



USAID
FROM THE AMERICAN PEOPLE

TAJIKISTAN

PRODUCTIVE AGRICULTURE PROJECT

ANNUAL PROGRESS REPORT

YEAR III, OCTOBER 2011 – SEPTEMBER 2012



USAID PRODUCTIVE AGRICULTURE PROJECT

ANNUAL PROGRESS REPORT

YEAR III, OCTOBER 2011 – SEPTEMBER 2012

CONTRACT NUMBER: 119-C-00-09-00021

COTR USAID: Suhrob Tursunov

PROJECT MANAGER: Geoffry Chalmers

CHIEF OF PARTY: Will Bullock

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United State Government

Table of Contents

Executive Summary	4
Highlights of the Year	6
Performance Against Key Indicators.....	6
Major Milestones Achieved	7
Project Strategy Overview.....	11
Objective 1: Market Development	12
1.1 Marketing	13
1.2 Value Added Investment	15
1.3 Improved Farm-Level Linkages.....	16
1.4 Improved Access to Finance	17
Objective 2: Increased Productivity.....	20
2.1 Increased Supply of Certified Inputs	21
2.2 Knowledge of Agricultural Practices	22
2.3 Production Investment.....	23
Lessons Learned	24
Indicators.....	27
Indicator 1 & 4: Farm Income and Yield	27
Indicator 2: AgSME Sales	30
Indicator 3 & 5: Financial Transactions and Investment	32
Indicator 6: Best Practice Adoption.....	33
Indicator 7: VC Actors with Improved Quality.....	34

Executive Summary

The Productive Agriculture Project activities were refocused during the middle of Year 3, following the announcement of the Feed the Future strategy in March 2012. Throughout 2012, the Productive Agriculture Project has been working closely with USAID/Tajikistan to realign project activities to reflect the new priorities and objectives established under Feed the Future. Most notably, this has meant a shift in project focus towards one specific region, 12 districts in Western Khatlon. Khatlon, with large numbers of poorer and more food insecure households, less developed commercial linkages, but strong preconditions for agricultural growth, presents many new challenges but also an exciting opportunity to focus USAID resources where need is greatest and impact can be strongest.

This Annual Report presents two distinct components 1.) The results of the first half of the project working with partners in the Sughd Region; and 2.) Expanded work in Khatlon in alignment with the USAID Feed the Future Initiative. In both cases, the project is achieving impressive results in incomes, value chain competitiveness, and food security.

Work in the **Sughd Region** in the first half of Year III saw strong results for apricot, late onion, and open field tomato value chains. The pilot investment project was successfully opened, substantially increasing income not only for the investing farms, but also for the dekkhan farms producing fresh apricots in the Asht district. The second round of investment projects were funded, expanding the infrastructure needed to link the farms of Tajikistan with markets. One of these projects (BADR) was completed prior to the season and showed a strong increase in sales. As relates to the development of the input industry, inputs dealers showed a strong increase in their sales, were linked with new farm customers and with new wholesale suppliers, resulting in a more robust and profitable input sector that will drive further long-term improvements and progress in the agricultural sector. Partner farms growing apricots, tomatoes, and late onions realized the financial benefits of using certified inputs through the project voucher programs, increasing yields and income. The project's success in encouraging (through vouchers, training, and marketing) greater use of improved inputs had a broad impact, as demonstrated in comparisons with control groups who realized substantially fewer gains. Input dealer infrastructure was upgraded, and links were established between a regional wholesaler and local retail dealers. The income increases were achieved by transferring best practices to key private sector actors in the chain; this transfer of knowledge is ahead of targets and has resulted in value chain investment, which is on target for Year III. An export association in Isfara focused on the export of apricots was formed with 12 founding members with the mandate of representing industry interests to government and improving the quality and corresponding image of Tajikistan products – an important benefit to all actors in the chain that will last long beyond USAID support.

In the Feed the Future districts of **Western Khatlon**, two new local NGOs were added to one existing NGO partner, expanding project reach. The project trained these NGO partners in wide range of technical areas as well as broader capacity building, and a project staff member was embedded with each NGO. All of this ensures that these groups are strengthened and able to carry on the project's work for many years. . The strategy of working through local NGOs achieved results both in market development and developing the input industry. Ten projects were included in the second round of investment projects includes one investment project from Khatlon, identified during expansion of activities in Western Khatlon under the Feed the Future Initiative. 15 potential investment projects were identified and invited to participate in the third round of investment projects to be awarded in December 2012. Farms were polled and local government educated on the project in all 12 districts as partner farms were identified for participation in early onion, hothouse tomato, and orchard vouchers, as well as machinery loan and investment support. As relates to the inputs sector in Khatlon, the project focused on building a new network of high potential retail and wholesale partners, who will be the primary channel for ensuring commercial uptake of improved inputs – and the resulting productivity

improvements. Retail input dealer partners were expanded, and a wholesale partner was brought into the region to supply certified inputs to farms through these retailers. The results of using certified inputs showed that, despite poor weather conditions this year for early onions, voucher recipients' fields were more resilient in the face of an extended winter, wet spring, and late harvest. This result is extremely encouraging in that it demonstrates how project interventions can improve resiliency and thus long term food security, not just short-term spikes in income. The hothouse tomato voucher showed what small changes in the use of quality inputs could improve yield and income, while the hothouse tomato demonstration showed the improved yield and income possible through the use of a complete package of certified inputs. Early onion demonstrations laid the foundation for the early onion voucher program, supporting farms in 11 of the 12 target districts to plant early onions. These same farms are eligible to receive project support in financing the purchase of tractors through the project's grant program, which will provide further evidence of the efficacy of using "smart subsidies" to buy down the risk of investing in new technologies while ensuring private sector buy-in and commercial viability.

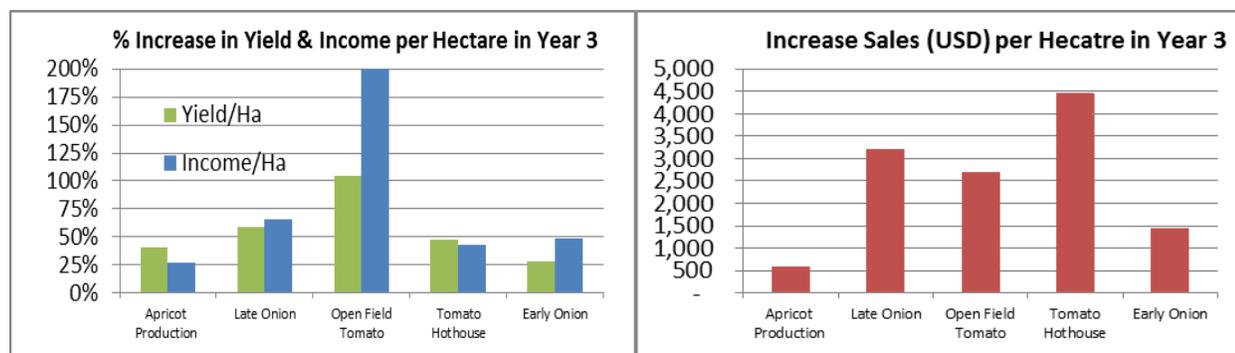
The project indicator of Value Chain actors with improved quality identified dried apricots as the focus area for quality improvement, and was behind target, impacted by the geographic switch to Western Khatlon where value added activities in general and the apricot value chain in particular are weak. The remaining six primary indicators for Year III are either at target (value chain investment and access to finance) or exceed targets (Farm Income, Yield, AgSME Sales, and best practices adopted). Investment and access to finance targets project to date were exceeded. This does not include 50 approved tractor loans which will take place in the first quarter of year IV, adding an additional \$500,000 to loans and over \$1 million to investment. Farm income and yield increases are driven by farm adoption of best production practices using certified inputs through project voucher programs. AgSME sales among Agribusiness partners increased substantially on partner investment. Input dealer partners experienced an even greater increase in sales reflecting growing demand for inputs in general and certified inputs in particular.

Highlights of the Year

Performance Against Key Indicators

Farm Incomes Increase

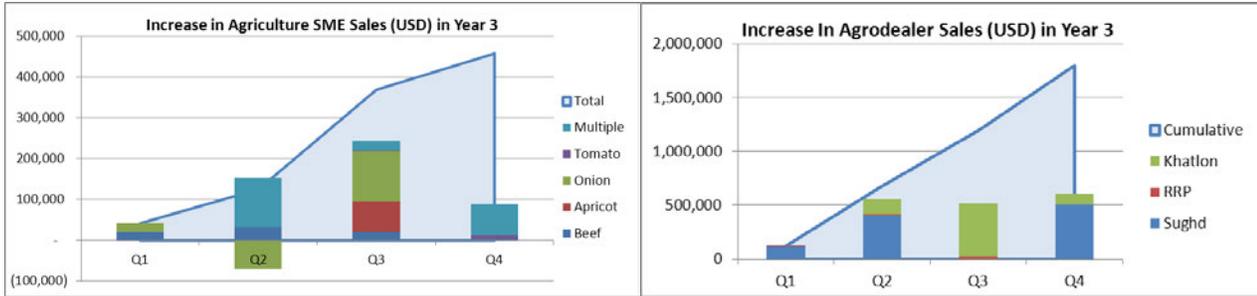
The project directly supported 428 farms to access new productive technologies for apricot, late onion, open field tomato, tomato hothouse and early onion production through its Year 3 voucher programs. This support coupled with increased access to extension, mechanization and financial services facilitated a net increase of 3,006,696 Kg of agricultural product. With the market development work on increasing access to profitable markets, through improved infrastructure, buyer-farm linkages and trade promotion, farms also sold more, overall, at a higher price. This resulted in a cumulative increase of 711,512.66 USD earned by farms. This is an average 1,662.41 USD earned by each farm which can be reasonably attributed to support by the project. As shown in the graphic below, project partner farms experienced significantly greater gains (between 25% and 200% higher) in income and yield per hectare when compared to the control group, indicating substantial impact of project interventions.



* Calculations based on reported 2012 yield and income per hectare as compared to the control

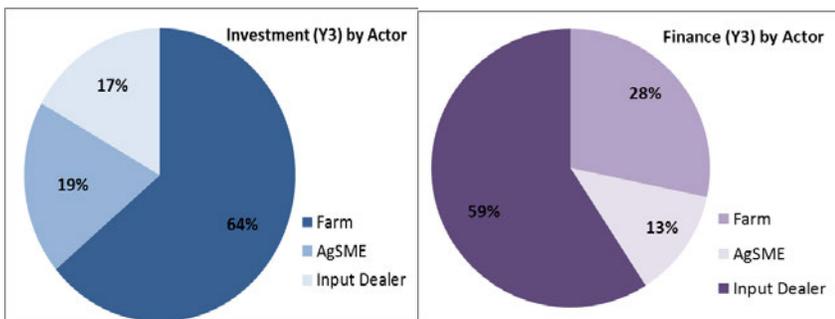
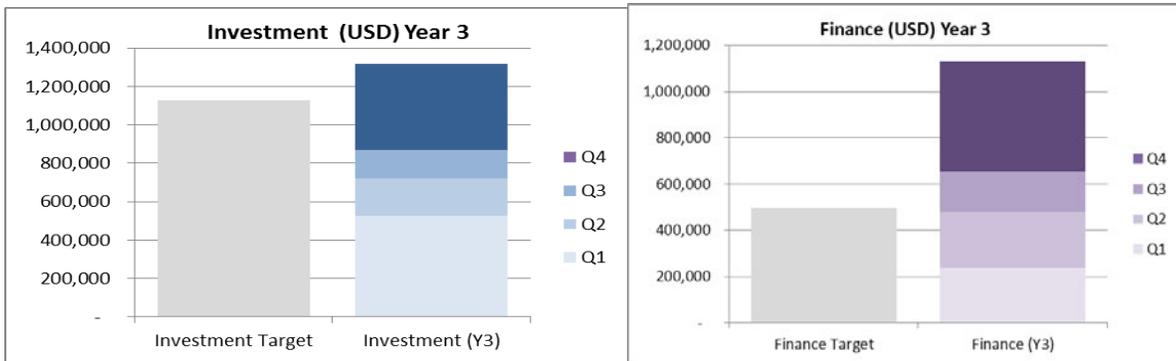
AgSME Sales Increase

The project supported 12 agribusinesses this year. This support included various degrees of technical support with marketing, developing financial plans, HACCP certification and linkages with farms. Several agribusinesses also received matching grant support for investments in processing lines and cold storage. As a result, these firms reported an overall increase of 457,861 USD in sales of the year. The project also supported 12 agro-input dealers by establishing linkages, improving supply of certified inputs, and participation in the voucher program. As a result, these set of agro-dealers reported an increase in their sales of 1,799,013 USD.



Investment and Financing Increases

The project met both its Year 3 investment and finance targets, reaching US\$450,189 and US\$476,060 respectively. Much of the investment was driven by the mechanization loan product. The reported results include not just grant recipients but also an initial set of tractor loans which the project helped facilitate which was financed fully by the farm and bank (first quarter). The increase in financial transactions is largely attributed to input dealers, which the project supported in accessing financing as part of the voucher program. Farms too borrowed to a limited extent for inputs, but to a larger extent for investment in new machinery.



Major Milestones Achieved

The following three “Success Stories”, already submitted to USAID separately, are illustrative of some important initiatives undertaken during Project Year III.



USAID
FROM THE AMERICAN PEOPLE

TAJIKISTAN

SUCCESS STORY

Tajik Agriculture Input Dealer Becomes Official Distributor of Dutch Seed Company



Inset Photo Credit: Riano Rustamova

“Support from the USAID Productive Agriculture Project has built the credibility and capacity of my company allowing me to become a viable partner for international suppliers.”

In Tajikistan, there are enormous barriers to accessing quality, certified seed for planting fruits and vegetables. Mr. Samiev Mahmaddamin started his agriculture input shop in Northern Tajikistan in 2008 and since that time, has struggled to access certified seeds to provide to farm customers. The lack of quality seed in the market has implications for the growth of Mr. Mahmaddamin’s business and for the productivity of farms.

In August 2011, USAID’s Productive Agriculture Project partnered with Mr. Mahmaddamin to support the import of certified onion seeds for sale to commercial farms. With Project support, Mr. Mahmaddamin registered significant sales of certified Aldava seed to new customers in the southern region of Khatlon.

In the process of procuring the certified onion seeds, Mr. Mahmaddamin was introduced to the Central Asian representative of Nickerson-Zwaan, a seed company headquartered in Made, Netherlands. As a result of his interaction with the company, Mr. Mahmaddamin was invited to attend a seed fair at the company’s headquarters in October 2011.

In December 2011, the USAID Productive Agriculture Project supported a Nickerson-Zwaan representative to visit Tajikistan and explore collaboration opportunities with Mr. Mahmaddamin. As a result of the visit, Mr. Mahmaddamin has been named an official distributor for Nickerson-Zwaan in Tajikistan. The partnership will allow him to secure discounted seeds directly from Holland and access free seeds to demonstrate in Tajikistan.

Mr. Mahmaddamin has already begun to market the new products to his customers and recently placed an order for €13,000 of certified seed for the Tajik market. This new, sustainable source of certified seed will not only support business growth for Mr. Mahmaddamin, but provide Tajik farms the quality products to expand export of fruits and vegetables. Mr. Mahmaddamin stated that, “Support from the USAID Productive Agriculture Project has built the credibility and capacity of my company allowing me to become a viable partner for international suppliers.”



USAID | **TAJIKISTAN**
FROM THE AMERICAN PEOPLE

SNAPSHOT

Increasing Export Potential and Farm Profit through Cold Storage Technology

USAID Productive Agriculture Project builds new infrastructure to increase exports of apricots and create new jobs for Tajik women



Photo: Abduvohid Haydarov

Women with new employment opportunities due to construction of a cold storage pack house in Asht District

“Due to the support of the USAID Productive Agriculture Project, my export capacity has increased and I have the ability to provide more job opportunities in my district. I can also support local farms through the purchase of greater amounts of apricots without fear of them spoiling. All of this improves the lives of my community members. I greatly appreciate the support of the Project in facilitating the growth of my community.” - Ashurov Pulod.

U.S. Agency for International Development
www.usaid.gov

Tajikistan is a major global producer of apricots, with over 40,000 ha grown in the northern region alone. Entrepreneur Ashurov Pulod has been exporting apricots from the district of Asht, Tajikistan for over 20 years, but has consistently encountered barriers to business growth. In particular, the inability to cool and store product limits the amount of apricots that Pulod can purchase from farms and results in spoilage of product while waiting for buyers with refrigerated trucks, which often face lengthy delays due to poor transportation infrastructure and customs processes.

In 2009, Pulod was awarded a grant by the USAID Productive Agriculture Project to build a state-of-the-art cold storage/pack house, the first of its kind in Tajikistan. Pulod invested 66% of the required funds, while the Project granted 34% of the capital and provided technical assistance to complete a structure with capacity to cool and store 200 tons of fresh apricots for export.

In addition to investing in the pack house, Pulod created an open joint stock company, which includes investments from 8 apricot supplier farms. Partial ownership of the company by suppliers allows farms to access increased profits from the value chain and ensures greater sustainability of the company through guaranteeing a reliable supply of product.

The cold storage facility was completed in time for the apricot harvest in May 2012. An opening ceremony was held, attended by the Chief of Staff for the President of Tajikistan, the Chairman of Asht District, farms, and various entrepreneurs. The opening of the facility also made national news.

Since the opening of the pack house, Pulod has increased his export of fresh apricots by 74% and has been able to provide jobs for 50 women to sort and pack the apricots. Increased quality through cooling also allows Pulod to expand export opportunities to the European market, which has stricter quality standards than Russia and other countries in the region.

The opening of the cold storage facility also attracted three entrepreneurs from the southern region of Khatlon, interested in building similar facilities. The Project plans to work closely with these entrepreneurs to expand this successful model to the less developed southern districts. Pulod plans to provide support for expansion of the business model given the benefits he has gained from the facility. He said: “Due to the support of the USAID Productive Agriculture Project, my export capacity has increased and I have the ability to provide more job opportunities in my district. I can also support local farms through the purchase of greater amounts of apricots without fear of them spoiling. All of this improves the lives of my community members. I greatly appreciate the support of the Project in facilitating the growth of my community.”



USAID
FROM THE AMERICAN PEOPLE

TAJIKISTAN

SUCCESS STORY

Farmers buy new tractors with USAID assistance

USAID supports Tajikistan farmers in obtaining agricultural machinery through commercial credits



Photo: Rano Ruzdarmov

USAID Country Director for Tajikistan, Mr. Jeff Lehrer, hands a tractor key to a Tajikistan farmer

Tajikistan, May, 2011

"Thanks to USAID, we solved our farm problem, expanded irrigable land and increased our profit. I never knew it was possible to get agricultural machinery through loans."

U.S. Agency for International Development
www.usaid.gov

A group of Qubodiyon District farmers recently purchased a new tractor for US \$21,600 with assistance from the USAID Productive Agriculture Project in Tajikistan. The farmers – Rahmatullo Gafurov, Zoir Jurabaev and Amonullo Gafurov – owned 13.7 hectares (ha) of Dehkan farm land in the Qubodiyon District. They grew wheat, potato, tomato and carrot on their land, but due to support from USAID, the farmers have introduced new crops and increased their scope of production. The new tractor has made planting operations more efficient and has thus contributed to increased income.

Because of the lack of agricultural machinery, farmers in Tajikistan have had to conduct many farming operations manually and pay high machinery service fees, which impacts both yield and costs. When the farmers learned about the USAID Productive Agriculture Project tractor loan program, they applied for assistance to increase the efficiency of their farm operation.

To facilitate the purchase of tractors, the USAID Productive Agriculture Project, in partnership with Agroinvestbank and Arvand Micro-finance, initiated an innovative financial product for purchasing tractors. Under this mechanism, the tractor purchased with credit is used as collateral to support farmers in securing the loan. Following introduction of this collateral mechanism by the USAID Productive Agriculture Project, the new credit product is being offered by several financial institutions in Tajikistan.

Under the mechanism, farmers obtained a loan for 45 percent of the cost of the tractor, the farmers paid a 30 percent cash down payment and the project provided a grant for the remaining 25 percent of the cost. Using machinery as collateral enabled farmers to qualify for credit.

In Qubodiyon the farmers obtained an additional 10.5 ha, increasing their land from 13.7 to 24.2 ha. To cultivate non-irrigated land, the farmers purchased a pump and generator and built a 160-meter tube for irrigation. In addition, the farmers are also planning to provide tractor services to other farmers to offset the cost of finance.

According to farmer Rahmatullo Gafurov, "Thanks to USAID, we solved a major problem, expanded irrigable land and increased our profit. I never knew it was possible to get agricultural machinery through loans."

Project Strategy Overview



Offseason Domestic: Improve cool/cold storage infrastructure for onions and orchard fruits, and off-season production of tomatoes to sell during off-season at price premiums on the domestic market.

Processed Export: Increase production volumes of quality, dried fruits and nuts as well as juice concentrate to wholesalers in Russia and Europe at price-point which is competitive with other Central Asian and MENA countries.

Fresh Export: Intensify productivity of onions and improve cold chain transport of fresh apricots, grapes, and cherries to increase sales volumes to Russian markets, especially during early-season window.

FACILITATING UPGRADES

Facilitating Investment

- 1.2.1 Assist firms to develop marketing plans to examine cost/return feasibility of investments in new equipment and facilities.
- 1.2.2 Cost-share and link firm to financing to invest in storage, transport and processing infrastructure.
- 2.1.2 Improve capacity of agro-dealers to make investments to provide services to farms.
- 2.1.3 Support input dealers to access working capital needed to stock and sell certified inputs.
- 2.3.3 Maintain voucher program to expand demonstration effect of conveying return on investment in production technologies.
- 2.3.2 Promote input dealers to extend sales on credit, as an alternative mechanism to assist farms in financing technology purchases.
- 2.3.1 Assist financial institutions to adopt agricultural lending methodologies and lend to creditworthy segments of farms on commercial basis.
- 2.4.1 Expand equipment finance program to sustain mechanization services needed for intensive production and support loan product development.

KEY UPGRADES

END MARKET

Increased Access to Markets

- 1.1 Develop Export Association, representative of private industry, to evaluate new markets, promote quality standards and establish trade linkages that will expand market access.
- 1.2 Support investments in trade and processing infrastructure that will improve value-addition and move production efficiently and profitably to market.
- 1.3 Demonstrate production to buyers and link farms through aggregation points.

Increased Productivity

- 2.1 Strengthen agro-input network capable of supplying certified, quality technologies required for intensive production.
- 2.2 Develop extension services through interested commercial providers to facilitate knowledge transfer and uptake.
- 2.3 Improve access to adequate financial services that will support investments in productive technologies.
- 2.4 Increase mechanization services that will support commercial production.

VALUE CHAIN

FACILITATING UPGRADES

Building VC Partnerships

- 1.1.3 Work with Export Association to promote products at international fairs and pursue new markets.
- 2.1.1 Support agro-dealers to attend fairs, evaluate new technologies, and establish supply connections.
- 1.3.1 Organize open field days to demonstrate production capacity and establish farm-buyer linkages.
- 1.3.2 Establish exporter collection point to serve as aggregation center linking farms with buyers to improve efficiencies and lower transaction costs.
- 1.3.3 Coordinate stakeholder meetings between buyers and farms to convey market requirements for products.

Transferring Knowledge

- 1.1.1 Work with Export Association to conduct research to evaluate market opportunities and requirements.
- 1.1.2 Support Export Association in defining consistent quality standards and promote among partners to establish a consistent export brand.
- 2.2.1 Support agro-input importers, wholesalers and retailers to promote technologies through demonstration in order to build market demand.
- 2.2.2 Improve capacity NGOs to provide commercial extension services to farms, linking with input dealers.

Objective 1: Market Development

Market access is key to the growth of core value chains which target both domestic and export markets with the potential to engage household and small farms as suppliers. The project focused its effort on four strategic areas of intervention which will better position Tajikistan farms to take advantage of profitable market channels. Fundamentally, these interventions seek to shift the way in which firms collaborate in order to promote recognition of the shared mutual benefit of working for the good of the sector. This in turn has altered equations of risk and return as actors recognized commercial interests which previously were unseen due to the highly fragmented nature of agricultural value chains. It is expected that the facilitative work of the project will continue to multiple benefits as market access broadens income-opportunities for greater numbers of commercial farms, as well as small farms and rural households.

These four major strategic elements of the projects' market development approach are -

1. Establish an entity (Export Association) that is representative of major agribusinesses to promote agricultural products, establish quality standards and increase trade volumes;
2. Facilitate investment in storage and transport infrastructure as points of aggregation and increase marketing efficiencies needed to take advantage of competitive market windows;
3. Improve linkages between buyers (processors and exports) and commercial farms which were making productivity investments to serve as reliable suppliers;
4. Promote financial linkages which will supply needed liquidity for both working capital needs and investments at the farm and trade/processing-level.

The following tables are helpful to evaluating the rationale of the projects' market development approach. There are fairly significant factors which have limited agricultural development.

SWOT analysis of Market Access

Strengths	Weaknesses
<ul style="list-style-type: none"> - Sales to Russian market is organized by Tajiks, providing an established market presence - Companies recognize mutual interest to improve quality (Export Association) - Companies positioned and interested in production and quality investments 	<ul style="list-style-type: none"> - Low supply volumes due to poor productivity - Dated infrastructure / insufficient processing - No established quality standards or uniformity - Land-locked / distance from buyers - Weak transport infrastructure - Lack of finance that supports investment needs
Opportunities	Threats
<ul style="list-style-type: none"> - Wide market demand for competitive products with premiums on both quality and quantity - Seasonal advantage to sales associated with early growing season 	<ul style="list-style-type: none"> - Imports and exports can be unexpectedly cut off due to politics and require market diversification - Customs and tax laws make equipment imports and leasing difficult and expensive - Tax laws not uniform, do not encourage transparency - Government direct production - Limitation to expanding production areas - Electricity outages impact access to water for refrigeration and production for some land.

Marketing needs can also be defined by the particular value chain and market opportunity. A common strategic thread is the need for more efficient, and recurrent, transactions between parties. So far, the project has been successful in building these relationships through value added infrastructure.

	Value Chain	Market Opportunity	Marketing Needs
Export Market	Export early onion	Market window in Russia (timing and efficiency)	Low cost rail shipping organized through key aggregation points
	Export juice concentrate	Supply as input to processors. Demand is not meeting supply.	Efficient processing of quality product in aseptic bags
	Export dried fruits, nuts	Tajikistan Wholesalers with existing marketing channels (dried fruit & nuts mixes)	Linkages between Khatlon producers and exporters
	Export apricots, grapes, and cherries	Niche first-to-market windows in Russia	Cold Chain investment in Cold storage to access refrigerated transport to maintain quality from field to market
Domestic Market	Domestic Off-season production of tomatoes	Import substitution (Uzbekistan)	Investment in hothouses/greenhouses to increase production. Market linkages between new producer groups and buyers. Improved quality
	Domestic apples, grapes, pomegranates, lemons	Store and sell at off-season price premium	Improved storage infrastructure
	Domestic cabbage, potato, carrots, onions	Store and sell at off-season price premium	Improved storage infrastructure

1.1 Marketing

Tajikistan products tend to occupy lower quality segments of the market, both domestically and in the export market. The project has invested in significant market research to help firms understand market requirements and current gaps and bottlenecks. One of the major bottlenecks is consistent quality. This is a challenge because it requires coordination among firms engaged in processing and export. There has been some success as two firms upgraded to HACCP quality. The work of the Export Association, established with the help of the project, is more fundamental as it has the membership, affiliations and commercial standing to be a main driver of quality improvements across multiple value chains. The project continues to support this association in its development, the promotion of quality standards, a more active approach to marketing Tajikistan products to new markets, and to lobby on behalf of agribusinesses for favorable trade and tax policies. With the Feed the Future shift to Western Khatlon, the project will continue to support investor groups to join the Isfara-based Export Association, or explore the opportunity of forming a new industry group.

The project supported a significant amount of **market research** to inform project activities and share with stakeholders. The following work was completed in Year III.

Study	Key Findings
Apricot Nursery Study	Supply is of seedlings is fractured and a reliable source of genetic material aligned with end apricot market demand is not readily accessible to producers
Early Onion Export Market in Russia	During the early onion window Tajikistan onions are the price leader in Russia

Tomato and cucumber hot house value chain	Tajikistan tomatoes occupy a midrange niche, with Uzbekistan tomatoes occupying the highest quality and Pakistan tomatoes the cheapest.
Bean Market Study	Significant volumes would be required to overcome price and proximity to market advantages enjoyed by Kyrgyzstan, Pakistan and India.
Peanut Market Study	Existing export market links for nuts and dried fruit are interested if domestic production can meet market price points.
Fruit Concentrate Market Study	Processors in Russia are unable to meet demand with domestic production and import significant volumes of concentrate. If domestic production can meet price and quality requirements, demand is significant
Onion Buyer needs assessment	Buyers will not trust farms to conduct quality control. Interest on the part of onion buyers to jointly address rail export issues.
AgSME partner financial systems assessment.	Accounting systems are inadequate for operations.
Input Dealer Accounting and Inventory systems Assessment.	Accounting systems are inadequate for work with international suppliers with the exception of one project partner wholesaler.

With respect to the implementation of **quality standards**, the project supported two “early adopter” processing firms to achieve HAACP certification in Year III. Training support was received from GIZ and BAS. One firm also received an investment grant to make needed upgrades required to obtain certification. One of the challenges is that *at the moment* markets do not *currently* require certification. If Tajikistan is to expand sales beyond these markets, or if in the likely medium-term, these market requirements shift then Tajikistan firms will be poorly positioned to compete with neighboring countries. It is critical that these agribusinesses recognize where the market is headed and make timely investments so they do not lose out on these opportunities. The project will continue to support early adopters, make readily available research on market trends, and support the capacity of the Export Association to play a promotional role in the long-term.

In year III, The Export Association was established on the initiative of 12 major exporting firms based in Isfara. This was facilitated by a project consultant who assisted the group to form consensus on the role



of the association and balance the governance structure between the smaller and larger members. The association was officially registered, and a director was hired, funded by member dues. The project provided a recommendation to the US State department SABIT program for the director to participate in training in the US specifically for association directors. The project worked with the association and attracted the support of Hilfswerk Austria to establish a brand symbol, print brochures

for members and establish a website. www.foodexport.tj Association members were brought to Khatlon and meetings arranged with farmers as well as with the local government in Shahrituz and Qabodiyon, to explore purchasing peanuts for export.

Trade promotion is an important element of market development. While some larger firms may have networks which represent them in Russia, other new and medium-sized businesses do not. The project supported several partners to attend the Agricultural Processing and Machinery Exposition and the World Food Exposition, which both took place in Moscow. These events identified sources and pricing of equipment, as well as information on buyers, market demand and competition in the Russian market. The project also developed and distributed a directory of fruit and vegetable buyers serving the Russian market. This document gives exporters useful contact information to market their produce. Trade promotion and marketing is increasingly important for agribusiness growth in Tajikistan, especially as

productivity gains are achieved. The project will continue to assist these firms in identifying buyers as well as provide training on export partners on how to more effectively market their products.

1.2 Value Added Investment

The project invested significant effort in developing a pipeline of investments for value added infrastructure. This process is important given the high leverage requirements of the project and need to target partners which are committed to adopting business models with will be competitive in the long-term and which are favorable to supplying farms. An example of this is Apricot and Company which was a joint-venture between an entrepreneur and group of lead farms that allowed for aggregation of fresh apricots needed to fulfill bulk sales contracts, making the most of Tajikistan’s comparative “early window” production advantage. Many other investments were in storage, particularly refrigerated storage. The project also supported two processing facilities which stand to become important mechanisms to off-take production as an alternative to the fresh market where prices can glut.

Organization	Description	Status
Apricot and Company	Refrigerated Pack House	Completed, results reported
Fozilov Aslam	Upgrade of heating systems	Completed, results reported
Soliev Hikmatullo	Upgrade of heating systems	Completed, results reported
BADR processing facility	Repairs to meet HACCP requirements	Completed, results reported
Imkom	Packaging Equipment	Completed, results reported
Davron	Slaughter facility	Under Construction
Pakhtakor	Onion Storage	Under Construction
Forex	Refrigerated Facility	Under Construction
Panjob	Refrigerated Facility	Under Construction
Safovat	Processing Facility	Equipment being sourced
Alisher Ganiev	Butcher facility	Equipment being sourced

Investment partners were identified in an ongoing process through meetings with local, district and regional government and outreach to farms over the course of six months. The system for investment grants is based on project experience with the pilot investment project (Apricot and Company) and work with the second tier investors (in table above). This process includes:

1. Initial environmental compliance assessment, approved by USAID, immediately following expression of interest by the potential partner.
2. Developing a construction plan to ensure that applicant obtains necessary permits and other documentation required by Tajikistan law, and the establishing of a monitoring/quality control system so the project is confident the firm abides by appropriate construction practices.
3. A financial plan and support by the project staff in applying for financing needed.
4. Development of a business plan to evaluate return on investment
5. Legal registration of partners establishing a new business entity. To access higher thresholds of grant support, investors must form joint-ventures with partial ownership of at least one farm.

The pilot investment project, Apricot and Company, demonstrated results during this year with an increase in sales of 108% over the base year exports. The second tier of investments has started to contribute to indicators and the final investment in the group is in the Feed the Future zone and will demonstrate results in year IV. The project is initiating work with a group of 16 potential investors in Western Khatlon, according to process above. Six of these potential investor groups are for similar

refrigerated storage facilities. It is interesting note that the project is aware of at least one other refrigerated facility which was built based on the demonstrated success of the Apricot and Company pack house. It is hoped that a growing recognition of the market opportunity and demonstrated return on investment will continue this commercial trend of financing storage infrastructure.

1.3 Improved Farm-Level Linkages

Most value chains in Tajikistan are fractured. Traders and farmers look at each sale as a onetime event between strangers, creating an incentive for dishonesty that handicaps the industry. Market demand is not communicated down to producers and buyers must support quality verification systems that absorb profits. In this environment, the agribusinesses serving markets are unable to effectively communicate their quality needs, and farms are ignorant of what the market wants or that farms can earn higher profits by meeting market needs. As the size of the production operations decrease, the more isolated the producer becomes and the more the producer becomes a price taker. Problematic value chains were addressed by the project actively working to bridge the gap between buyers and farms in the following ways: 1.) Open field days related to demonstration plots; 2.) Farm-Buyer stakeholder meetings.

Open Field Days bring together farms, buyers, representatives from financial institutions and input dealers to show the results of new productive technologies demonstrations. These events lay the foundation for follow-on voucher programs in finding partner farms and demonstrating the economic value of input packages. These included –

- Texas Early Grano Seed + Certified Input Packages in Qumsangir and Shahrituz
- Turkish Seed Planter in Jilikul
- Hothouse Certified Inputs, IPM and Pheremone Traps in Bokhtar

The project also organizes **stakeholder meetings** to help link buyers with farms prior to harvest. This is means to start price negotiations, make contacts and ensure farms are linked to markets. This year the project facilitated the following meetings –

- Early onion voucher recipients and buyers
- Tomato voucher recipients and processors
- There are sufficiently strong market linkages in place for apricots (both fresh and dried) where this sort of facilitation is not required, given the strong end market demand and interested buyers with cash and incentive to invest in downward linkages through advances and informal agreements.
- The dried apricot market also has a regular wholesale market where farms and buyers can link. Hothouse tomato farms have a night market during the rainy season, so there is limited need for project support.
- The hothouse vegetable market occurs every night during the season and also does not require facilitation until producers are able to move to the next level with sorting/grading/ and packaging.

With the Feed the Future focus on the Western Khatlon region, the project will have to invest significantly in promoting these linkages, establishing aggregation points and working through processors/storage facilities to strengthen repeated deal-making between farms and buyers. This is a more important factor given the characteristics of these value chains and the fact that farms are generally smaller and more isolated than farms in RRS or Sughd.

1.4 Improved Access to Finance

The productivity upgrades which the project is supporting to improve yields and quality at the farm-level are costly and place a higher burden on the household wallet. Perhaps more crucially, they require an up-front outlay that is out of sync with the household's typical cash flow reality. There is real need to establish financial mechanisms so that value chain actors can make timely and optimal investments.

At the same time, financial markets in Tajikistan are supply driven. Credit resources cannot meet demand, resulting in high interest rates. Since farm profits are dependent on comparatively higher volatile variables such as weather and markets, high interest rates further increases risk and depress demand. On the supply-side, financial institutions cannot meet market demand for credit even in the lower risk trade sector, so the opportunity cost for working with agriculture sector is very high. When financial institutions do lend towards agriculture, they attempt to address this risk through high collateral requirements. This is a problem as most agricultural enterprises have limited assets of value due to remote location and poor condition of buildings. Expanding credit into agriculture where financial institutions are less knowledgeable and risk is higher, requires three elements of risk mitigation: staff and systems to analyze loan repayment capacity; development of new loan products that meet the unique needs associated with agriculture; and additional strategies to reduce risk, such as partnering with value chain actors who can assist in the identification of creditworthy clients.

As the target value chains are fractured, there is little opportunity for buyer-led arrangements. The table below evaluates the three main value financing options for production credit. These are savings, working capital credit from a financial institution, and input credit from an agro-dealer. Each mechanism is analyzed in terms of the incentive, interest and capacity of the leading actor to provide the needed capital.

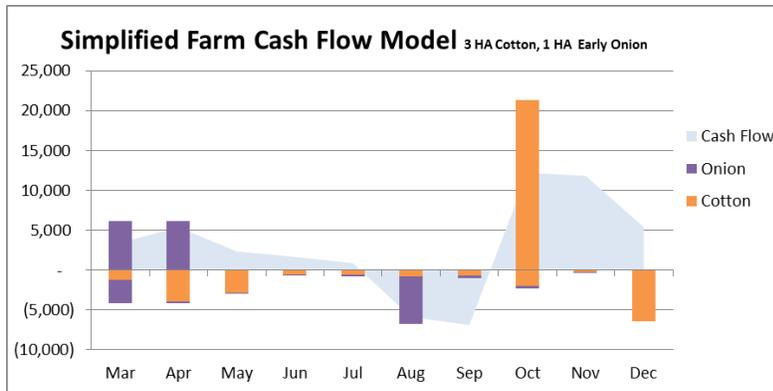
		Planned Savings	Financial Institution	Input Dealer
Incentive		High – Lowest cost option – especially if few other high return opportunities are available. If market linkage and knowledge is present, return on investment in new technologies is high.	Med – Agriculture represents majority of labor force and unbanked clients. Strategic importance to capture.	High – Farm financing is directly linked to own sales, therefore own profitability.
Interest		Med – Need to appreciate returns on investment of new technology, and that it makes sense to save for (or seek credit for).	Low – Little realized interest due to high opportunity costs vis-à-vis other sectors.	Med – Provide to family and friends on short-term. Not yet recognize as profitable service or how to approach (fear of unknown)
Capacity	Capital	Low – Farm cash resources are tied up with cotton harvest and poor money management.	High – Banks and MFIs are able to borrow from capital markets. Issue is opportunity cost (other attractive markets), risk/return calculation.	Low-Med –Difficulty securing credit on own – often need bank loan to enable lending.
	Knowledge	High – Farm understands ROI of technologies but is constrained by cash requirements of household and enterprises.	Med – Some FI's have clients in agriculture, but lend based on collateral. Limited knowledge of ag finance or cashflow analysis.	High –Know reliable farms who are linked to buyers, which is basis for screening.

	Product & Systems	Med – Farms have access to bank accounts but are reluctant to save in formal sector due to tax liabilities.	Med – Some products with flexible repayment terms. No systematic methodology to apply this.	Low – No established systems, product or experience in credit analysis.
--	-------------------	--	--	--

In terms of planned savings, the project provided **record-keeping** training to farms through partner NGOs. These trainings were helpful for farms to evaluate the cost and returns of improved production models and to understand the investment requirements of new input packages. Participation in this training was required for participants in the open field voucher program in Isfara. The project confirmed again that farmers are very resistant to attending such training. Farmers are not classroom learners. Field schools related to production are possible, but record keeping training needs to build from very basic concepts. Training in year IV will start with production and gradually enter record keeping with farms to address this issue. In addition, participation in demonstrations and open field day training will be a prerequisite for participation in the year IV early onion voucher.

The project also captured a wide array of crop budget data which was plugged into an Excel-based **cash flow analysis** tool which evaluates the financing needs of farms investing in different production plans. An initial training facilitated by financial consultant Lorna Grace, was provided to six financial organizations. Training of loan officers was also provided to two other financial institutions. While interest is high, the economic conditions still temper interest in agricultural lending. It is expected that this will be a gradual process of change as financial institutions continue to recognize a growing market opportunity and take incremental steps to shifting how they approach this market. The project will assist financial partners through ongoing mentoring and support as they continue adopt appropriate agricultural lending practices. Financial institutions must recognize agriculture, which employs 75% of the labor force, as a market segment they must learn to reach if they are to remain competitive in the long-term.

Financial consultant Lorna Grace met with input dealers to assess the potential to apply a system of providing **inputs on credit** to farms. Additional analysis, pilot design and training were planned for the summer, but USAID approval was postponed until 2013. Further data was collected through the voucher program that provided additional support for development of a dealer based risk and client assessment system that to enhance their ability to provide inputs on credit. This came out of the lessons learned from the early onion voucher program. Farms in Tajikistan utilize multi-cropping, funding the next crops planting with the sales of a different crops harvest. When the harvest is delayed, as it was this year for cotton, farms are unable to finance planting. The minority of farms that use credit cannot access additional credit as they have outstanding loans (to also be paid off with the harvest) and the financial system does not allow parallel credit. Dealers providing inputs on credit makes sense in such circumstances. An important consideration is that dealers do not have financial systems for assessing credit worthiness and determining risk. This year project activities experienced directly the difficulties farms face when experiencing a squeeze in their cash flow financing. Establishment of appropriate credit risk assessment systems by input dealers opens up an opportunity for them to increase sales while addressing a clear client need.

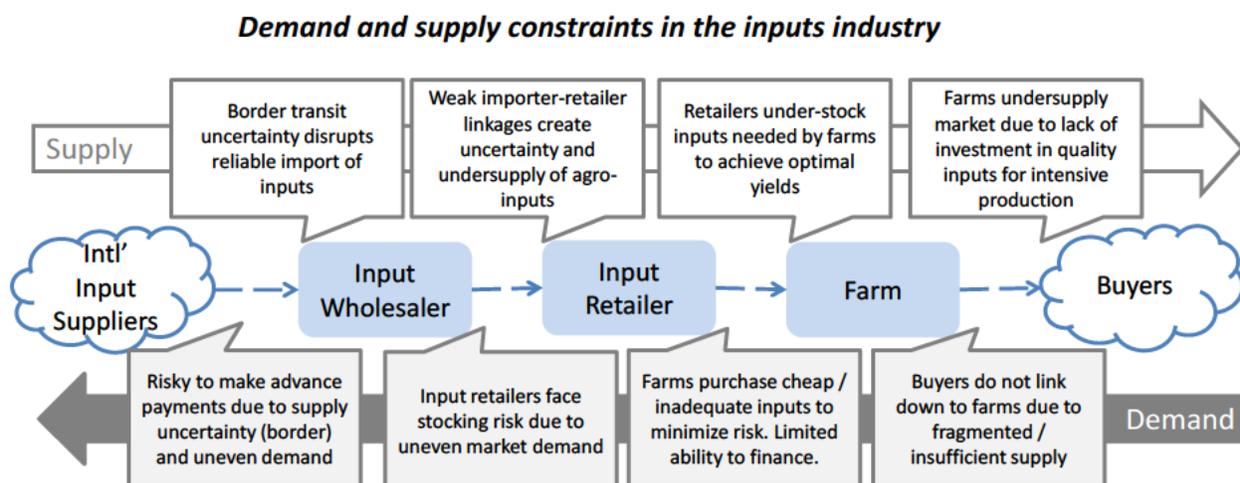


While there are many elements of a household cash flow, the simplified chart above illustrates the financing needs which results from the timing of expenses and revenues of a farm producing cotton and early onion. This assumes a farm has approximately 2/3rds of the capital needed to invest in the production model. What is interesting is that the financing need is very specific (tractor plowing and inputs for early onion) and the financing term is finite (only about 3 to 4 months). While farms reported difficulty in securing credit from a financial institution, the specific nature of this financing demand suggests a strategic role that input dealers can play in extending inputs on credit. This is just one case of a financial demand, but it is a relevant one given the focus on early onion and the fact that it reflects much of the feedback from early onion voucher recipients on the difficulty of purchasing early onion inputs until the revenues from cotton harvest were received.

Objective 2: Increased Productivity

The project supports the private sector to promote inputs, products and services which will improve farm productivity. Currently Tajikistan exhibits a typical cycle of limited investment, weak productivity and fragmented market access which has inhibited value chain growth. In order to break this cycle, private sector players must recognize where there are commercial incentives to make investments to take advantage of market opportunities. Farms must shift towards input-intensive production models which require more significant technical knowledge and cash investments. Input dealers must adopt more progressive methods of marketing, provide technical assistance and facilitate financing which will allow them to expand their sales to farms. Recognizing that the private sector is both the vehicle and intended beneficiary of interventions, the project carefully structured interventions to demonstrate opportunities and build the private sectors' capacity to pursue them. Most activities employ an element of demonstration that is aimed at helping actors evaluate the relative returns of upgrading products, processes and functions. Even with demonstration, oftentimes, actors are still reluctant to put their own capital at risk to make needed investments. In these cases, the project structures smart incentives which are designed to buy down the financial risk of such investments.

The project targets the input supply system as a key leverage point to facilitating adoption of new technologies which will improve production yields. This system faces fundamental challenges at multiple levels. At the demand-level, farms are cash poor and tend to utilize the cheapest inputs; they lack agricultural education; and they are distrustful of products in the market. At the supply-level, input dealers are few and the market is dominated by cotton groups that supply inputs on credit. The dealers that do exist lack agricultural background so they cannot advise farms and they sell only the cheapest goods due to both real and perceived market price sensitivity. Furthermore, there is a lack of productive equipment and services available to farmers. Farms without equipment must pay high fees and wait until the farms which own equipment have completed their field work first. Access to equipment is also proportional to the size of the farm, with large farms having equipment, and small farms without equipment. The graphic below illustrates some of the challenges of the input network.



The following table below provides further analysis of the opportunities and constraints for project interventions with regards to the input industry in Tajikistan.

SWOT analysis of input market in Tajikistan

Strengths	Weaknesses
<ul style="list-style-type: none"> • Agriculture is a major contributor to GDP and the industry involving the majority of the population. • Few Certified input suppliers active in the market, so competition is low. • Need for certified inputs is high • Demand is growing • Multiple crops on each field each year means the multiplier of arable land needing inputs is almost 1.9 	<ul style="list-style-type: none"> • Credit is expensive • Few retail input dealers. Fewer wholesale input dealers • Registration process is opaque. • Many farms do not realize the benefit of certified inputs • Weak regulation of counterfeit and smuggled inputs. • Production technical knowledge amongst farms is weak.
Opportunities	Threats
<ul style="list-style-type: none"> • Opinion leaders and early adopters understand the benefit of certified inputs • A few strong value chains exist which can provide profits that justify investment in production • Expansion of export markets will require quality standards that will require use of certified inputs. 	<ul style="list-style-type: none"> • Cotton system promotes production through input credit. • VAT difference with neighboring countries encourages smuggling and counterfeit products • Profitable use of certified inputs requires intensive production, including investment in mechanization which is weak. • Increased investment in production puts more of farms limited capital at risk

2.1 Increased Supply of Certified Inputs

International input suppliers are based in Central Asia, but none are based in Tajikistan. Wholesalers with the financial capacity to import inputs are few, and the majority import counterfeit and smuggled goods due to limited buying capacity by farms and wholesalers alike. Retail dealers are transient due to the season nature of the bulk of sales, with very few permanent retail outlets and also have limited buying capacity. Activities in year III focused on identifying partners (international suppliers, wholesalers, and retailers) and linking these partners together. Dealers were identified and provided with training (see below). Partners then traveled with project staff to Osh, providing them with an opportunity to network with each other, and **network with international suppliers**.

Wholesalers traveled with project staff to Almaty, Kazakhstan to meet with international suppliers and establish business relations. In addition, project staff traveled on to meet with international suppliers based in Tashkent, Uzbekistan. The results of these meetings clarified interest on the part of international suppliers, but concern about risk. To address this, international suppliers require either 100% prepayment of large consignment of product (often an entire rail car), or a transparent accounting system on the part of wholesalers and a history of reliable payment with the wholesaler to provide part of the product on credit. It was also clarified that engaging wholesalers through Tashkent is not advisable given that supply from Tashkent is not desirable due to perceptions that Uzbekistan discourages trade with Tajikistan.

Retailers were networked with wholesalers. This first occurred in support of the open field tomato voucher program in Isfara. This experience was repeated in Western Khatlon with two wholesalers supplying local retail input dealers with inputs in support of the early onion voucher. Participation in the early onion voucher required an advance payment of 15% on the part of retail input dealers to the

wholesalers. Wholesalers commented that this is the first time they have received payment in advance from retailers.

The project also conducted a survey of 35 input dealers providing information on the current state of the input industry. The report provided recommendations including documenting the registration process for new inputs, which was further confirmed as important by international suppliers. The report also recommended that the **financial systems of input dealers** be analyzed. A follow-on study was conducted which reinforced this need among input dealers. International suppliers confirmed that a transparent accounting system was a prerequisite for receiving inputs on credit. The project provided support to 4 retail dealers and 1 wholesale dealer to establish 1C accounting systems. Finally, one wholesale dealer received small grant support to expand his warehousing facilities. Three other dealers applied for support but could not meet environmental compliance requirements.

With the Feed the Future realignment, the project invested significant time in identifying new partners. No wholesale dealer was identified in the Western Khatlon region. To address this issue, the project supported two wholesale dealers in expanding their activities in Western Khatlon. Twenty retail and wholesale dealers were identified and this group received training on international supplies. Five of these dealers also received marketing training, in preparation for participation in the International Input Fair in Osh, Kyrgyzstan.

2.2 Knowledge of Agricultural Practices

The project supported demonstration plots to introduce certified inputs to farms and to facilitate linkages in the value chain. Successful demonstrations were followed by voucher programs, allowing first adopters to try the technology at a commercial level at a discount to create demand. Attempts to establish extension exclusively with dealers were modified based on experience and research.

Demonstration plots were established at the retail input dealer level.

- Hothouse tomato demonstrations in Bokhtar showing use of certified seed, pesticides, complex fertilizers and integrated pest management using pheromone traps
- Early onion demonstrations in Qumsangir and Shahrituz showing use of certified seed, pesticides, and complex fertilizer.

The demonstration plots formed the basis for the **voucher program**. The table below shows

Voucher	Regions	Recipients	Status
Apricot Production	Asht, Isfara, Konibodom, B. Gafurov	200	Y3 Reported
Late Onion	J. Rasulov, Zafarobod	85	Y3 Reported
Open field Tomato	Isfara	57	Y3 Reported
Hothouse Tomato Plastic	Bokhtar	20	Y3 Reported
Early Onion	Qumsangir, Qabodiyon	73	Y3 Reported
Early Onion	N. Khisrav, Shahrituz, Qabodiyon, Jilikul, Qumsangir, J. Rumi, Vakhsh, Bokhtar, Khuroson, A. Jomi, Yovon	290	Distributed, Y4Q3
Orchard Production	N. Khisrav, Shahrituz, Qabodiyon, Jilikul, Qumsangir, J. Rumi, Vakhsh, Bokhtar	200	Y4Q1 Distribution
Hothouse Tomato	Bokhtar, Vakhsh	40	Y4Q1 Distribution

All vouchers showed increased income and yield for participants over the control group. All vouchers except early onion showed increased income and yield for participants over 2011 levels. Yield and income was down for early onions as compared with the 2011 harvest due to a long winter and wet spring, that reduced yield and delayed harvest, but participants still showed higher yield and income results as compared with neighboring commercial farms.

The project attempts to engage input dealers to provide **extension services** have not yielded active results. While some dealers do provide in-store advice, none are willing to provide this as an embedded services to farms. This is partially impacted by the financing of extension services by the development community. GIZ hired two of the project input dealers (Abubakar and Sughd Agro Service Consulting) as providers of extension services. This opportunity offers immediate income, which makes it hard to convince agro-dealers that provided embedded services will in turn lead to increase sales. There may be some opportunity for the fee-for-service model which GIZ is support through its current subsidy. The project will engage outside technical support, a field agronomist partially financed by the input dealer, and partial payment of farms (50%) to provide extension services to voucher recipients.

Research of the GIZ/TAFF TAG extensions system showed that this system delivers services at an affordable price by concentrating extension work with primarily large cotton growing farms and with apricot producers, as well as bundling extension services with credit. The association of extension agronomists (Sarob) established under this system is looking at also providing inputs to their client farms. As such, the Project will attempt to engage Sarob as both a service provider of extension services and a wholesaler next year.

Recognizing that there are more profitable methods for input dealers to provide extension services, the project agreed with input dealers participating in the voucher programs to split costs with them. Input dealers will provide 50% of the salary of a field agronomist. The field agronomist will report to a service provider engaged by the project (potential partners include Sarob, SAS consulting, Agrondonish, and others). This system will be established for early onion, hothouse tomato, and orchard voucher recipients.

2.3 Production Investment

Increased income for farms also requires investment. Value chain infrastructure in Western Khatlon is almost non-existent and mechanization is estimated to be less than 50% of 1991 levels. The result of this stagnated productivity and low yields and sales. To address this constraint, the project expanded the tractor loan program based on the success of the pilot targeting onion voucher recipients in Western Khatlon. Pilot projects were successfully concluded with investment in greenhouse facilities. Expansion of the tractor loan product was recommended in the report of the project audit conducted by the Regional office of the Inspector General. Approval to support partner farms purchase 100 tractors using a combination of cash, credit and an incentive grant was received from USAID in July 2012. The project aligned the tractors with the early onion voucher program and established participation in the voucher program as criteria for receiving support. Farms were educated on the program at all farm events (Demonstration open field days, training, information meetings, etc.), and clients of partner financial institutions (Agroninvestbank, IMON, FMFB, Eshkata bank, TSB Bank) and IFC also participated. Creation of a cash flow analysis – a critical element of farm management as well as an effective agricultural lending methodology - was also established as selection criteria for receiving project support. Farmers interested in purchasing a tractor were trained by the project in cash flow analysis so

that they could accurately evaluate their cash needs over the course of the season and their ability to repay the loan.

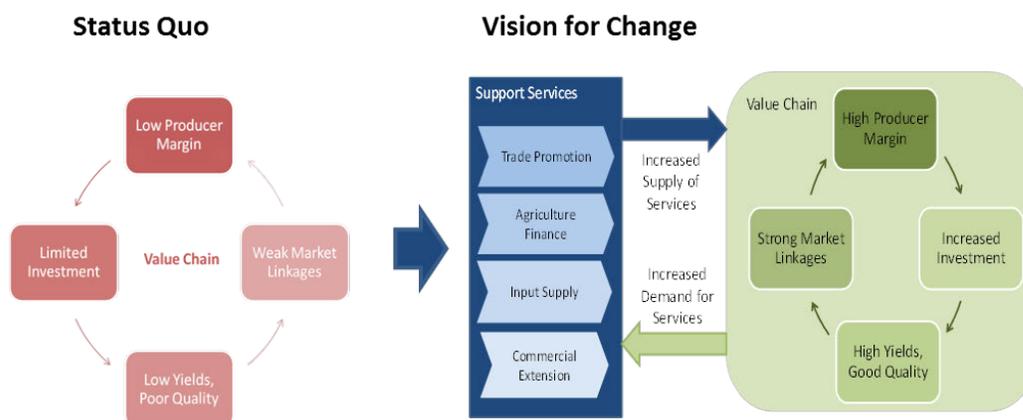
Two farms outside Dushanbe received support to upgrade their greenhouse facilities. Both Fozilov Aslam and Soliev Hikmatullo had existing greenhouses that needed upgrades to their heating systems in order to access the lucrative winter tomato market in Dushanbe. Tomato prices, which dip to below 1 somoni/kg (20 cents) during summer, sell for 16 somoni/kg (over \$5) during the winter peak. These two farms report substantially increased income and yield due to these upgrades. These results were a pilot project which establish systems and gathered data for additional grant support for greenhouses in Western Khatlon to come in Year IV.

Lessons Learned

Targeted efforts are needed to effectively expand marketing opportunities. Tajikistan's strongest market opportunities include both domestic and international buyers. This includes Russia, Kazakhstan and Europe where there are market segments that will sustain the growth of value chains if they are competitive. The product requirements for these markets differ in terms of timing, quality and quantities demanded. The project thus plays a key role as facilitator, in exploring the unique dynamics of these opportunities and sharing findings with all interested parties. To note, the governance structures of these value chains are largely market-based, meaning that there are few, if any buyers, willing to invest in backward linkages (as compared to value chains with more vertically integrated structures). Tajikistan producers, processors and exporters must therefore directly compete with other Central Asian countries.

Creating points of aggregation around transport and storage infrastructure will unlock strategic export markets. Due to the market dynamics mentioned above, transportation plays a decisive role in any value chain strategy. Fresh produce serving high end market windows is able to command a price that makes the use of refrigerated International Road Transport (TIR) shipping profitable. This includes fresh fruit, notably apricots, grapes, and cherries. Shelf-stable products are able to use lower cost rail transportation. This includes dried fruits, nuts, and concentrate shipped in 200 liter aseptic bags (juice concentrate and tomato paste). In addition, early onions utilize both low cost rail shipping and target an early market window to command a high price. Recognizing how the right transport linkages and strategically located storage can enable opportunities that will benefit all actors in the value chain, the project must continue to identify opportunities to catalyze private sector investment and improvements in these critical junctures. Only by helping the change driver firms to recognize this potential will the project's facilitation efforts be successful and sustainable.

Productivity increases require increased investment in productive technologies. Productivity is a recurring constraint across all value chains. In order for value chains to take advantage of the market opportunities described above, farms must make investments in new technologies which can supply products demanded by these segments. Most farms and rural households are currently locked in low-investment, low-yield and low-margin production models. This has a systemic impact on the competitiveness of the entire agriculture sector, limiting commercial incentives for exporters to pursue new markets, processors to invest in value-addition, dealers to stock quality inputs and financial



institutions to pursue agricultural lending. In order to meet the development objectives of the Feed the Future program, all three elements (limited investment, low productivity, weak market linkages) must be addressed to increase farm incomes. But crucially, support service providers must also be engaged to the point at which they recognize a commercial incentive to respond to value chain demands which will sustain the continued transfer of technologies, trade promotion and investment needed for firms to remain competitive.

The project's approach to address productivity constraints is similar across the value chains, and has proven successful. First, to convey the appropriate market signals which will shift productivity models, the project is using a mix of smart subsidies, technical assistance and direct facilitation of marketing, a combination that is resulting in the desired changes and a resulting demonstration effect with neighboring farms. This includes voucher programs to cost-share agro-inputs to drive demand for certified inputs; tractor grants to cost-share in farm investments as a complement to commercial equipment loans; stakeholder meetings to bring together farms and buyers; and international supplier supported demonstrations to convey best practices. These interventions have proven successful in demonstrating that high productivity models will increase farm incomes and improve the supply chains of processors and exporters. Second, to sustain on a commercial basis the services that help farms continue to benefit from intensive production models, the project is supporting strategic private sector actors. This includes a mix of cost- and risk- sharing arrangements with exporters, processors, input dealers, equipment suppliers and financial institutions to provide new products or services.

Support services are vital to upgrading to higher-risk, higher-return production models in ways that ensure self-reliant market systems. Deficiencies in these service markets require a focus on key leverage points to encourage provision of services where the "traditional" mechanisms are failing.

Quality standards and trade promotion – Currently Tajikistan products are viewed as low quality in export markets (primarily Russia). Quality standards and certification are not required by the market at this time, but expansion out of Russia and mitigating political risk from border closings requires agribusiness to work towards quality certifications. These require a medium to long-term perspective, which is not easy for individual firms to take. A dedicated, commercially-oriented institution is often the most effective means to drive broader, sector-wide change. The issue is nascent in Tajikistan but interest is evident amongst AgSME partners.

Input supply and extension – Certified input provision is severely constrained in Tajikistan due to registration legislation which does not align with the current capacity of the Tajikistan government and lacks clear regulations. Attracting international suppliers and certified inputs requires a transparent path to registration currently absent in the country. Combined with the relatively small size and weak buying power of the market, it is easy for international suppliers working in the area to concentrate efforts elsewhere. Furthermore, the absence of an extension sector increases the risk for farms when using certified inputs, as they are unaware of the proper technology to make optimum use of them. There are multiple options in terms of potential extension services: linking extension systems with international suppliers, all of whom are willing to provide technical transfer, is one potential win/win/win: international supplier, extension provider, and farmer all benefit.

Financial services - The final supporting market that is key to enabling value chain growth and improving competitiveness is financial services. Farms and agribusinesses are starved for capital due to larger systemic financial sector constraints, leading to underinvestment at every level of the value chain. Given that many of these constraints are beyond the scope of this project, the project has to focus on what

can practically be done to change the equation of risk. Most critically, lenders need to develop and offer appropriate loan products and apply cashflow analysis-based methodologies, and input dealers must help facilitate or provide financing of inputs during critical periods. Equipment suppliers have already proven effective in enabling equipment financing. With growing linkages, the private sector can serve as a key point to lower risks and costs commonly associated with agriculture lending, so as to ensure the liquidity needed to invest in upgrades and improvements throughout the value chains.

Indicators

Indicator 1 & 4: Farm Income and Yield

Open Field Tomatoes

Comparison with neighboring farms growing similar sized plots as a control shows double the yield (104.29%) per hectare among voucher recipients with much greater income (203.17%). This indicates that not only quantity, but the quality of the tomatoes were significantly better.

Farm Income per hectare comparing 2011 to 2012 earned from open field tomatoes increased 61.02%. The greater increase in income over the increase in yield is further evidence that the quality of their product increased. Gender data is distorted, as out of 77 participants, only 2 were women.

2011 v. 2012 Reporting		Men		Women		Total	
		2011	2012	2011	2012	2011	2012
Yield/Ha	Average	25,862.64	32,376.39	40,500.00	27,500.00	26,527.97	32,154.73
	% Change		25.19%		-32.10%		21.21%
Income/Ha	Average	11,694.38	19,499.92	15,547.00	10,975.00	11,869.50	19,112.42
	% Change		66.75%		-29.41%		61.02%

2012 Comparison	
Control	Clients
15,846.15	32,372.38
	104.29%
6,185.58	18,752.53
	203.17%

Hothouse Tomatoes

Comparison with the control and with the results of the voucher recipients for 2011 show consistent increase of roughly 27.66% for yield per hectare and 29.17% for income per hectare. The increase in income is greater when compared with the control group (42.85%) indicating this group of farmers are early adaptors and better farmers. It is important to note that the change for hothouse production was only as relates to improved plastic provided through a voucher program. This plastic is thicker, reducing costs in the long term as it does not require replacement as often and retains heat better, a critical factor in hothouse production where the structure must use solar energy to protect plants. In addition, these farms are near the demonstration plot and benefited from the technical support provided through the demonstration.

2011 v. 2012 Reporting		Men		Women		Total	
		2011	2012	2011	2012	2011	2012
Yield/Ha	Total						
	Average	29,503.70	37,370.14			29,503.70	37,370.14
	% Change		26.66%				26.66%
Income/Ha	Total						
	Average	52,120.37	67,326.39			52,120.37	67,326.39
	% Change		29.17%				29.17%

2012 Comparison	
Control	Clients
26,666.67	39,350.66
	47.56%
48,333.33	69,046.05
	42.85%

Early Onion

Average yield and income as compared to farms in the region growing early onions commercially (≥ 1 hectare) showed better yield, and better income. Income levels increased more than yield over the control group. The difference may be due to certified inputs enabling voucher farm fields to be more resilient with harvest ready earlier and quality higher than traditional production methods.

Never the less, results this year were lower than last year. With a long winter and wet spring, the onion harvest this year was significantly reduced as compared with 2011 harvest. This is reflected in our voucher recipients' yield per hectare (-21.11%) and income per hectare (-30.92%) (a factor of lower yield plus a late harvest when prices had already started to decline.). Feedback from farms was mixed with some farms reporting strong yields, and some reduced yields. In addition, some farms reported that seed genetics was mixed.

Only one participant surveyed was a woman led farm. This explains why the gender data significantly deviates from the norm as it is comparing 1 with the entire population surveyed.

2011 vs. 2012 Reporting		Men		Women		Total		2012 Comparison	
		2011	2012	2011	2012	2011	2012	Control	Clients
Yield/Ha	Total								
	Average	29,754.71	23,807.45	60,000.00	32,000.00	30,398.23	23,981.76	18,666.67	23,981.76
	% Change		-19.99%		-46.67%		-21.11%		28.47%
Income/Ha	Total								
	Average	30,193.62	20,455.08	18,000.00	31,000.00	29,934.18	20,679.44	13,931.67	20,679.44
	% Change		-32.25%		72.22%		-30.92%		48.43%

Late Onion

Average yields for late onion farms are high with an average yield above the control group of 58.41%. Higher income per hectare of 65.24% over the control indicates that farms also received higher price. Results were stronger in J. Rasulov. Zafarobod farms reported some mixed genetics from the seed, which is normal for locally produced seed, but even in the difficult region of Zafarobod where water access is unreliable and soil quality is low results were positive and the best performing farms were able to achieve 50 tons/hectare.

NOTE: The project facilitated a meeting between the Zafarobod farms and the seed supplier. The supplier agreed to provide the farms with free seed for this season in compensation for the mixed genetics of the seed and the farms agreed to sell the harvest to the seed supplier. A relationship between farmer and input dealer beyond one time purchase of an input with no guarantee is unprecedented and a significant accomplishment for the project.

2012 harvest compared to 2011 shows increased yield per hectare of 24.95% and increased income per hectare of 17.21%. This is particularly good yield results given that the weather for onion production was poorer this year as compared to last year. The increase for income is less than the increase for yield, indicating that prices are lower this year compared to last year.

Figures for women show significant increases, but this is distorted due to the very low number of women led farms participating in the voucher program.

2011 vs. 2012 Reporting		Men		Women		Total	
		2011	2012	2011	2012	2011	2012
Yield/Ha	Total						
	Average	33,693.79	41,852.87	6,666.67	30,000.00	33,386.66	41,718.18
	% Change		24.22%		350.00%		24.95%
Income/Ha	Total						
	Average	32,730.65	38,191.38	6,333.33	22,400.00	32,430.68	38,011.93
	% Change		16.68%		253.68%		17.21%

2012 Comparison	
Control	Clients
26,115.56	41,369.66
	58.41%
22,814.17	37,697.19
	65.24%

Apricots

Comparison of voucher farms with nearby commercial sized orchards (≥ 1 ha) shows a significant impact from the use of certified inputs. Yields were 40.70% higher, and income was 27.35% higher. Based on project experience the reason that farms have a lower increase for income/hectare as compared with yield is because of the difficulty farms experience managing the volume of work during harvest season required to achieve the highest quality. As yields increase, harvest management system often cannot keep up. This is an opportunity for future projects working in Sughd region. This applies also to Western Khatlon, where the limited apricot orchards are not utilized to their full potential.

Analysis of the 2011 to 2012 changes for yield and income, taking into consideration the relatively smaller but significant differences with the control, indicate that the harvest in 2012 was much better than the harvest in 2011 with farms showing significant increase in yield per hectare, 183.94% and a corresponding increase in income per hectare, 168.52%. Again the lower increase in income as compared with yield reflects the difficulty farms experience in managing post harvest handling. As volumes go up, support cannot keep up and the production beyond farm capacity ends up as lowest quality product, pulling down the average price received.

2011 v. 2012 Reporting		Men		Women		Total	
		2011	2012	2011	2012	2011	2012
Yield/Ha	Total						
	Average	1,362.84	3,933.86	1,474.74	3,900.31	1,383.31	3,927.72
	% Change		188.65%		164.47%		183.94%
Income/Ha	Total						
	Average	4,429.95	11,985.94	4,273.47	11,070.92	4,401.32	11,818.56
	% Change		170.57%		159.06%		168.52%

2012 Comparison	
Control	Clients
2,953.61	4,155.67
	40.70%
10,029.52	12,773.04
	27.35%

Indicator 2: AgSME Sales

AgSME Sales Year 3					
	Q1	Q2	Q3	Q4	Total
Beef	70%	155%	31%	13%	54%
Apricot			74%		74%
Onion	33%	-45%	31%		12%
Tomato	0%		2%	24%	10%
Multiple		139%	36%	57%	77%

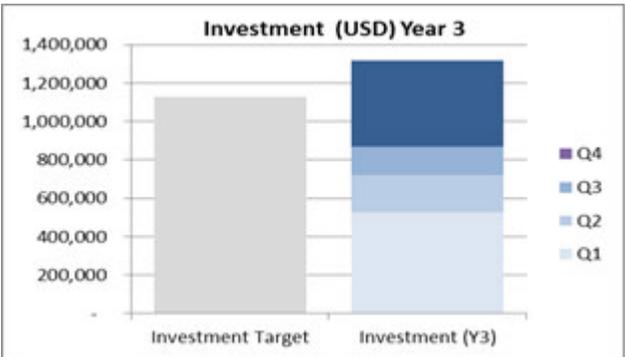
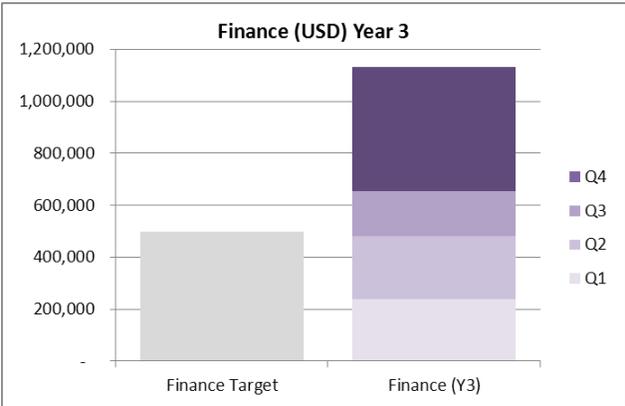
RRP	136%	67%	27%	1%	34%
Sughd	25%	29%	37%	55%	37%

Total	36%	31%	36%	45%	36%
--------------	-----	-----	-----	-----	-----

Input Dealer Sales Year 3					
	Q1	Q2	Q3	Q4	Total
Sughd	167%	61%	5%	18%	29%
RRP	48%	5%	28%		14%
Khatlon		26%	42%	28%	36%

Total	162%	41%	40%	20%	31%
--------------	------	-----	-----	-----	-----

Indicator 3 & 5: Financial Transactions and Investment



Indicator 6: Best Practice Adoption

#	Best Practice Adopted				
1	Apricots	Pesticide	17	Mechanization	Tractor Use
2		Fertilizer	18		Planter Use
3		Pruning	19	Input Dealer	Embedded Extension
4		PHH	20		Demo Plots
5	Beef	Feeding	21		Certified Inputs
6	Onion	Seeds	22	AgSME	Pesticide Safety
7		Pesticide	23		Governance
8		Fertilizer	24		Farm Investment
9	Tomato	Seeds	25		HAACP
10		Pesticide	26		Cold Storage
11		Fertilizer	27		Packaging
12	Greenhouse	Plastic	28	Association	Governance
13		Heating	29	Finance	Equipment Product
14	Watermelon	Pesticide			
15		Fertilizer			
16		Plastic			

In addition to best practices adopted from the previous year, in Year 3 the project added on apricot production and hothouse tomato production best practices. Tractor mechanization and planter use was also adopted by beneficiary farms. Input dealers expanded use of demonstration plots and certified inputs. Apricot started the first joint-venture model with supplying farms, improved cold storage, grading and sorting, and along with Badr, were HACCP certified. Imon and Eshkata began linkages with equipment suppliers for the tractor loan product.

Indicator 7: VC Actors with Improved Quality

Value Chain Actors with Improved Quality Practices				
Actor	Year 1	Year 2	Year 3	Total
Apricot Farm	0	153	75	228
Input Dealer	0	0	9	9
AgSME	0	0	3	3
Total				240

Apricot farms include 153 farms from the 2011 voucher program which demonstrated improved post-harvest handling practices that earned higher prices. In year 3, IMKOM reported sales of packaging to an additional 75 apricot farms. The project worked with 9 input dealers to source certified inputs. Additionally the project has worked with three agribusinesses on quality. Apricot and Company upgrades quality refrigerated storage and received introduction HACCP certification, Badr received assistance with Kaizen and HACCP, and IMKON upgraded packaging supplies, improving packaging for 75 agribusinesses.

U.S. Agency for International Development

Central Asia Regional Mission

41 Kazibek Bi Street

Almaty, Kazakhstan 050010

Tel: (+7 727) 250-76-12

Fax: (+7 727) 250-76-35

<http://centralasia.usaid.gov>