade credits – up to 60% of estimated production costs – to the contract producer. It appeared that no interest was charged on this credit, which was deducted after the crop was sold. No doubt, the cost of this credit was taken into consideration when negotiating the farmer's price.

Discussions with AgriFirms indicated that in all cases the number of legal organization members had declined significantly since the original founding of the AgriFirm during the 2003 – 2006 period<sup>18</sup>. This is explained by private farmers either withdrawing from farming or alternatively, becoming member farmers. In some cases, new farmers with whom the AgriFirm did business would become organizational members but this was quite rare. Consequently, the initial AgriFirm organization operated within an informal cooperative type framework in serving only its legal members, but the surviving AgriFirms are becoming more like standard limited liability or joint stock companies competing in an open market environment with individual traders and other buyers.

The farmer focus group discussions indicated that most farmers sell their products to a combination of buyers, including AgriFirms, local bazaars, processors, and private sector traders. Private traders who either sold in Tashkent or exported, mostly to Russia, were often the preferred sales outlet. To meet export market standards these traders would arrive in a community about 10 days prior to harvest and meet with a group of farmers to discuss marketing details in a negotiation setting. Most farmers indicated that they based their price expectations on the local market, but since quality and packaging standards were higher on the export market than on local markets, they expected a price above that available in local bazaars. With prices negotiated, traders took responsibility for making all harvest arrangements, field packing and transportation. Typically, the field packed product was immediately put into refrigerated trucks for shipment to the Tashkent of export market. Farmers generally did not complain either about prices being too low nor about payment being delayed. However, they did not have any details regarding the actual marketing procedures either for selling in the Tashkent or other major domestic market or selling to non-domestic buyers.

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<sup>17</sup> During discussions in Fergana, AgriFirm leaders expressed an interest in becoming associated with a new fresh produce marketing organization “Uzprommashimpeks” that is organized as a parastatal under the Ministry of External Economic Relations, Investment, and Trade, with the purpose of brokering AgriFirm export of fresh products. This new organization serves as the broker between the AgriFirm and the foreign buyer, guaranteeing the contract between buyer and seller. The AgriFirm is responsible for picking and packing the fruit according to contract specifications and *Uzprommashimpeks* takes responsibility for transporting the product from the AgriFirm to the foreign buyer. Timely payments are to be provided to the seller under the program.

<sup>18</sup> Among the AgLinks partners it was not uncommon for original AgriFirm founding members to number upwards from 300 to 800 with current members numbering from 13 to 70.

## Special AgriFirm Considerations

While some AgriFirms have been liquidated because they are unable to compete in the market economy, the Uzbek government considers them a strategic enterprise in the emerging private farmer agricultural production environment. This is in part because they serve as the first line of the agricultural statistics reporting system. As in the FSU, agricultural crop reporting statistics are still based on administrative data rather than on sample survey data as in Western developed economies. Consequently, AgriFirms retain an important role in the district administrative structure and many AgriFirm directors retain close personal and professional ties with senior District agricultural officials as they share a common background. However, over time one would expect that this linkage will gradually disappear.

## Private Farmers and Member Farmers

As noted above, private registered farmers are legal commercial business entities who keep formal business accounts, pay profit taxes, and are eligible to participate in government support and subsidy programs. Member farmers are not required to keep formal business accounts, are not required to pay profit tax, but also cannot access government support and subsidy programs that provide incentives for private farm development.

Within the 2003 *Shirkat* Reforms the Uzbek government makes available to private farmers working and investment capital loans at subsidized rates through the Agro Bank, Peoples Bank, and the Micro Credit Bank. Working capital loans carry a 3% annual interest charge; loans to cover the cost of implementing government policy measures (e.g. expanding fruit orchards) carry a 5% annual interest charge; while loans to lease-purchase specified machinery and related equipment carry a 7% annual interest charge<sup>19</sup>. These loans are subject to normal collateral requirements and loans are not based on projected income estimates.

As noted above, to qualify as a private farmer an individual prepares and defends an agricultural production business plan with the District Agricultural Officer in order to gain lease access to farming land. This is true for production of strategic crops as well as horticultural crops. Once granted, the individual can qualify for preferential credit and tax subsidies. However, the private farmer must also adhere to government stipulated production and marketing requirements. For strategic crops, this includes meeting targeted crop yields at government set prices<sup>20</sup>. Both wheat and cotton are sold under single channel government managed marketing arrangements. Specific production targets or prices are not set for horticultural production, consequently farmers prefer expanding into commercial fruit and vegetable production. However, when calculating profit taxes it is often required to formally register a portion of the crop sold for cash within the formal banking system with the remaining cash sales not subject to profit tax consideration. The Evaluation Team noted that a significant minority of the registered farmers had post-secondary school training in technical subjects including accounting, engineering, or agronomy and in several cases former school

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<sup>19</sup> In addition to preferential interest rates, land tax relief for up to five years is provided for planting qualifying orchards and for adopting drip irrigation practices. The government credit policies quite effectively address the severe lack of credit availability to smaller scale private farmers in other FSU countries that are a major disincentive to commercial family farm development.

<sup>20</sup> Officially, the targets are based on objective land classification criteria and designated fertilizer application rates and prices are set to reflect international market prices. Most farmers interviewed believe that the yield rates and prices are set in a more arbitrary fashion. However, one efficient farmer indicated that it was quite easy to meet the government targets and this person was frustrated that government set targets were based on land size and average yield and would prefer a program that would allow high productivity individuals to just meet a production target and use the extra land to invest in higher value fruit and vegetable crops.

teachers (one with a senior mathematics degree) had in recent years changed careers and become private farmers.

From the above discussion, it is clear that the ability to maintain expenditure, income, and tax accounts, business plans, and adherence to government policies are key attributes to receiving and maintaining private farmer status. Individual or families unable, unwilling, or uninterested in managing these activities will opt for member farm status.

Table I below shows the relationship between registered farmers and member farmers on the AgLinks AgriFirms and Water User's Association. The average ratio of member farmers to registered farmers is 6.1 to 1; ranging from 18.4 to 1 in Karshiboy Mirob WUA in Samarkand to 2.9 to 1 in Pungon WUA, also in Samarkand. Evaluation Team discussions with District Agriculture Officials indicated that their basic rule is that one member family can manage one hectare of horticultural crops or five hectares of wheat or cotton. (This figure excludes harvest labor requirements.)

**Table I: Registered Farmers and Member Farmers on AgLinks supported AgriFirms and water user Associations**

AgriFirm/ Water User Association	Irrigated Orchard Area ha	Registered Farmers	Member Farmers
<b>Samarkand Province</b>			
Dilkusho Sifat AF	550	80	300
Istikol Meva Sabsavot AF	1,893	70	560
Damkhasa Agri WUA	NA	30	94
Karshiboy Mirob WUA	3,176	38	700
Hojaboston Suv Tarmogi WUA	3,610	52	125
<b>Fergana Province</b>			
Muyan Sohivor AF	483	37	210
Kuvasoy Behizor AF	2,500	100	500
<b>Namangan Province</b>			
Toragurgon Sohibkorlari AF	436	46	450
Shirin Suv Yangier WUA	3,106	37	555
Pungon WUA	633	156	450

Discussions with farmer and women focus groups and with AF and WUA directors indicated a wide range of share and wage arrangements between registered and member farmers. Legally, all member farmers are employees of the registered farmer who holds their labor book.<sup>21</sup> In a few cases, the Evaluation Team was told that member farmers earn only wages, but most relationships are based on various types of share arrangements. Where the registered farmer pays most of the input costs he receives the bulk of the crop output, typically 60 to 80%. At the other extreme, one farmer who did not provide any input costs took only 15% of the total member crop harvest. Since member farmers are not subject to profit tax all crop sales are made through the registered farmer.

When discussing the nature of the individual registered farmer/member farmer relationships, it ranged from a strictly top down business arrangement to one representing a more equal partnership situation. Although formal analysis was beyond the scope of the assignment, the Evaluation Team concluded informally that the top down relationship pattern was the most common. This relationship seemed to be stronger in Samarkand than in Fergana or Namangan. However, important exceptions occur in the case where the two parties have close family ties. Moreover, in one AgriFirm, in which a participatory management style was evident at the AgriFirm director level,

<sup>21</sup> As in the FSU, all workers are issued with a personal employment record book that contains an individual lifetime work record of all jobs and all employers.

discussion within the women's focus group between registered farmers and member farmers took place on equal terms. In this group, one member farmer indicated that she and her family felt much more comfortable in this status as it was not necessary to keep formal accounts and they only had to negotiate with one person instead of maintaining relations with government agriculture and tax officials. In the same group another woman who had an advanced accounting degree said that as she was trained as an accountant she felt comfortable in managing accounts and relating to government and tax authorities. Clearly, this example and others where private farmers were able to expand their land holdings indicate that capable private farmers have the ability to meet and exceed government set production targets leading to an ability to earn higher incomes than member farmers. Yet somewhat balancing this observation is the fact that all registered and member farmers that met with the Evaluation Team, both male and female, possessed mobile phones suggesting that all were well established in the money economy.

# **ANNEX G: MANAGING EXPORTS OF HIGH-VALUE ORCHARD AND VINEYARD PRODUCTS**

The GOU follows an import substitution policy to regulate the flow of fresh horticultural exports. A specialist working group of experts operating within the Cabinet of Ministers conducts quarterly domestic supply and demand analyses of all perishable fresh produce to estimate surplus or deficit positions. When a particular commodity is determined to be in a deficit position, export is not permitted; when it is estimated to be a surplus position, exports are permitted. In recent years, exports of many fresh orchard and vineyard products could not be exported due to an unfavorable supply/demand balance. Consequently, GOU beginning in 2006 began to provide financial incentives including preferential credit and land tax reductions for farmers to expand orchard plantings and in recent years the supply/demand balance has improved. For the period July 1, 2013 through September 30, 2013, export restrictions on fresh high value orchard and vineyard products are not in effect. One hundred and seven transportation companies and individuals are authorized to export these products.

A translation of the most recent Minutes of the special working group is attached below:

№ 03/19-6  
01.07.2013

“AGREED”

**Chief of Information Analysis Department  
on agriculture and water resources,  
processing of agriculture products and  
consumption product issues of Cabinet of  
Ministers, Deputy Head of the Republican  
task force**

(signature) U.Y.Uzaqov  
30 June 2013

“APPROVE”

**First Deputy Minister of foreign economic  
relations, investment and trade, Deputy  
Head of the Republican task force**

(signature) A.C.Kamalov  
30 June 2013

## MINUTES

**of a special meeting conducted at the Cabinet of Ministers**

30 June 2013

Tashkent city

**Chaired by:** Uzoqov U.Y. – Chief of Information Analysis Department on agriculture and water resources, processing of agriculture products and consumption product issues of Cabinet of Ministers, Deputy Head of the Republican task force  
Kamalov A.C. – First Deputy Minister of foreign economic relations, investment and trade, Deputy Head of the Republican task force

**Participants:** Members of the task force (as listed in the list of participants)

## AGENDA

**Review proposals of ministries, agencies and other economic entities on the organized export of main agriculture crops produced in the territory of the republic and assigning additional measures.**

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(Kamalov, Raimov, Shermatov, Haydarov, Ismatullaev, Mirusmanov, Kobilov)

Based on the views and proposals made during the discussion of the issue on the agenda the Republican Task force **has decided:**

1. In order to provide the rational and balanced use of fruits and vegetables, cucurbitaceous and leguminous cultures being produced in territory of the republic and to attract additional currency funds to the republic by conducting the organized export of the surplus of internal consumption:

Based on the proposals of the members of the task force and the exporting enterprises, and on the basis of prices formed in the internal and external markets, and in order to safe keep and to increase the export of harvest surplus of internal consumption of

fruits and vegetables produced in the in the territories of the republic during the ripening period approve the average export prices of some of the **fresh agriculture products** in accordance with the **Annex 1**,

the average export prices of number of **dried** agriculture products in accordance with the **Annex 2**.

2. **It must be noted** that the average prices for some of the fresh and dried agriculture products allowed for shipping in accordance with the Annexes 1 and 2 of the present minutes remain in force until the amendment made by the next minutes of the Republican task force meeting.
3. The average export prices for fresh agriculture products approved with the Annex 1 of the minutes 03/19-6 of a Republican task force meeting conducted on 24 June 2013, the average export prices for dried agriculture products approved with the Annex 2 of the minutes 03/19-6 of a Republican task force meeting conducted on 2 April 2013, and the list of economic entities entitled to export fresh and dried agriculture products approved by relevant minutes for April-June months of the present year are accounted not valid from the day of present minutes coming in force.
4. Taking into consideration of reference of Council of Ministers of the Karakalpakstan Republic, Governor's offices of the provinces and Mayors office of Tashkent city and number of major exporting enterprises agree with the list of economic entities entitled for exporting the fresh agriculture products for July, August and September months of 2013 in accordance with the Annex 3.
5. It must be noted that economic entities operating in the territory of the Karakalpakstan Republic, provinces and the Tashkent city can export dried fruits and vegetables within the average export prices of allowed agriculture products in accordance Annex 2 of the present minutes without referring to the Republican task force.
6. The Republican task force should be assigned to make additions to the exporting enterprises listed in the Annex 3 of the present minutes at the end of each month by reviewing the export schedules presented by the economic entities, Council of Ministers of Karakalpakstan Republic, Governors' offices of provinces and Mayors' office of Tashkent city.
7. Central Bank (Haydarov), State customs committee (Raimov) to ensure the delivery of the assignments mentioned in the present minutes to commercial banks and customs organs in the places in one day and to take control of their practical execution.
8. The Special monitoring control groups established within the Council of Ministers of Karakalpakstan Republic, Governors' offices of provinces and Mayors' office of Tashkent city together with enterprises shipping products abroad at the end of each

day present relevant information to the special Staff center on the volume of fruits and vegetable products loaded for export.

9. Central Bank (Haydarov) at the end of each month to present the special Staff center information on the occasions of violation of current legislation related to the currency funds by the economic entities listed as exporting enterprises of fresh and dried agriculture products approved by the minutes of Republican task force.
10. “Uzbekiston Temir Yullari” (Uzbekistan railroads) state joint stock commercial company (Ismatullaev), “Central Asia Trans” HANDAK (Akramov) are recommended to render practical assistance in providing quality rail road services, timely provision of cars, mechanical sections, truck auto transport means to exporting enterprises listed in the Annex3 of the minutes of the Republican task force meeting.
11. National Air Company “Uzbekistaon Havo Yullari” (Palvanov) recommended to render widespread support for export loading the fresh fruits and vegetable products based on separate subsidized tariffs to economic entities listed in the agriculture products exporting enterprises approved by the Republican task force meeting minutes on the flights to foreign countries conducted from airports located in the provinces of the republic, especially from Navoi international airport.
12. The members of the Cabinet of Minister’s Republican task force (Kamalov, Shermatov, Raimov, Haydarov, Ismatullaev, Palvanov) are responsible for provision of execution and control of assignments approved in the present minutes.

### **Annex 1**

To the minutes of a №03/19-6 meeting of the Special task force of the Cabinet of Ministers conducted on 30 June 2013.

#### **Suggested average export prices for some of the fresh agriculture products (under EXW terms)**

<b>№</b>	<b>Name of the product</b>	<b>Average prices for</b>
1.	Tomato	800
2.	Cucumber	600
3.	Chili pepper	800
4.	Sweet pepper	800
5.	Cauliflower	450
6.	Green vegetables	800
7.	Spring onions (leek)	600
8.	Carrot	300
9.	Beetroot	300
10.	Garlic	1,000
11.	Eggplant	800

12.	Vegetable marrow	600
13.	Turnip	600
14.	Apple	1,200
15.	Pear	2,000
16.	Grape	2,000
17.	Melon	700
18.	Pumpkin	500
19.	Lemon	2,500
20.	Reddish	200
21.	Cabbage	200
22.	Cherry	2,000
23.	Apricot	800
24.	Sour cherry	1,200
25.	Plum	800
26.	Peach, nectarine	1,500
27.	Water melon	300
28.	Musk melon	1,000
29.	Fig	800

#### **Annex 2**

To the minutes of a №03/19-6 meeting of the Special task force of the Cabinet of Ministers conducted on 30 June 2013.

#### **Suggested average export prices for some of the dried agriculture products\* (under EXW terms)**

<b>№</b>	<b>Name of the product</b>	<b>Average prices for</b>
1.	'Extra Grade' raisin	4,500
2.	High grade raisin	4,000
3.	Raisin (1 grade)	3,000
4.	Raisin (2 grade)	2,000
5.	Dried raisin 'brown'	1,500
6.	Dried raisin 'black'	2,000
7.	'Extra Grade' dried apricot	4,500
8.	High grade dried apricot	3,000
9.	Dried apricot (1 grade)	2,200
10.	Dried apricot (2 grade)	1,500
11.	Apricot stone seed	4,000
12.	Dried cherry	2,000
13.	Dried pear (1 grade)	1,500
14.	Dried apple (1 grade)	1,000
15.	Dried apple (2 grade)	700
16.	Dried plum (1 grade)	2,000
17.	Dried plum (2 grade)	1,500
18.	Compote mix	700
19.	Dried melon	1,000
20.	Dried carrot	1,200

21.	Dried cabbage of high grade	1,200
22.	Dried cabbage (1 grade)	1,000
23.	Dried onions of high grade	1,500
24.	Dried onions (1 grade)	1,000
25.	Dried green onions	1,800
26.	Dried potato	1,500
27.	Dried beetroot (1 grade)	1,700
28.	Dried beetroot (2 grade)	1,200
29.	Dried eggplant	1,500
30.	Dried red chili pepper	2,500
31.	Dried green vegetables, chili pepper, sweet pepper mix (grinded)	1,600
32.	Dried red chili pepper (grinded)	2,500
33.	Dried tomato (including grinded)	1,500
34.	Dried dill 'stem'	1,600
35.	Dried dill 'stem' (3 grade)	1,000
36.	Dried dill 'needles'	1,800
37.	Dried parsley 'stem'	1,200
38.	Dried parsley 'leaves'	1,600
39.	Dried sweet pepper 10*10 mm	2,200
40.	Dried sweet pepper 6*6mm	2,000
41.	Dried sweet pepper (grinded)	1,800
42.	Walnut (cleaned)	5,000
43.	Walnut (unclean)	3,500
44.	Peanut (cleaned)	3,500
45.	Peanut (cleaned 1 grade)	2,000
46.	Peanut (cleaned, small 2 grade)	1,500
47.	Peanut (unclean)	1,500
48.	Peanut (unclean 2 grade)	1,000
49.	Almond (cleaned)	5,000
50.	Almond (unclean 2 grade)	3,000
51.	Dried fig	3,000
52.	Russian olive	4,000
53.	Dried pomegranate	2,000
54.	Dried pumpkin	1,500
55.	Salted apricot stone	3,000
56.	Dried coriander	2,000
57.	Rose hips	1,000
58.	Chick peas	1,200
59.	Mung bean	1,200
60.	Bean	1,000
61.	Dried cauliflower	1,100
62.	Dried vegetable marrow	2,000
63.	Dried haw	1,600
64.	Dried sour cherry	3,000
65.	Dried mulberry	2,500

66.	Coriander seed	2,000
67.	Dried peach	2,000
68.	Apricot stone	1,000
69.	Dried current	2,500
70.	Dried raspberry	2,500
71.	Dried strawberry	2,500
72.	Dried Burberry	2,500
73.	Dried sea buck thorn	1,000
74.	Dried basil	1,000
75.	Fried sesame of high grade	2,300
76.	Fried sesame (1 grade)	1,000
77.	Sesame (cleaned)	2,000
78.	Sesame (1 grade)	1,500
79.	Dried quince	1,000
80.	Dried olcha	1,000
81.	Fried sunflower seed	1,000

Note: Economic entities can export dried fruits and vegetable products within these price ranges while not being listed in the Republican task force meeting minutes.

### **Annex 3**

To the minutes of a №03/19-6 meeting of the Special task force of the Cabinet of Ministers conducted on 30 June 2013.

#### **List of economic entities for export of fresh agriculture products**

<b>№</b>	<b>Name of economic entity</b>	<b>Located region</b>
1.	2 companies	Karakalpakstan Republic
2.	10 companies	Andijan region
3.	3 companies	Bukhara region
4.	3 companies	Jizzakh region
5.	5 companies	Namangan region
6.	3 companies	Surkhandaryo region
7.	3 companies	Sirdaryo region
8.	14 companies	Fergana region
9.	1 company	Qashqadaryo region
10.	40 companies	Tashkent city
11.	9 companies	Khorezm region
12.	22 companies	Tashkent region

## **ANNEX H: SURVEY TABLES**

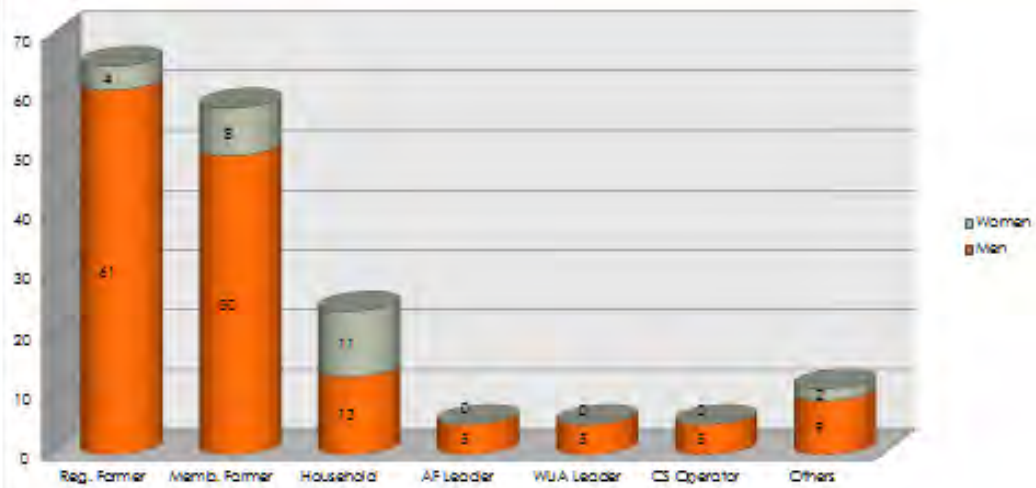
**USAID/Central Asian Republics  
The Agricultural Linkages (AgLinks) Project Evaluation  
SOL-176-13-000004**

August 2, 2013

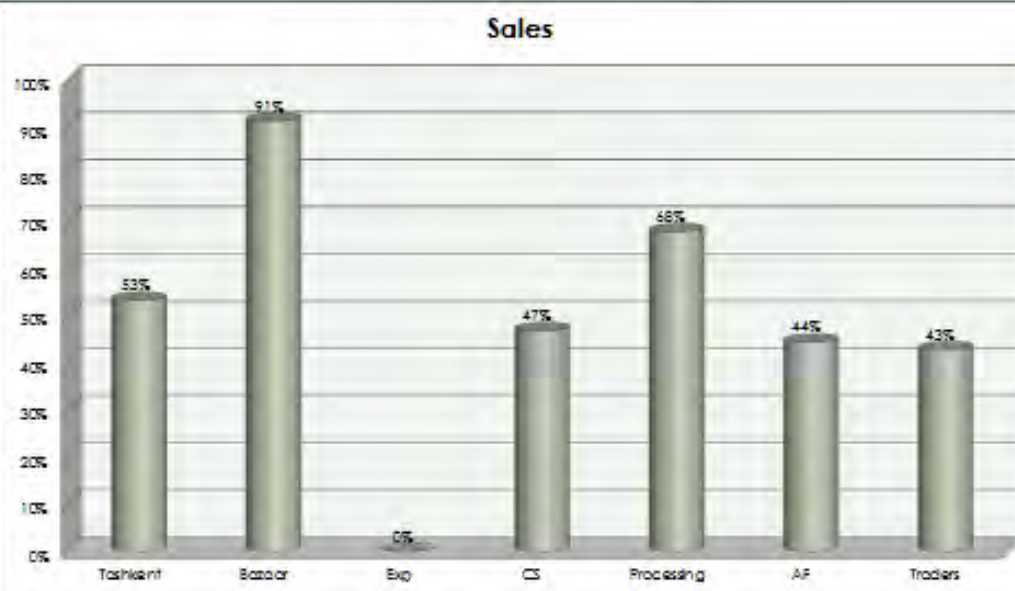
## Scope of the Evaluation

- ∞ 39 focus group and individual interviews with farmers, women, cold storage operators, leaders of AFs and WUAs in 3 target regions:
  - I. 20 interviews in Samarkand region
  - II. 8 interviews in Ferghana region
  - III. 11 interviews in Namangan region

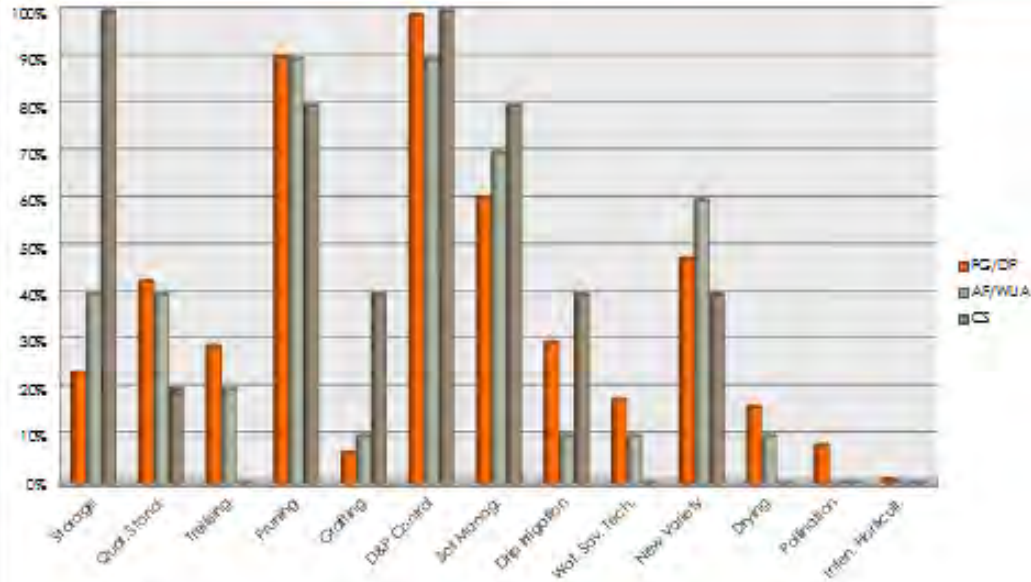
## Interviewed People



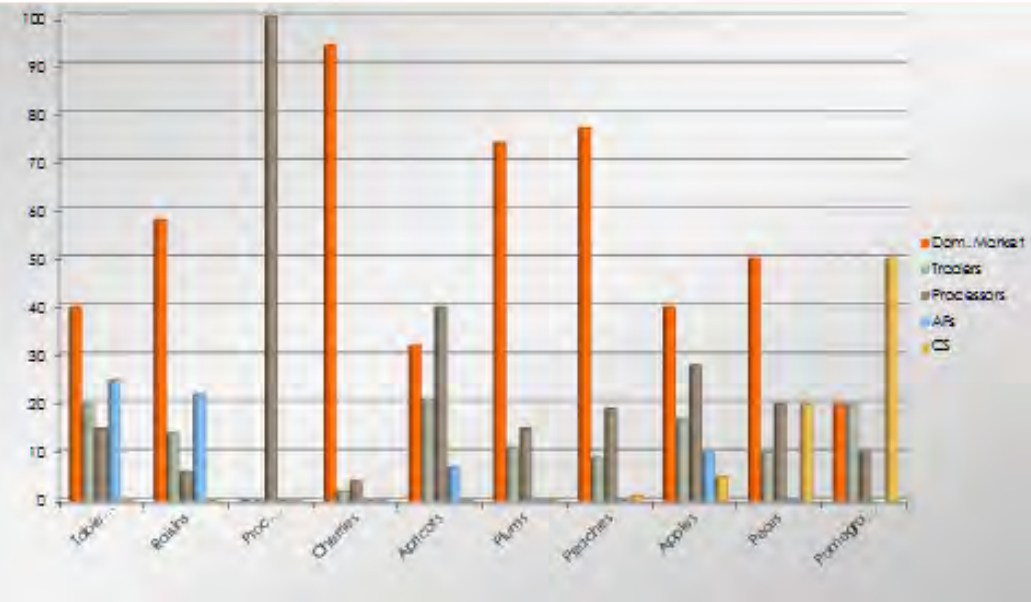
## Distribution Channels of Agro-products



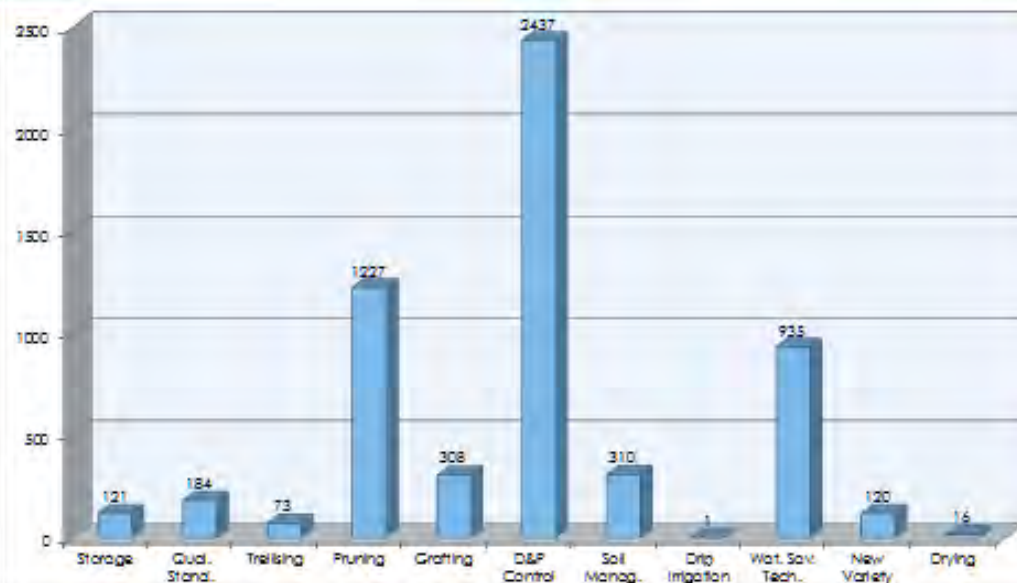
## 5 Most Important Innovations Introduced by AL



## Distribution Channels by Products



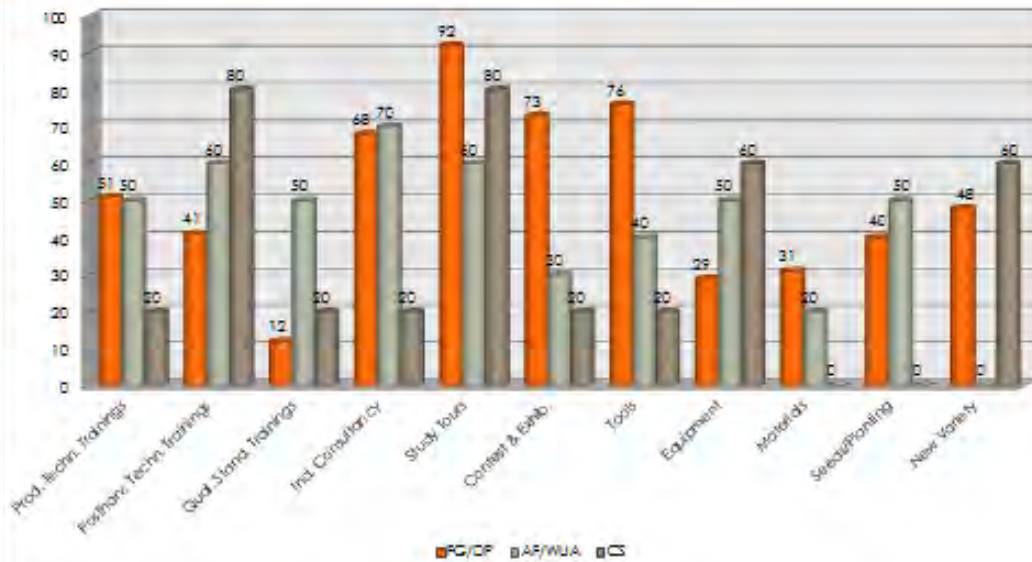
## Adopted Technologies (estimated)



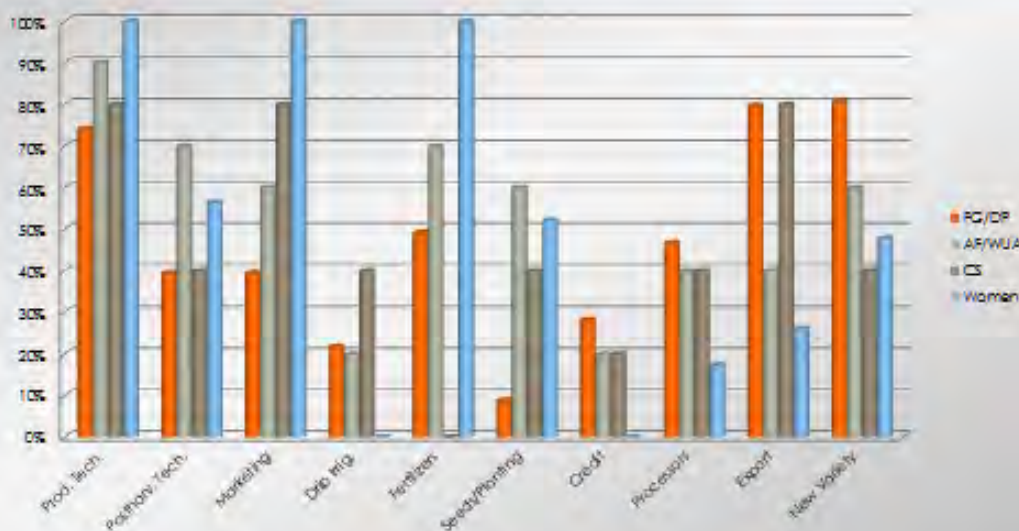
## Increase of Farm Productivity

- 83 Table Grapes – the average increase of production is about 50-70%, with some extreme cases up to 300%;
- 83 Raisins – the average increase of production is about 30-40%, with highest increase up to 80%;
- 83 Apricots – the average increase of production is about 50-80%, with one extreme case up to 400%;
- 83 Peaches – the average increase of production is about 30-40%;
- 83 Apples – the average increase of production is about 40-50%, with the lowest increase approx. 5-10%.

## Requested Additional Assistance



## 5 Most Important Items for Improving Productivity of Farmers



## Established Linkages

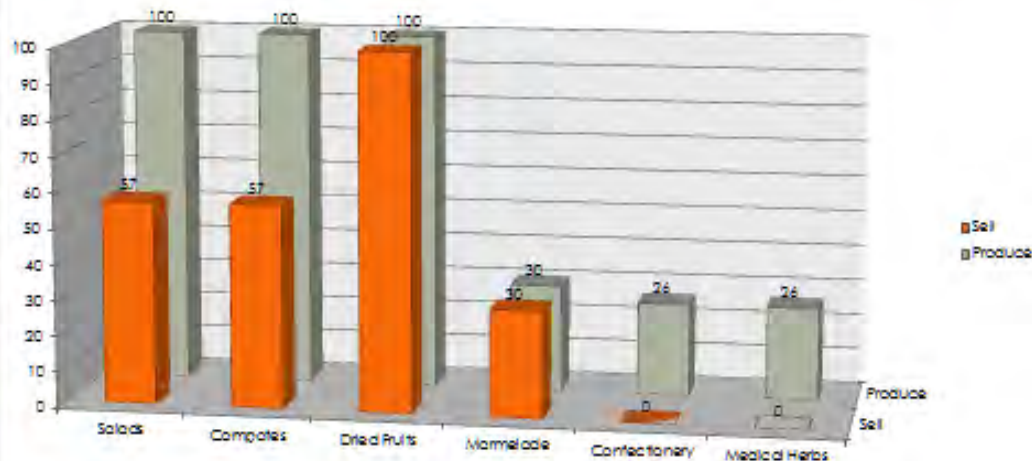
### Focus Groups and Demonstration Plot Owners:

- ∞ Linkages with farmers from other regions of Uzbekistan;
- ∞ Linkages with nursery owners;
- ∞ Linkages with specialists of Plant Protection Institute and Shreder Institute;
- ∞ Linkages with specialists of UC Davis Institute;
- ∞ Linkages with MAWR.

### Cold Storage Operators, Agro-firms and Water Users Associations:

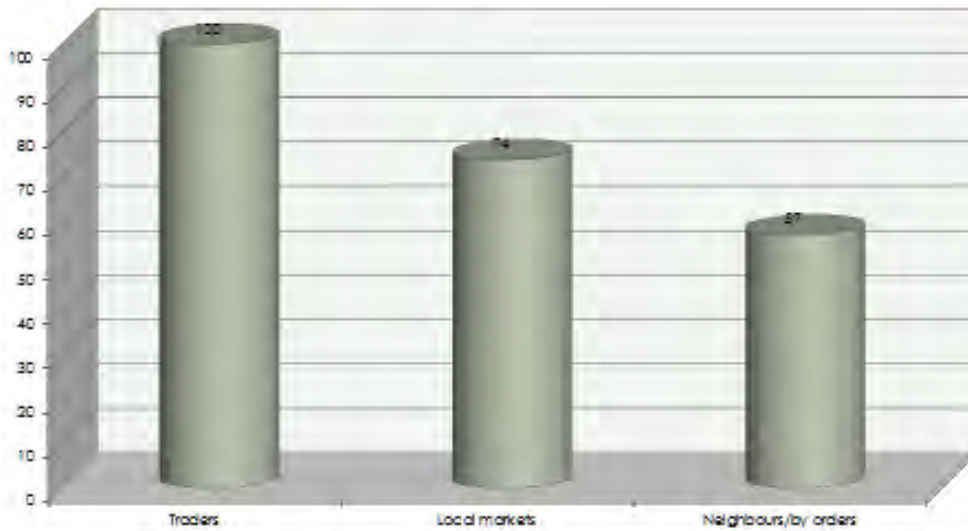
- ∞ Improved relations with member-farmers and linkages with farmers from other regions;
- ∞ New and improved relations with other AFs and WUAs;
- ∞ Linkages with nursery owners;
- ∞ Linkages with specialists of Plant Protection Institute, Shreder Institute and UC Davis Institute;
- ∞ Linkages with Cold Storage Operators from other districts and regions;
- ∞ Linkages with MAWR.

## Women's Home Based Production



## Distribution Channels of Home Processed Products

Sales



## Distribution Channels of Home Processed Products

Sales

