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# USAID AGRICULTURAL VALUE CHAINS (AVC) ACTIVITY

**JUNE 1, 2015 – SEPTEMBER 30, 2016**

**JULY 31, 2015**

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# USAID AGRICULTURAL VALUE CHAINS (AVC) ACTIVITY

**YEAR 1 WORKPLAN (FINAL DRAFT)**

**JUNE 1, 2015 – SEPTEMBER 30, 2016**

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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or<sup>3</sup>the United States Government.



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# ABBREVIATIONS

20/20DC	20/20 Development Company
AA	Acquisitions and Assistance
ALP	USAID-Agricultural Linkages Project Plus
AMEP	Activity Monitoring and Evaluation Plan
AVC	USAID-Agricultural Value Chains
AWE	Uzbekistan Association of Women Entrepreneurs
BEO	Bureau Environmental Office (USAID)
CAR	Central Asian Republics
CE	Categorical Exclusion
CO	Contracting Officer
COP	Chief of Party
COR	Contracting Officer Representative
EPF	Small Business and Private Entrepreneurship Export Promotion Fund of Uzbekistan
EU	European Union
FAS	Field Accounting System
F&V	Fruits and Vegetables
FY	Fiscal Year
GAP	Good Agricultural Practices
GCCA	World Food Logistics Organization/Global Cold Chain Alliance
GIS	Geospatial Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GOU	Government of Uzbekistan
HACCP	Hazard Analysis and Critical Control Points
ICT	Information and Communications Technology
ISO	International Standard Organization
IEE	Initial Environmental Examination
IT	Information Technology
MAWR	Ministry of Agriculture and Water Resources

ME&L	Monitoring, Evaluation, and Learning
MEVA	Mobile Extension Value Added application
MOU	Memorandum of Understanding
PERSUAP	Pesticide Evaluation Report and Safe Use Action Plan
TashSAU	Tashkent State Agrarian University
TBD	to Be Determined
TOR	Terms of Reference
TOT	Training of Trainers
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UzRIVMPG	Uzbekistan Research Institute of Vegetables



# EXECUTIVE SUMMARY

DAI is proud to be chosen to implement the USAID/Uzbekistan Agricultural Value Chains (AVC) project, and is pleased to submit this work plan for the period of June 1, 2015 to September 30, 2016.

The AVC Activity supports Development Objective #1 under the RDCA – Expanded Diverse and Competitive Trade and Markets. Specifically, the Activity will support intermediate Result (IR) 1.1 – A More Diverse Private Sector, and IR 1.2 – Enhanced Agricultural Competitiveness and Food Security. In support of the Development Objective, the AVC Activity will seek to: (1) create employment opportunities; (2) improve incomes; (3) increase fruit yield and quality; (4) increase packed and processed output; (5) increase targeted fruit and vegetable exports; (6) link USAID’s producers and processors to international markets; (7) strengthen relationships between educational institutions and the private sector.

Immediate work activities will pertain to the administrative and financial program actions necessary to accomplish a quick project start-up, including renting new office space; procuring office equipment and furniture; hiring local staff personnel, establishing bank accounts, acquiring and installing internet and communication services; and proceeding with the project registration process.

Simultaneously, based on the knowledge and accomplishments reached in the two previous USAID funded agricultural value chain projects AgLinks and AgLinks Plus, also implemented by DAI, the AVC Activity leadership will begin to select and address the analysis and assessment of chosen commodity value chains to determine the necessary technical interventions required by all stakeholders to reach and/or exceed the indicator results mentioned in each of the four (4) project components. The AVC Activity work will be implemented through four Components that are linked into a single holistic system. Increasing employment and incomes for F&V value chain participants requires different but mutually reinforcing initiatives that will be implemented according to the four Activity components, which are:

- Component 1: to improve the quality and volume of agricultural production;
- Component 2: improve post-harvest handling and production;
- Component 3: facilitate market linkages;
- Component 4: link educational institutions with private sector demand.

Preliminarily, DAI has chosen the following agricultural value chains for assessment, including for both fresh and processed markets:

1. Grapes (Table and Raisins)
2. Cherries
3. Apricots
4. Peaches
5. Plums
6. Apples
7. New fruit crops – melons, berries
8. High Value Vegetable crops – Tomatoes and Onions

The value chain assessment will include investigation of conducting innovative pilot projects that will involve risk-taking for identifying promising new high value horticultural products, either fresh and/or processed, such as strawberries, asparagus, and medicinal and aromatic plants.

Additionally, the project leadership will begin the necessary efforts to identify and contact several agricultural universities and secondary specialized colleges (vocational colleges) to discuss the implementation of assistance to these institutions to broaden their capacity and capability to assist in the delivery of selected technical assistance and training programs. Preliminarily, the AVC project has identified certain educational institutions as possible implementing partners for Component 4, with pertinent details mentioned in that component section.

Finally, two of the most important activities that will be conducted during the start-up phase are related to obtaining project registration by DAI for the AVC activity, that will enable the project to more efficiently represent the AVC activity among stakeholders, and the signing of a Memorandum of Understanding with the Ministry of Agriculture (USAID/MAWR/DAI) that will officialize and summarize the working relationship for the project with the various GOU agencies, institutions, and ministries. An important aspect of this MOU is to enable the AVC to import goods and services duty and tax free.

# RISKS AND MAJOR ASSUMPTIONS

## **MEMORANDUM OF UNDERSTANDING BETWEEN USAID AND THE GOU**

DAI will be pro-active in the implementation of the AVC activity, using its' proven reputation in Uzbekistan as an efficient partner in implementing USAID programs. We expect that USAID will use its' diplomatic capacity for facilitating the AVC program implementation. We anticipate that the Government of Uzbekistan will sign a Memorandum of Understanding with the USAID and DAI that will enable DAI to formally launch the Activity in Uzbekistan by no later than September 2015. This is a new process that might present unexpected issues that could impact or delay some of the activities but hopefully working together these can be minimized. Mutual support among the stakeholders will aid in moving forward as quickly and efficiently as possible, as to enrich the experiences of all parties.

DAI seeks USAID and MAWR clearance to begin the necessary field work to conduct value chain assessments prior to the signing of the MOU. No field activities can be conducted until the AVC Activity has received clearance from the appropriate government institutions. This matter could delay implementation of AVC activities until the beginning or middle of FY 2016.

## **REGULAR SEASONALITY**

AVC Year 1 Work Plan assumes regular seasonality for all target AVC value chains. The coldest months of the calendar year are December through February, with the year's major frost occurring in February. The blooming season and harvest season for the target crops will occur as expected (beginning in April). The unusually warm winter followed by an unexpected frost in March 2015 killed the early blossoms and disrupted the harvest of most major F&V crops. AVC assumes that this was a one-off event and will not re-occur in the Activity years. (See Annex 1: Uzbekistan Fruit and Vegetable Harvest Calendar.)

## **AVC WILL RECEIVE SPECIAL STATUS TO BE ALLOWED TO IMPORT GOODS, TOOLS AND EQUIPMENT DUTY-FREE.**

AVC expects that completion of the DAI project registration will automatically grant "duty free/tax waivers for all imported goods and equipment. We assume that USAID will work with the Government of Uzbekistan to facilitate this process when and if necessary. Such status will allow AVC to conduct its tasks as planned without major procurement disruptions.

## **STABLE FOREIGN EXCHANGE AND EXPORT MARKETS**

AVC assumes relative stability in the foreign exchange and export markets. The Activity assumes that currency fluctuations that affect exports from Uzbekistan (similar to the Russian rouble losing value against the dollar – main exchange currency in Uzbekistan) will not severely disrupt the Activity's tasks.

## **AVC WILL BE FUNDED ACCORDING TO COST SCHEDULE AS OUTLINED IN THE CONTRACT**

AVC assumes that funds for project implementation will be obligated as outlined in the cost schedule of the contract (Clause B.4.). We anticipate that availability of funds will not constrain the timing of project activities as outlined herein.

## **STABLE AND FAVORABLE HORTICULTURAL SUBSECTOR ENVIRONMENT**

AVC assumes that the GOU will provide a stable policy environment that will allow for the unhindered production and sale of fresh and processed fruits and vegetables that will encourage additional investment in the production, post-harvest handling and sales, especially for the export markets. We also assume that AVC stakeholders will cooperate with the AVC Activity.

[REDACTED]

[REDACTED]

[REDACTED]

## **CENTRAL ASIA REPUBLICS (CAR) ACQUISITIONS AND ASSISTANCE (AA) OFFICE CLOSURE**

DAI was informed on June 18, 2015 that the CAR Acquisitions and Assistance (AA) Office would be closed from July 15-September 30<sup>th</sup>. Accordingly, DAI prepared and submitted travel approval requests to cover all anticipated travel through the October 22 prior to the July 15<sup>th</sup> closure. The October 22 date accounts for the required three week notice for international travel approval requests. Although the AVC team has done its best to anticipate and prepare for project needs, it is possible that additional needs will arise during the closure period. Given that the AA Office closure falls during start-up phase of AVC implementation, we hope that an exception to the closure can be made in the event that a time-sensitive issue that requires CO approval or input arises.

# OPERATIONAL START UP

DAI will implement a rapid and effective start up, mobilizing a home office team and essential local staff to establish an office and initiate required steps to formalize the project and begin implementation. Operational start up tasks are presented below, and included in the Gantt chart found in Annex 2.

## GENERAL AND ADMINISTRATIVE

**Start-Up Team:** DAI has, and will continue to mobilize a Start-Up team that includes DAI staff with significant tenure and relevant experience. The start-up team includes the following people: Kat Cooley, Startup Manager and subsequent Project Manager, Rados Dabetic, Start-Up Operations and Procurement Manager, Misha Voronenko, End Market Specialist and DAI Technical liaison to the project, Slobodan Zivkovic, IT Systems Specialist, and Vahe Sahakyan, Field Accounting Systems (FAS) Specialist.

Start-up assistance will occur in two installations, the first as soon as possible after the contract start date, and the second immediately following successful procurement of project Information Technology (IT) equipment. The rationale for this phasing is because the local server, computers, and other equipment must be in possession of the local AVC team before it can be successfully installed and configured, and the FAS program can only be installed once the local area network is established.

**Ongoing Management Support from DAI Home Office:** As AVC transitions from the start-up phase to regular project implementation, DAI will continue to provide managerial and administrative support from the Home Office. DAI has configured its home-office based support team to consist of a core team- the Project Manager, Associate, and Contracts Specialist- which taps other corporate resources on an as-needed basis. AVC will be supported by Project Manager Kat Cooley, who was also the Project Manager through the final months of the predecessor AgLinks Plus Project, and Dan Rathbun, DAI's Project Team Director for Economic Growth on the Asia Team. Mr. Rathbun also served in this role on the ALP Project, so is familiar with implementing environment in Uzbekistan and the project team. Ms. Cooley will be supported by a DAI Project Associate, Contracts Specialist, an in-house Procurement Specialist, and others on an as-needed basis.

**Meetings with USAID and Formal Kickoff:** Based on direction from USAID, the AVC team is preparing to have a formal project kick-off meeting with the USAID CO, COR, and other key team members during the third or fourth week of August, 2015. In the meantime, the field team has had several interactions with the COR and other representatives from the USAID Uzbekistan Office to gain a better understanding of USAID's technical expectations, to work collaboratively towards Project Registration, and provide updates on AVC Project Start-Up.

**Office:** The start-up team and local staff have identified a project office that is suitable for AVC. The project address is: Tashkent city, Yakkasaroy District, 104A Kichik Beshagach Str., 3<sup>rd</sup> Floor.

The office is in a convenient location, it features a sufficient management suite, a meeting room, and a large workspace for the technical team. The office comes equipped with a large safe, furnishings, and security, which will afford some cost savings to USAID.

The AVC team occupied a portion of the new office space beginning on July 1, 2015, and will occupy the entire office beginning August 1, 2015.

## REGISTRATION AND LEGAL ASPECTS

Possibly the most significant task associated with project start up is establishing formal relations with the Government of Uzbekistan and appropriate ministries. In the case of AVC, the project will fall under a Memorandum of Understanding (MOU) between the GOU represented by the Ministry of Agriculture and Water Resources (MAWR), and the US Government, represented by USAID. DAI is working collaboratively with USAID to support the establishment of the MOU. Although we estimate that the MOU will be executed in October or November, 2015, the complex and multi-party nature of the document, makes it difficult to project this date with certainty. DAI is requesting clearance from USAID and MAWR to meet with project stakeholders and beneficiaries prior to the finalization of the MOU.

In addition to the MOU, the AVC Project must also be registered with the Special Committee under the Cabinet of Ministries. This registration request should be submitted by MAWR. DAI is working collaboratively with USAID and MAWR to pursue project registration. The Deputy Chief of Party Mr. Asror Nazirov is leading the effort to obtain project registration. Throughout June and July, the field team worked with USAID to gain clarity on the Project Registration process and requirements. USAID will facilitate a meeting with MAWR during the last week of July to discuss preliminary steps towards project registration. Project registration will enable AVC to import needed materials for project implementation duty free, and enable the project to have an official presence in Uzbekistan.

## PERSONNEL

DAI will onboard expat and local staff in phases, corresponding to the needs of project implementation and management. An organizational chart depicting staff organization and reporting relationships is provided in Annex 3. This organizational chart has been modified to reflect the phased onboarding of local staff.

### KEY PERSONNEL

As soon as possible after the contract was finalized, DAI began to reach out to key personnel to confirm their availability and begin to mobilize the team. Table 3, below, summarizes the timing of mobilization of AVC Key Personnel.

**Table 3: Mobilization of Key Personnel**

Title	Name	Mobilization Date
Chief of Party	Dr. Charles May	1-Jun-15*
Deputy Chief of Party	Dr. Asror Nazirov	8-Jun-15
Monitoring, Evaluation, and Learning Director	Ms. Jumagal (Elena) Abdramanova	8-Jun-15
Component 2 Team Leader and Environmental Officer	Mr. Sunnat Djalalov	8-Jun-15
Senior Marketing and Export Advisor	TBD	August, 2015

Dr. Charles May was available in country on June 1. Unfortunately, due to family bereavement, a significant medical need, and a planned annual leave, Dr. May and his family returned to their home of residence in the United States on June 10, 2015. Dr. May will return to Uzbekistan on or around August 10, 2015 to resume his post as Chief of Party. In the interim period, DAI has mobilized Acting COP, Mr.

David Anderson. As Acting COP, Mr. Anderson will oversee Year 1 work plan development, finalization of the Terms of Reference (TORs) for the preliminary technical assessments. He will also oversee start-up operations and financial management activities.

One of five named key personnel, the Senior Marketing and Export Advisor, was no longer available to join the team. DAI is currently recruiting to fill this position, and we plan to identify a suitable candidate, and submit an approval request to the Contracting Officer in August, 2015.

## PHASED ONBOARDING OF PERSONNEL

As mentioned above, DAI will implement a phased staffing plan that is responsive to program implementation needs.

- Phase 1:** Onboarding is between June 1 and July 15, 2015. Phase 1 staff onboarding was determined based on the staff deemed necessary to establish essential administration, operations, and initial technical activities outlined in the proceeding technical work plan. Everyone onboarded in Phase 1 will continue to the successful start-up of AVC including project registration, establishing of bank accounts, identification and establishing of office space, initial procurements, initial recruitment, and other critical, time-intensive start up tasks that require a “all hands on deck” approach. In addition, members of the Phase 1 technical team have played a key role in supporting development of the Year 1 (16 month) work plan, as well as initiation of the Value Chain Selection and Value Chain Assessments.
- Phase 2:** Onboarding between July 15 and October 1, 2015: Phase 2 staff includes those who were not identified at the proposal phase, but who will be important for successful project implementation. Scopes of work for these positions have been posted during start up, and the Start-Up Team and Phase 1 staff will identify the best candidates and onboard these staff. Identification of a Senior Marketing and Export Advisor will be the first priority for Phase 2 staffing. DAI will identify this candidate as soon as possible and no later than August, 2015, and submit a request to the Contracting Officer presenting the replacement key personnel for approval. Onboarding for Phase 2 staff extends through October 1 to account for the required CO Approval for Key Personnel Replacement and the closure of the CAR CO Office through September 30, 2015. We are optimistic that the CO will grant an exception to the closure to consider our Key personnel replacement request.
- Phase 3:** Onboarding no earlier than one month prior to Project Registration. Prior to project registration, the AVC project should not have a presence as “AVC”, and is unable to meet in an official capacity with institutional partners, stakeholders, and beneficiaries. The project team is also unable to travel outside of the Tashkent region until the MOU is established. Given these constraints, DAI plans to staff positions that require significant engagement with project institutional partners and stakeholders, as well as the Communications and Outreach Specialist, at a later date once the timing of Project Registration is clearer.

**Table 4: Mobilization of AVC Non-Key Personnel**

Name	Title	Mobilization Date
<b>Technical Team</b>		
Gholib Mahmudov	Team Leader - Component 1	Phase 1



Name	Title	Mobilization Date
Sunnat Djalalov	Team Leader - Component 2 & Environmental Officer	Phase 1
Ulugbek Bekchanov (proposed)	Senior Marketing & Export Advisor/ Component 3 Lead	Phase 2
TBD	Team Leader - Component 4	Phase 3
Dmitry Lunev	Agricultural Engineer	Phase 1
TBD	Post-harvest Officer	Phase 2
TBD	Production Officer	Phase 2
TBD	Marketing and Standards Specialist	Phase 3
Sardor Kadyrov	ICT Specialist	Phase 1
<b>Monitoring, Evaluation, and Learning and Communications Team</b>		
Komil Yakubov	Communications and Outreach Specialist	Phase 3
Khurshida Gapirova	Monitoring Evaluation & Learning Assistant	Phase 1
<b>Finance and Administration Team</b>		
Gafur Berkinov	Finance Manager	Phase 1
Nazokat Yakhyaeva	Operations and Compliance Specialist	Phase 1
TBD	Administrative Assistant	Phase 2
TBD	Accountant	Phase 2
Sanjar Zakyrov	Procurement Assistance and Driver	

## GEOGRAPHIC FOCUS

The AVC Activity assumes that it will be allowed to work in the 12 provinces plus Tashkent City and 32 districts where, an increase of 6 provinces and 6 districts, compared to where USAID-ALP worked in from 2011-2015. AVC staff analysed data on agricultural production by districts listed in Draft MOU. The information was provided by Export Promotion Fund and was double checked through personal resources. The data showed that out of 6 new districts the following 3: Khatirchi District (Navoi Province), Syrdarya District (Syrdarya Province) and Bogot District (Khorezm Province) are specialized in cotton production. Horticultural production in those areas is minor and mainly on backyard level. After the MOU is signed the AVC technical staff will visit new districts to conduct assessment on required technical assistance within the project's scope of work. The list of the ALP provinces and districts is listed below:

**Table 5: Geographic Focus by Province, including Tashkent City**

#	Provinces	District						ALP	AVC (new)	Total	Other
1	Samarkand	Taylok	Payarik	Samarkand	Urgut	Bulungur		5	0	32 plus Tashkent city	
2	Namangan	Pop	Turakurgan	Uychi	Kosonsoy	Chortok	Yangikurgan	6	0		
3	Ferghana	Kuvasoy	Ferghana	Kuva	Altyaryk			4	0		
4	Tashkent	Ohangaran	Bustonlik	Zangjata	Parkent	Kibray		5	0		
5	Andijan	Andijan	Bulokboshi	Hujaobad	Marhamat	Jalakuduk		5	0		
6	Bukhara	Jondor						1	0		
7	Karakalpakstan	Nukus						0	1		
8	Jizzakh	Bakhmal						0	1		
9	Kashkadarya	Kitab						0	1		

#	Provinces	District					ALP	AVC (new)	Total	Other
10	Navoi	Khatirchi					0	1		
11	Syrdarya	Syrdarya					0	1		
12	Khorezm	Bogot					0	1		

### SHORT TERM TECHNICAL ASSISTANCE

In addition to the local, long term positions described above DAI plans to utilize the international and local consultants listed **Error! Reference source not found.**, below on an as-needed basis to support implementation of the activities described in the Technical Work Plan. Those STTAs support Component 1 since Components 2&3 are supported by AVC subcontractors.

**Table 6: Roster of International Consultants**

Technical Expertise/Position	Consultant Name
Tissue Culture Lab/Micro Propagation Specialist	John Driver
Cherry Specialist	Joseph Grant
Post-Harvest Handling Specialist	Joseph Similanick
Orchard and Nursery Specialist	Tim Mitchell
Horticulture Specialist	Stephen Brannon

AVC will hire Provincial Coordinators as part of ME&L unit. Provincial Coordinators will be in touch with the project beneficiaries on a frequent basis to learn their needs and problems and communicate it to the AVC Tashkent office, collect required M&E information, monitor demo plot activities, assist to identify technical assistance and training needs, arrange official visits to the districts, etc. According to local regulations DAI can hire these coordinators on a consultancy basis.

**Table 5: List of Local Short Term Consultants**

Specialty	Name
Gender	TBD
Marketing	TBD
Pest& disease	Zarip Pulatov
Phytosanitary/quality	TBD
Finance/bank loans	TBD

**Table 7: List of Provincial Coordinators**

#	Province	Provincial Coordinator
1	Andijan	Umidjon Okboyev
2	Bukhara	Utkir Ruziev
3	Ferghana	Alijon Khamraliev
4	Namangan	Abdugoffor Khaknazarov
5	Samarkand	Masurjon Sohibnazarov
6	Tashkent	Mukhtaram Sayfuddinova
7	Karakalpakstan	TBD, part time
8	Jizzakh	TBD, part time
9	Kashkadarya	TBD, part time
10	Navoi	TBD, part time
11	Syrdarya	TBD, part time
12	Khorezm	TBD, part time

During the implementation other local STTAs will be identified and hired according to project needs and in consultation with the beneficiaries. These might include post-harvest, marketing and production technology specialists.

## PROCUREMENT

As part of project start-up, DAI will provide refresher training to the AVC field team, establish procurement protocols, and initiate several relatively large procurements that are essential to establishing a local office and team. The most significant procurement is the IT procurement, which will be comprised of the IT items outlined in the approved contract budget. In addition to the IT procurement, the AVC team will be selecting an Internet Service Provider and establishing competitively selected “preferred vendors” for recurring goods and services in year 1.

As the project transitions from the Start-up Phase, the team will procure goods and services required to support project activities described in the Technical Work plan below. Please see Annex 4 for a complete list of commodities to be purchased in Year 1 of the project.

## SUBCONTRACTORS

DAI has executed subcontracts with subcontractors 20/20 Development Company (20/20DC) and the World Food Logistics Organization/ Global Cold Chain Alliance (GCCA). DAI has screened subcontractor proposals and work plan activities to ensure that they are sustainable and do not result in adverse environmental impacts; and that mitigation measures, as necessary, are developed, and monitoring and reporting is specified.

**20/20DC:** The role of 20/20DC on the AVC project is to lead agricultural marketing research for domestic and export markets for Uzbekistan fruits and vegetables, support a technical market review of Uzbekistan’s fruit and vegetable processors, and provide training and technical assistance to both the AVC team and local private sector players to support upgrading of processing, post-harvest handling, and marketing, to reach new markets. To successfully implement this scope of work, 20/20DC will engage the technical consultants summarized in **Error! Reference source not found.**, below. Additional information

regarding the technical activities that these consultants will be supporting is found in the proceeding technical work plan.

**Table 8: 20/20 DC Technical Consultants in Year 1**

<b>Position</b>	<b>Name</b>	<b>Approximate Timing of Assistance</b>
Market Linkages and Export Lead	Jim Krigbaum	July, 2015 and February, 2016
Food Process Engineer	Mark Close	December, 2015
Post-Harvest Handling and Quality Expert	Olivier Van Buynder	December, 2015
Horticultural Trade Expert and Facilitator	John Early	February, 2016
Marketing and Standards Training Developer	Shawn Dooley	December, 2015

**GCCA:** GCCA was also a subcontractor on the ALP project, in which project assistance to expansion of cold chain investment yielded tremendous results for project beneficiaries. The organization’s role on the AVC project involves continued assistance in support of improvement and expansion of post-harvest handling and cold chain development. To support this scope, GCCA has mobilized long-terms employee Mumin Isamidinov, to serve as Regional Cold Chain Advisor. In addition to full time support from Mr. Isamidinov, GCCA will engage Cold Chain Management Trainer, Richard Tracy in 2016. Mr. Tracy will be mobilized in coordination with technical activities described in the technical work plan below.

## **REPORTING AND DELIVERABLES**

As outlined in the contract, DAI will submit the following reports and deliverables throughout Year 1 Implementation according to the schedule outlined in the contract.

- Annual Work Plan: Submit 45 days after contract award.
- Activity Monitoring and Evaluation Plan (AMEP): A draft AMEP was requested with the submission of the proposal. The contract specifies that the draft AMEP is considered the final AMEP.
- Quarterly Performance Reports: Submit no later than 30 calendar days following the end of each standard USG fiscal quarter.
- Annual Report: The fourth quarter report will serve the purpose of the annual report, and will be submitted no later than 30 calendar days after the USG fiscal year, ending September 30.
- Participant Training Records: AVC will enter all data related to trainings, conferences, and workshops provided by the project into USAID’s TraiNET reporting system no later than 45 days following the end of each fiscal quarter.
- Quarterly Financial Reports: AVC will submit 10 days prior to the end of each quarter.
- Accrual Reports: AVC will submit 10 days prior to the end of each quarter.
- DAI will submit monthly vouchers to USAID as stipulated in the contract per AIDAR 752.7003



# TECHNICAL WORKPLAN

## PROGRAM DESIGN

AVC takes the next logical step from the work done under the successful USAID-ALP (2011-14) Project and AgLinks (2008-2011). USAID-ALP focused on improving best production and storage practices for the F&V sector participants in Uzbekistan. AVC will build upon this work by taking these practices to scale and by ensuring that F&V products from Uzbekistan are effectively reaching their end markets, both domestically and internationally.

To achieve these goals, AVC will implement a **total value chain approach** that will include broader **partnerships** with government agencies, agricultural universities, input providers, and other donors when appropriate. A key strategy for conducting technical assistance and training activities will seeking and applying new **innovative** agricultural practices that will lead to the **sustainability** of the producers and enterprises involved in the production, post-harvest management, and marketing of Uzbekistan fresh and processed fruits and vegetables. Production and post-production practices utilized under USAID-ALP will be **taken to scale** under the AVC Activity.

The AVC Activity will provide assistance on a cost-share basis in order to ensure that beneficiaries have sufficient buy-in to the trainings they receive. This model will also help to adjust beneficiaries to the idea of cost-sharing so that they will become accustomed to paying for technical advice and trainings that will benefit their enterprises.

The AVC Activity will be implemented through four Components that are linked into a single holistic system. Increasing employment and incomes for F&V value chain participants requires different but mutually reinforcing initiatives that will be implemented according to the four Activity components:

- Component 1: improve the quality and volume of agricultural production;
- Component 2: improve post-harvest handling and production;
- Component 3: facilitate market linkages;
- Component 4: link educational institutions with private sector demand.

As will be clear through the work plan narrative, AVC activities for Component 1 and 2 build upon the success of ALP, working with similar partners and beneficiaries. Within these components, differentiation between ALP and AVC is the addition of new value chains, which include melons, berries, and high-value vegetables, expansion into new focus districts within the provinces, and refinement of ALP activities based on consolidated learning at the end of ALP. It is in Components 3 and 4, however, where AVC will truly distinguish itself from previous projects. To support Component 3, AVC will improve and expand market linkages, and facilitate investments in processing and marketing that are responsive to international and domestic demand and product standards. AVC will also introduce new subcontractor 20/20 Development Company (20/20DC) to support Component 3. Component 4 also reflects the expansion of the project scope- to formalize working partnership with Educational and Research Institutions. The success of Component 4 will ensure that project learning is captured and sustained in the domestic horticultural sector, and the next generation of agricultural professionals.

## **COLLABORATION WITH OTHER DONOR PROGRAMS**

In Year 1, the AVC Activity will begin exploring how we can collaborate with horticulture assistance activities of other donors. Some of the examples of such cooperation may include:

- In July 2015, the World Bank launched its Horticulture Development Project in Uzbekistan (\$150 million of which 120 million are for low-interest agricultural credit and 30 million for technical assistance). The project will work in 7 oblasts of Uzbekistan. The AVC Activity staff has already met with the Bank and agreed to begin inviting their beneficiaries to AVC training programs to teach them advanced horticulture technologies. In turn, the World Bank agreed to teach AVC beneficiaries on how to get access to the World Bank's low-interest agriculture loans.
- In 2014, IFAD began a new \$30 million project to support horticulture in Surkhandarya oblast. They are aiming to build a tissue culture lab there. The AVC Activity can share our tissue culture lab experience with them.
- The IFC is providing training programs on GlobalGap and HACCP in Uzbekistan. The IFC has already agreed to share their training materials with the AVC Activity as well as to invite our participants to their training programs.
- GIZ built two demo sites for high-intensity orchards in Surkhandarya oblast and in Khorezm. AVC will learn from their experience in these two oblasts even though we do not work there ourselves.
- The EU is planning a new \$10 million horticulture assistance project in Uzbekistan.
- The EC published a new manual in 2014 to educate Uzbekistan exporters on how to export to the EU. AVC will cooperate with the EC on synchronising our Component 3 tasks.
- UNDP has built an advanced food dryer in Uzbekistan. The AVC Activity will explore how to cooperate with UNDP in our food processing tasks.

During the initial start-up period of July 13 – 20, the AVC contacted and met with the following international donors to begin discussions on possible areas of collaboration:

1. Export Promotion Fund (EPF) – July 13
2. International Finance Corporation (IFC) – July 16
3. International Fund for Agriculture Development (IFAD) – July 17
4. GIZ – July 17
5. Food and Agriculture Organization (FAO) – July 18
6. United Nations Development Program (UNDP) – July 20

## **ACTIVITY ASSESSMENTS**

The AVC intends to use the following format for conducting and presenting the Activity Assessments, as outlined in the Contract:

1. Horticultural Stock Taking and Selection (Contract Assessment C.3.e.1)
2. Value Chain Assessments (includes Contract Assessments C.3.e.2, 4, and 6)
3. Educational Opportunities Assessment (Contract Assessment C.3.e.3)
4. Activity Mapping (Contract Assessment C.3.e.5)

In Year 1, AVC will collect comprehensive information on target value chains, market constraints that impede these value chains from becoming more competitive, end markets, as well as the opportunities for upgrading. AVC will collect accurate end market information to develop a clear understanding of the

demand for products in the target value chains, for both fresh and processed products, selected by AVC in collaboration with USAID and the Government of Uzbekistan: stone fruits (cherries, apricots, peaches/nectarines, plums), apples, grapes and sub-tropical fruit (persimmons and pomegranates). The Activity will also assess the potential for high-value vegetable crops as well as other fruits (i.e. melons and berries). The Activity will identify market opportunities available to value chain participants based on their potential to sell the products and use the proceeds to sustainably improve their competitive situation.

AVC will assess the demand for products sold by targeted participants domestically (in Uzbekistan), regionally (i.e. Kazakhstan, Russia) and worldwide (i.e. East Asia, Middle East and the EU). The intent is to assess market opportunities and the market dynamics that increase or decrease that potential. The data available for each opportunity will come from various sources, but will rely heavily on primary research: the AVC team will interview value chain participants across target districts and value chains, and analyze the data to be presented as a separate deliverable. The analysis will look at the entirety of each value chain beginning with end markets and ending with producers.

To analyze the data and information and to draw conclusions and recommendations for the project, the assessments will be guided by DAI's value chain approach tools, including DAI's end market analysis tool kit that focuses on market trends, buyer requirements, and the structure of the markets, 20/20DC's market research tools as well as USAID's End Market analysis toolkit.<sup>1</sup> The analytical tools associated with end market analysis, market constraints and opportunities analysis, value chain mapping, etc. will be used for each value chain.

In addition, AVC will conduct an Educational Opportunities Assessment to identify creative and feasible areas of engagement with agricultural universities and colleges. AVC will survey businesses along the horticulture value chain about their human resource needs and local skills gaps, compare these qualifications with Uzbek university curricula and textbooks, and develop recommendations on how best to support these institutions to better respond to market demand.

The Activity Mapping will be an ongoing exercise and will rely heavily on feedback and cooperation of the MAWR. In Year 1, the AVC Activity will begin discussion with the MAWR and USAID on how to best conduct it in the subsequent years.

The assessments will aim to be straightforward and comprehensive enough to inform, shape and guide planning, policies and interventions not only of USAID-AVC itself, but also of the subsequent phases of other donor and GOU-driven projects in the F&V sector.

At the time of the submission of this work plan, the Horticultural Stock Taking/Commodity Selection assessments have been completed. As a result of this assessment, the AVC Activity selected the 10 value chains that will undergo further value chain assessments as described above.

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<sup>1</sup> USAID's Value Chain Analysis resource made available at Microlinks.



## COMPONENT 1: IMPROVE THE QUALITY AND VOLUME OF AGRICULTURAL PRODUCTION

**Staff assigned:** Task 1 Lead (TBD), Acting Task 1 Lead (Gholib Mahmudov), Dmitriy Lunev (Agricultural Engineer)

**Rationale:** While the Uzbekistan horticulture sector continues to expand, many farms are still under-producing. Many producers still lack access to information on modern growing practices (including the government-prioritized intensive orchard system management techniques), improved sapling varieties, certified true-to-type plant material, water and irrigation equipment, high quality equipment and tools, and crop protection products. In Year 1, AVC will re-launch a demo plot model as an entry point for service providers to conduct training and will build on USAID-ALP's successful exchange programs.

### TASK 1.A. IMPROVE ON-FARM PRODUCTIVITY

#### Sub-Task 1.A.1. Provide technical assistance in best agricultural practices

This subtask aims to take to scale the production technologies that were introduced under USAID-AL and ALP, and new technologies identified to support new value chains such as melons, berries, and high value vegetables. Among other things, the subtask will consist of training programs carried out on demo plots as well as through training new production technology groups. Examples of new technology are on-farm cooling equipment, modern packing materials, and mobile phone information systems for obtaining expert advice on production and market information.

On selected demonstration sites, we will conduct a set of activities serving to increase agriculture product quality and production volumes. Such innovations include:

- Timely land preparation of field for sowing of vegetable crops. Conducting inter-row cultivation in orchards and vineyards. The attempt to introduce in a separate demo site zero tillage to compare the potential benefits and resource savings.
- The change in the planting scheme to increase the land use efficiency, reduce evaporation from the surface of the field.
- Conducting water application/irrigations on a pre-calculated irrigation table for a vegetation period. The use of devices (Tensiometers/Irrimeters) for indication of soil moisture in root zone. Monitoring of soil water regime during the growing season.
- Installing devices (ET Gage) to measure daily evapotranspiration on a separate demo sites. Monitoring of evaporation and transpiration during the growing season.
- On a vegetable crops the introduction of water saving technologies, like drip irrigation or micro sprinkling. The construction<sup>2</sup> of several demo sites using drip irrigation and/or micro sprinkling technologies.

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<sup>2</sup> AVC plans to install advanced irrigation systems on a cost-share basis: at the Ag Universities the cost share includes in-kind contribution and at the producers' level AVC will only provide technical assistance whereas the producer will procure all necessary equipment. All irrigation technical assistance and training will be conducted by AVC Agriculture Engineer.

- Installation support modern trellis and garters on fields with intensive scheme of planting. The introduction of advanced complex N-P-K fertilizers (including micro elements and growth stimulants) according pre-designed plan and with agreed calculated norms.

In AVC's first 16 months, AVC will identify, co-invest and engage with leading growers in initial AVC districts to establish demo plots for selected commodities, listed below.

1. Grapes (Table and Raisins)
2. Cherries
3. Apricots
4. Peaches
5. Plums
6. Apples
7. New fruit crops – melons and berries
8. High Value Vegetable crops – Tomatoes and Onions

We will apply a systematic field school training approach to teach producers the proper techniques of crop and orchard management, water management, planting, trellising, grafting, pest and disease control, fertilizer application, and pruning techniques. Our training schedule will take into account crop seasonality: for instance, pruning training will be carried during the plant dormant season (i.e. from October-March for most of our crops), with limited summer pruning (green pruning) for pome and stone fruits. On the other hand, with grapes, summer pruning will include cluster, leaf, shoot thinning, tipping, topping, pinching, etc. activities. For those agricultural practices often involving women, special training sessions will be conducted to improve their knowledge and skills, and introduce user-friendly tools and equipment for their usage.

AVC will work with AWE and use culturally sensitive guidelines for crop management activities that incorporate both productive roles of men and women in the household. We will also ensure that female staff engages with female community members to invite them to training sessions.

AVC will bring in local input suppliers and service providers to support training and showcase relevant products, ensuring that AVC acts as a facilitator to build linkages between producers and service providers. Private partners who benefited from USAID-ALP Activity such as Konsalting Madad Hamkor and other certified nursery operators will participate in those training programs. Syngenta Agro Services, an important input supplier in Uzbekistan market, will also be engaged to provide key inputs (fertilizers, crop protection materials) in addition to technical assistance and training on the proper use and application of the selected inputs. In the case value chain where DAI has worked and has established partnerships, we will continue to build upon those relationships. In the case of new value chains, such as melons, berries, and vegetables, we will identify new partners and form new relationships as necessary.

AVC will create new **production technology groups**, building on the success of the ALP pruning groups' model. These groups will try to cover some areas such as nursery production, tree trellising and training systems, dormant and summer pruning grafting, vegetable production, irrigation practices, crop protection (pest and disease control), fertilization, etc. These groups will try to focus on skills and technology types with high potential and demand by producers in the market, but not necessarily are intended to be experts of all above mentioned areas. To do that, some of the existing pruning groups will be used as a base, and trained to new and highly demanded skills to transform these groups from one operation oriented to more flexible with production skills and methods technology groups.

In parallel, if the new groups are formed, the existing pruning groups will be invited to share their experience with demo plot participants in other training programs to demonstrate how groups can disseminate useful, modern production technologies with producers. In the long run, these groups will sustain their existence in the market by providing a fee based high quality production technology and operation services for producers. Diversification of their technology skills will enable them to become a lot more competitive in the market by offering a set of services instead of just one, pruning. Also, AVC will continuously explore and share new production technologies as mentioned above with various groups and, in Year 1, explore ways for groups to learn from one another (i.e. via TOT).

In Uzbekistan, producers and agribusinesses are established in high-density orchards. However, despite this density, many actors have limited exposure to modern production technologies that AVC will promote. In Year 1, AVC will explore how AVC production technology groups can become a vehicle to disseminate that knowledge and even to provide agricultural consulting services to the producers and agribusinesses in the future.

At the beginning of the planting season and at the end of the crop season, AVC will conduct round tables for each value chain and invite value chain participants to share their Year 1 experience and provide their feedback that will be used for Years 2 and 3 activities. The participating producers will share lessons learned that will assist in increasing productivity and/or improving quality from the get-go, as well as conduct year end round tables to share success stories.

#### **Sub-Task 1.A.2. Facilitate national AVC exchange programs and fairs.**

AVC will organize value chain fairs that will help the Activity to conduct contests among producers, as well as to enable input providers and other value chain actors to demonstrate machinery, equipment and technologies, as well as discuss end market opportunities. The concept for these fairs expand upon the ALP- variety contests by creating commercial opportunities/market linkages among various functions in the value chains. Special attention will be provided to women practitioners to more effectively involve them in the commercial opportunities and market linkages. In Year 1, AVC will complement on-farm training with specific value chain fairs to encourage learning among producers across the country and to link input suppliers, processors, exporters, service providers and other value chain actors to farms. In its first 16 months, AVC will conduct 6 such fairs for apple, grape, peach, pomegranate, persimmon and cherry value chains, and possibly a high-value vegetable fair.

To jump-start and facilitate adoption of specific best practices and on-farm and processing technology, by value chain participants, AVC will carry out national exchange programs for apples, peach, cherries and grapes. AVC will carry out a national exchange program to discuss specific technology or crop-related tasks once a year per crop and/or per technical activity. Some will be conducted during the harvest season while others will be carried out during growing/vegetation period.

#### **Sub-Task 1.A.3. Introduce innovative scientific technologies to producers.**

In its first 16 months, the AVC Activity will continue to build on the practices of its predecessor project to disseminate new technologies in plant propagation, variety standardization, etc. to the participating producers. The AVC Activity will add a new dimension to ensure that varieties that we are focusing on are the ones demanded by the market place, so the effect of the Activity is directly related to the producers' bottom line.

An important activity will be to continue to completion the work began during the ALP project relevant to increasing the productivity of the high value cherry value chain vis-à-vis the S-allele testing program and DNA testing of existing cherry varieties.

Cherries grown in Uzbekistan are in high demand in markets such as Russia and Korea. A major constraint to cherry production is that pollinizers are not consistently matched in cherry orchards across the country: cherry trees blossom abundantly but produce little fruit. In Year 1, AVC will build on USAID-ALP's work toward determining the appropriate genetic match between pollinator and varieties grown in Uzbekistan through a process known as S-allele testing. Initially, we will develop a list of recommendations to cherry producers regarding pollination and grafting for specific varieties based on results of S-allele tests to match varieties with recommendations. We will finalize S-Allele testing by creating a list of pollinizers for cherry varieties.

An additional problem that Uzbek cherries face in the market is that there are multiple cherry varieties named interchangeably, which leads to the undefined and misleading variety identification. This creates an additional barrier for buyers to be able to trust the produce from Uzbekistan as the consistency is questioned. DNA test will help to identify the true types and varieties that enable to correctly organize, plan, and run cherry production business in the future. AVC will take samples from the same 15 varieties in 9 orchards in 4 districts to identify and distinguish between the cherry varieties, and name them consistently. This will allow producers to plan their orchards according with market demand.

In other value chains, AVC will help producers take advantage of market opportunities by demonstrating the new technologies and application to producers during farmer field days and classroom training sessions. AVC will develop a list of recommendations to optimize the nutrient content in the soil to producers based on the results of leaf analysis conducted under USAID-ALP. These recommendations will be presented during these farmer field days. AVC will engage locally available experts to assist us with these recommendations.

AVC will also conduct nursery management training sessions for nursery operators to be able to market saplings to producers more effectively. These sessions will discuss topics such as business planning, true-to-type sapling production, variety selection, propagation technologies, and etc.

#### **Sub-Task 1.A.4. Expand the Use and Improve User Interface of MEVA 2.0**

Development of the MEVA application was a milestone achievement under the ALP Project. The MEVA application contains a wealth of agricultural extension information specific to ALP target crops including apples, cherries, grapes, etc. As the application was completed as a deliverable at the end of ALP, AVC will effectively roll out the application to users, and continue to refine and add content. To take MEVA application beyond what USAID-ALP accomplished by February 2015, AVC will support the continued roll out of the MEVA 2 application to project beneficiaries and Agricultural University partners. To accomplish this goal, AVC will conduct a user survey to understand consumer experience and ways to improve user experience with the application. For example, preliminary feedback has indicated that the application uses too much storage on the user's device. One potential intervention to address this concern could be to divide the application content into individual, value-chain specific downloads.

Additionally, AVC will work with educational institutions through Component 4 to expand the use of MEVA in the classroom and university learning context.

## **TASK 1.B. INCREASE THE QUALITY AND AVAILABILITY OF AGRICULTURAL INPUTS**

### **Sub-Task 1.B.1. Invest in the full operation of tissue culture lab and supplemental support to government institutions.**

Propagating disease-free, true-to-type plant materials locally and distributing them to certified nursery operators lays the foundation for increasing the quality of inputs to the horticulture sector. A capstone achievement of the ALP project was the grand opening of a fully functioning tissue culture lab at the Mirzayev Institute. The sub-task below explains how AVC will continue to support the Institute in 2015-16. The tissue culture laboratory operation is a priority for the GOU and USAID. Training should be started as soon as receipt of formal/informal approval by the GOU and AVC will not wait for greenhouse construction work. Prior to procurement and installation of the greenhouse facility, the EMMP and PERSUAP should be done and approved by USAID BEO level.

AVC will assist the Institute with designing and constructing a greenhouse that will complement the tissue culture laboratory work. The purpose of the greenhouse is to receive tender plantlets from the laboratory and “harden” them off to grow on to saleable size planting material. This will depend on the Mirzayev Institute’s collaboration with the AVC Activity; therefore, we will work toward signing a Memorandum of Understanding with the Institute as well as developing a joint action plan. In order for this sub-task to take place, AVC assumes that the GOU and the Mirzayev Institute will participate in providing all auxiliary infrastructure for the greenhouse, which will be reflected in a memorandum between the Activity and the GOU.

The greenhouse will include external and internal drainage systems, shading, active and passive ventilation systems, advanced irrigation systems, climate control systems, etc. over an area of 1000 sq. meters. It will include an enclosed passage-way to the lab, its own storage with sufficient input reserves, as well as all the necessary resources (an independent supply of electricity, irrigation and potable water and natural gas) to be provided by the Mirzayev Institute to be able to turn it into an effective resource for the Institute and its research staff.

Once established, AVC will train the Mirzayev Institute staff on greenhouse management to ensure that the tissue culture lab is fully functioning by Year 2. Immediate upon construction, AVC will carry out training on greenhouse management. AVC will utilize tissue culture lab experts from the U.S. who will train and consult the Institute staff on setting up tissue culture lab operation procedures, and if required creating operational manual / guides in Uzbek / Russian. And, to finish up the cycle of technical assistance for successful greenhouse/tissue culture lab operation. An AVC consultant will conduct micro-propagation trainings on the on-going basis starting from his first visit to Uzbekistan.

### **Sub-Task 1.B.2: Develop the capacity of horticulture input providers to expand consulting services.**

As the reach of the horticulture extension services provided by the government is marginal, there is an opportunity for the private input providers to support the growing F&V production sector with consulting services. AVC will engage agro-dealers and input suppliers to improve knowledge of horticultural producers about such topics as existing pest and disease control aids (pesticides), new technologies and equipment, plant material, etc. Thus, agro-dealers will not only sell the already available equipment, tools and inputs for agricultural production, but also be interested to influence the demand of the Uzbek producers for more advanced inputs through disseminating more advanced knowledge and practices among them. The input providers will thus be interested to make the producers more competitive by offering better products and accompanying services.

To support this dynamic, during Year 1 the AVC Activity will develop and conduct technical and managerial training to these consulting service providers, included at potential demonstration sites on a cost-share basis. For example, we will work with Konsalting Madad Hamkor and with other service providers to upgrade their consulting service delivery systems on a commercial basis. AVC will provide technical and managerial training (e.g., financial, managerial, and marketing skills) to horticulture input service providers such as certified nursery operators to provide more fee-based service-after-sale on crop management, grafting, and tree propagating training. AVC will pay specific attention to gender sensitive guidelines to ensure that the consulting services provided by input suppliers reach both men and women.

### **Sub-Task 1.B.3. Foster a viable local market for much-needed quality farm tools and equipment.**

The experience of USAID-ALP demonstrated that there is significant potential demand among producers for quality orchard tools and equipment that are not available locally. The orchard tools market is dominated by cheaper, lower-quality products, and current best practice technology and equipment is typically not available to producers.

In Year 1, AVC will draw top quality agricultural equipment companies into Uzbek markets by demonstrating market potential. Through demonstration plots and training sessions, AVC will expose farmers to new technology, stimulating demand for new high quality products and reducing the market risk for equipment vendors of supplying new technologies. In the first phase, we will identify and inform local and international horticulture equipment manufacturers and distributors of AVC demo training sessions in which they can showcase a variety of high-end tools, and foster commercial relationships with AVC producers. We will also leverage those producers who received training and high-quality tools under USAID-ALP and invite them to share their experience and showcase the higher quality tools. At the second phase, we provide our field-partners with samples of tools and small equipment at cost share basis with local and international suppliers to test these samples in actual use. In the third phase, we develop a questionnaire to measure competitiveness level of the tested tools by capturing both qualitative and quantitative data, and including price. Finally, we produce our recommendations based on the evaluation results and provide to input suppliers. AVC will ensure that tools used specifically by women producers (i.e. light-weight garden shears for women that are currently lacking in Uzbekistan) also have a place in the market.

## **COMPONENT 2: IMPROVE POST-HARVEST HANDLING AND PRODUCTION**

**Staff assigned:** Component 2 Lead (Sunnat Jalalov), GCCA Lead (Mumin Isamiddinov), Gholib Mahmudov (Acting Component 1 Lead)

**Rationale:** The GOU has estimated post-harvest crop losses in the fruit (particularly grapes) and vegetable subsectors to be 20-30 percent of production. Reducing these losses and adding additional value to products in-country can help Uzbekistan to achieve greater benefit from its existing horticultural resources.

To access domestic retail outlets and expand sales to new markets, horticulture value chain stakeholders such as producers, consolidators, transporters, cold store operators, and exporters must improve inter-firm relationships, better coordinate efforts to improve post-harvest management, and expand capacity and

diversity of processing. The cold chain is a growing industry in Uzbekistan: the cold chain operators re-invest a portion of their profits as well as borrowings from banks into their operation to increase their capacity. The cold chain becomes increasingly important as a fresh fruit industry evolves from an artisanal to a professional approach to the sector. AVC will build upon these early successes to support this important transformation.

## **TASK 2.A. FACILITATE THE ADVANCEMENT OF COLD STORAGE PRACTICES**

### **Sub-Task 2.A.1. Facilitate cold chain demo site activities and national cold chain exchange programs for cold storage operators.**

In Year 1, AVC will continue linking cold storage service providers in Uzbekistan into systematic networks of producers, buyers, and cold chain suppliers, as well as end-buyers of horticultural products on a geographic basis. AVC will focus on capacity building of the processors by bringing foreign experts or facilitating them to attend trade fairs. AVC might provide them with minor tools or equipment that could be used at the processing plant... AVC will begin with revisiting relationships established under USAID-ALP and initiating new relationships with other cold chain operators in target districts. AVC will select and/or set-up demonstration sites throughout project target areas. Depending on how many districts AVC will be allowed to operate during Year 1, we plan on linking with 10-15 previous cold store beneficiaries of USAID-ALP, equipped with necessary devices to monitor crop quality such as temperature, humidity, and ethylene gas monitoring systems. These cold stores will serve as demos and training polygons for other beneficiaries in the regions.

AVC will also systematically provide group training to cold chain businesses to promote technical and managerial solutions in areas such as improving temperature and humidity control, ensuring proper storage temperature/humidity levels per crop, and limiting cross-contamination. AVC will also provide training on operation and maintenance of cold storage equipment currently available in Uzbekistan and recommend tools and techniques to ensure smooth functioning of cold storage infrastructure. When piloting new technologies — such as temperature and humidity control units — we will invite distributors and retailers to demonstrate the effectiveness of their products to ensure that commercial relationships are built for the cold chain. Depending on when USAID signs the MOU with the GOU, AVC expects to conduct around 5 on-storage and 5 harvesting, sorting, packing and proper refrigerated transportation training programs (for only some of the crops) related to cold chain before October 2016. We will use the training programs as opportunities to present new technologies such as liquid ice to improve nutrient preservation, weight retention, ultra-low oxygen systems, effect of cold storage on shelf life and customer response.

At the end of the Activity's year, AVC will conduct a round-table for cold storage operators and their clients to share their experience and provide feedback to plan an assistance strategy for subsequent years.

In the first 16 months of the Activity, AVC will facilitate national exchange visits to enable cold chain stakeholders in Uzbekistan to share best practices. We plan on facilitating both national-level and micro (regional) exchange programs. National exchange program will consolidate cold chain operators at the national level and will take place twice a year while micro programs will be provided on demonstration sites regionally on an ongoing basis for smaller groups of regional cold store operators interested in learning best cold chain practices. For example, brokers/intermediaries between producers and product consolidators for export are more wide-spread in the districts of Ferghana oblast than in the neighboring

Andijan and Namangan. Therefore, the AVC Activity will use the Ferghana as a launching pad for spreading the brokerage practices within the target geographic area.

In Year 1, AVC will work through its cold storage network with women engaged in harvest and post-harvest handling activities (i.e. grading, sorting, packing, etc.). Since proper cold storage begins with F&V production where women play an important role, AVC will leverage their network to educate producers, including women, to properly handle the produce before it reaches the cold chain. Since cold storage also provides a good business opportunity for new entrants, including for women, AVC will engage AWE to build their capacity to serve the needs of women entrepreneurs in cold chain. We will consider bringing women producers in some of the targets districts together in producer groups using ALP pruning groups as a model for maximum technology dissemination impact. AVC will pay special attention to improving work condition for women who are engaged in harvest and post-harvest handling activities. We will also begin to explore professionalizing women producer groups (i.e. build their capacity as organizations) once these are established. This task is linked with Sub-task 2.B.1 below.

### **Sub-Task 2.A.3. Facilitate the establishment of a pay-for-service cold chain service provider**

At the moment, utilization of cold chain technologies across various operators in Uzbekistan is not uniform: dissemination and use of best practices greatly differs among cold chain operators. As a result, the market (especially the export market) has low trust for consistency and quality of produce that comes from Uzbekistan.

AVC will aid in the establishment of a cold chain service provider organization, which will track and disseminate knowledge and best practices for cold chain use and expansion in Uzbekistan. Working towards this goal, in Year 1, AVC will consult with cold store operators and other stakeholders to better understand the readiness of these actors to work in cooperation and to support a pay-for-service provider.

Additionally, AVC will invest in a training-of-trainers/mentorship program for exchange visit participants and local cold chain consultants to develop a functioning local cold chain service provider in Uzbekistan able to provide technical assistance on a fee basis by the Activity's end. AVC will begin working on the first round of mentorship programs to build the technical competency of this service provider through hands-on support at demo sites and participation in the post-harvest/cold chain exchange visits.

## **TASK 2.B. UTILIZE POST-HARVEST PRODUCTION TO REACH NEW MARKETS**

### **Sub-Task 2.B.1. Provide post-harvest handling training at demo sites.**

To complement demo site training sessions focused on horticulture production (Component 1), AVC will provide expanded post-harvest handling training. AVC will provide expertise on pre-cooling, sorting, grading, and packaging and technical and limited goods assistance to reduce post-harvest losses both entering into and exiting from the cold store. Our support will include research, technology/ equipment demonstrations, and training and capacity-building support to cold chain components with producers on-farm, cold stores, the transport sector (e.g., refrigerated trucks), and the retail sector (e.g. supermarkets).

AVC will take seasonality and gender needs into account when conducting harvest-time and post-harvest training sessions for producers with other value chain actors. We will design AVC training programs with end markets in mind: customers domestically and internationally have different requirements for varieties, packaging, cold chain requirements, etc.

The following training programs at demo sites are being planned:



- Grape storage: high-tech grape storage pads;
- Harvest training programs on specific value chains;
- Sorting, grading, and packing training;
- Specific cold store trainings (as planned in Task 2.A.);
- Forced air cooling technologies;
- Introduction of fruit drying technologies (i.e. apples, grapes); Dipping oil raisin drying
- Modern Packaging;
- Other post-harvest technologies, specific for each value chain.

### **Sub-Task 2.B.2. Plan international exchange programs to Turkey and India.**

In Year 1, AVC, supported by subcontractor GCCA, will begin assessing the possibility for two international post-harvest and cold chain exchange visits to Turkey and to India. AVC expects the GCCA, with broad capacity in post-harvest technology and cold chain management, to host the exchange program to Turkey, and for Grapage to facilitate the program in India. AVC expects to learn best cold storage (as well as other post-harvest) practice for cherries and apricots in Turkey (May or June) and for grapes in India (February or March). As we begin discussions with the host international partners, we will gain clarity on whether the AVC Activity will be able to conduct these programs in Year 1, or later in Year 2. We plan to invite approximately 8-10 clients to participate in each of these exchanges. Participants in these exchange programs will be requested to cost-share on the expense of conducting such exchange programs, requiring them to be financially vested in the learning process. The AVC will pay the air ticket and visa cost of private sector participants and all expenses for public sector participants. In the past ALP organized study tours to India, and familiar with the logistics. One of AVC's technical staff will accompany the group during the trip as an expert and interpreter.

### **Sub-Task 2.B.3. Develop commercial opportunities for the agro processing sector**

Given the country's potential to develop into a major food exporter to Central and South Asia, Russia, and Eastern Europe, the demand for modern packaging and processing equipment will greatly expand. In Year 1, AVC will begin taking advantage of the fact that the food processing industry is one of the fastest developing sectors of the Uzbek economy. AVC will identify and develop relationships with 104 processing plants earmarked for renovation and upgrading in the recent GOU's decree. AVC will begin developing profiles for these plants. Out of these 104 companies, AVC will determine which ones are the best to work with, what their needs are and how we can support their modernization and marketing efforts. This will be done by improving the cold store operators human capacity including assisting them in building on their marketing, branding, and certification needs to meet market demands. AVC will focus on capacity building of the processors by bringing foreign experts or facilitating them to attend trade fairs. AVC might provide them with minor tools or equipment that could be used at the processing plant.

There is high demand for packaging materials, such as cardboard, paper, glass, aluminum foil, and shrink wrap, but these materials are not produced in-country. AVC will prepare documentation necessary to review Uzbekistan's F&V processors (juicing, canning, drying, puree, etc.), as well as develop documentation for their marketing (Jim Krigbaum) and processing and engineering campaigns (Mark Close). AVC will provide technical assistance to the processors to implement agreed-upon activities once the review of processors is complete; this support may include group training sessions followed up with on-site one-on-one technical, marketing, and managerial support.

In addition, in Year 1, AVC will capitalize on previous investments into small-scale household processing for women done by USAID-ALP. The next step would be to help women commercialize their current household-level low-tech production. To take advantage of this opportunity, AVC will begin working with AWE to link women processors with entrepreneurship and marketing courses that the Association currently offers. Also, we will use our network to recommend potential sources of credit available for agriculture actors in Uzbekistan, to enable aspiring entrepreneurs to start their businesses,

## COMPONENT 3: FACILITATE MARKET LINKAGES

**Staff assigned:** Acting (Proposed) Component Lead (Ulugbek Bekchanov), GCCA Lead (Mumin Isamiddinov), 20/20DC Team

**Rationale:** Both the domestic and international markets offer major opportunities for growth in the horticulture sector (See Annex 5): Major exported value chains and top destinations). Uzbek supermarkets cite a growing tendency for local producers to compete with imports for shelf-space. Leading supermarkets in Tashkent report that not only fresh but also processed F&V products (juice) are becoming increasingly local, with as much as 60 percent of their supplies coming from Uzbekistan. In Year 1, AVC will work with Uzbek supermarkets and their supplier base on improving the quality of the target value chains to ultimately impact food production standards as well as their bottom line. In addition, AVC will begin working on diversifying end-markets for Uzbek firms beyond the Former Soviet Union, and explore new market opportunities in South Asia, the Middle East, the EU, and East Asia.

### TASK 3.A. CREATE NEW LINKAGES IN THE DOMESTIC MARKET

#### **Sub-Task 3.A.1. Build linkages between producers and local supermarkets.**

Despite the rapid growth of the food retail sector in the past five years, supermarket supply chain networks are still very traditional: markets only purchase from farmers they know personally, even if these business relationships are not economically optimal. In Year 1, AVC will begin market development assistance and training to improve the supply, quality, and packaging of fresh produce from farm enterprises, consolidators, and cold store operators. This initial task of developing the training programs is going to be the first step toward demonstration to the retail sector of how our assistance will have a positive effect on markets' bottom-line leading to the development of a more diversified supplier base.

Guided by 20/20DC's VP Shawn Dooley, an expert on the retail sector, AVC will design and initiate training programs for processors and producers on marketing, sales and production and post-production quality requirements demanded by the retail sector in Uzbekistan, and especially in Tashkent. Marketing and procurement representatives from Tashkent's leading supermarket chains – Korzinka and Makro – will be invited to participate in the training design and, possibly, in conducting training programs themselves. The training programs will demonstrate how to handle produce that it could be sold on supermarkets' cool shelves, and what the packaging and labeling requirements are. AVC will also conduct training for supermarket staff in basic horticulture handling to ensure proper handling of produce throughout the value chain as well as merchandizing tied to holidays and sale events that would improve product placement in retail outlets of specific F&V products. AVC will pay specific attention to USAID's gender equity requirements by introducing provincial female agribusiness owners to supermarkets' requirements. We will begin developing a strategy to include professionalizing women-led businesses through training and technical support, providing assistance and support in helping them both improve and access new services, markets and clients in different aspects of the value chain.

#### **Sub-Task 3.A.2. Take advantage of local trade events to build market linkages**

World Food Uzbekistan will occur in Uzbekistan in March, 2016. AVC will take advantage of this event to help build linkages among AVC value chain participants. Guided by 20/20DC, AVC will assist in

designing value chain actors' exhibition stands to showcase their products, depicting entire chains, from orchard/vineyard establishment to production of high-quality produce/products and their storage and sale. AVC will also provide some training to the event participants. AVC will provide all interested participants in these events with a free downloaded copy of the MEVA app so that the participant could benefit from the experience of USAID-ALP and AVC.

### **TASK 3.B. CREATE MARKET LINKAGES WITH NEW FOREIGN MARKETS**

#### **Sub-Task 3.B.1. Provide export courses to assist in entering new markets.**

In Year 1, together with the EPF staff AVC will begin providing training programs to potential exporters, including to women entrepreneurs, based on EPF existing services materials and 20/20DC's horticulture sector export training courses. Courses will include:

- Export 101 and 102 to develop skills in assessing readiness to export, adopt market research techniques, properly execute sales and draft shipping documentation, refine sales partner selection, and advance pricing strategies and payment options. The courses will take place in synergy with World Food Uzbekistan in March 2016.
- AVC will provide tradeshow training courses for companies identified as having the greatest opportunity for exporting their products. The course will cover all aspects of a tradeshow from selecting the right show to pre and post-show activities. AVC will utilize the international tradeshows described in Sub-Task 3.B.2 as a foundation for market research from which to build future support.
- Packaging and Quality Control to develop deep understanding of "sellable" packaging as well as quality control and management systems to help adopt HACCP and other appropriate processing and handling standards. This training will occur in the month of March 2016 linking it to World Food Uzbekistan (see below).
- Export Documentation will help participants navigate Uzbekistan's current export process. This training will occur in conjunction with World Food in Uzbekistan during March 2016.
- Pricing Strategy and Price Forecasting will cover forecasting the cash flow and working capital demands of exporting in the months of April 2016.

AVC plans to conduct Export 101, 102 and Trade Shows/Trade Missions courses so that participants in the courses could take advantage of trade shows in Uzbekistan (Sub-Task 3.A.2) and abroad (Sub-Task 3.B.2.) Scheduling and duration of these courses will precede some of the trade events discussed.

#### **Sub-Task 3.B.2. Develop relationships with buyers in new markets.**

As soon as the MOU between USAID and GOU is signed, AVC will re-launch USAID's relationship with the Export Promotion Fund of Uzbekistan started under USAID-ALP. AVC will conduct a kick-off meeting in Tashkent to sign an MOU, and then meet with them quarterly to discuss specific-trade related topics looking for where synergy is most likely and generating GOU buy-in. During these meetings, AVC will also consult the EPF on the specific needs of the international horticultural industry. Working through the EPF to ensure sustainability of service provision, AVC will identify and engage "export champions"—at least one in each province—and support them as trailblazers for other interested exporters. AVC foresees that the EPF will assist export champions and others in finding new customers as the GOU agency authorized to access trade attachés in Embassies of Uzbekistan around the world;

attending trade shows; and navigating the administrative processes involved in exporting (including Uzbekistan Customs, needed certifications, etc.).

In Year 1, AVC will assess the value of attending the following listed trade fairs for the purpose of establishing long-lasting relationships with buyers abroad and will propose cost-effective ways to attend if appropriate. In Year 1, AVC will attend the following trade shows as observers, (not to exhibit), to explore the potential for effective participation of Uzbek men and women exporters in these markets by obtaining information on competing supplier products, pricing, quality, and packaging, as well as meeting with potential buyers of Uzbekistan products and learning of their standards, certifications, and other necessary trade matters.

- World Food Kazakhstan (November 2015); - Traditional export market (gate for Russian market)
- Fruit Logistica (Germany, February 2016); - Western market (EU through Latvia)
- ANUGA 2015 (Cologne, Germany 10-14 October 2015) (For mostly processors)
- Riga 2015 (Latvia, 02-05 September 2015)
- Prodexpo 2016 (Russia, February 2016); (Traditional export market – very crucial)
- Seoul Food (Korea, August 2016); (Eastern market)
- iFresh 2015 (China, 19-21 November 2015)
- Annapurna World of Food (India, September 2016). (Southern market)

Attendance will be cost-shared with the beneficiaries: AVC plans to provide the cost of air tickets and visas and the participants will cover other associated costs. All costs will be covered for public sector participants. We plan to invite approximately 8-10 clients to participate in each of these exhibitions.

AVC will cooperate with Uzbek horticulture exporters that could potentially benefit from these events. We will learn from their experience and, if successful, will begin to recruit them as export champions whose experience is valuable to other Uzbek value chain participants. This experience will also be used when AVC trains other participants from Uzbekistan who have not had prior trade show experience. AVC will explore ways to favor disadvantaged exporters, including smallholder producers, women and producers from remote districts, to participate in those trade shows and maximize their export potential.

AVC will also begin setting example to horticulture value chain participants by promoting deals with individual buyers. We are establishing a working group under Component 3 that will focus exclusively on generating sale deals for Uzbek companies. This working group would include AVC Component 3 team, 20/20DC team, producers, exporters, cold storage owners and other donors when needed. In addition to generate new sales this working group will meet regularly to discuss common issues and goals and identify solutions and effective marketing channels.

Also the Component 3 team will track potential sales opportunities that exist in domestic and international markets by making contacts with potential buyers, monitoring trade shows and trading web sites as well as tapping into AVC stakeholder network. The working group will match identified opportunities with known potential sellers (i.e. producers, exporters, traders, etc.) We will begin developing a database of buyers and sellers that will include a profile of individual companies. AVC subcontractor 20/20DC will help prepare the template for the interviews. This database will help AVC develop a matchmaking process that will facilitate trade contacts between buyers and sellers.

Because Uzbekistan is a double-landlocked country, transportation is a major constraint in terms of exporting Uzbek F&V to the international markets. This is especially true when the products are too sensitive and highly perishable. To solve that issue, AVC will seek cooperation with *Korean Air's* cargo hub at the Navoi International Airport and the Navoi Free Industrial Economic Zone. The AVC Activity will explore a possibility of establishing a public-private partnership with *Korean Air* to achieve that goal.

*Korean Air* has a transit hub at the Navoi International Airport with 100,000 ton cargo carrying capacity, 400 ton cold storage capacity, and two aircraft freighters that could adjust temperatures to the needed requirement and travel to eight destinations including Amsterdam, Dubai, Tokyo, and Korea. *Korean Air* has started to explore opportunities to backhaul its flights to Korea with Uzbek F&V (beginning with melons and cherries). AVC will cooperate with *Korean Air* in:

- Exploration of new markets (EU, Korea, Japan, Middle East)
- Postharvest handling and adding value to the selected products (melons and cherries)
- Quality and quarantine issues for Korean market (meeting market requirements for selected commodities)
- Introduction of additional products such as table grapes and raisins into Korean Market.

### **Sub-Task 3.B.3. Introduce a process for modifying products to meet new market requirements.**

In Year 1 following the Horticultural Value Chain Mapping and F&V Processors Market Assessment, AVC will start helping AVC firms adjust to changing market specifications. We will identify buyers and sellers willing to take more than ordinary risk to make first demonstration deals happen. We will help develop processing, safety, and packaging procedures and protocols for production required by specific end-markets. To do this, AVC will engage processors, growers, and exporters through courses (see Sub-Task 3.B.1) and other means. In addition, we will explore new technologies that can benefit exporters (such as affordable liquid ice technologies that help significantly expand the shelf-life of F&V when exported fresh). Next, we will help exporters organize supply according to the specifications of the end-markets and develop a customer service follow-up method to ensure that the sale met the buyer's expectations. Finally, the AVC export team will work with both the buyer and the seller to assess early problems and find solutions to inform repeat sales deals. This will help us design a customer follow-up method that can help sellers retain market share through repeat rather than one time sales. We will inculcate the customer follow up method into our training curricula in subsequent AVC years.

### **Sub-Task 3.B.4. Improve exporters' compliance with ISO, HACCP, and Global GAP standards including Uzbekistan sanitary and phytosanitary requirements**

Different markets have different requirements in terms of standards compliance. AVC will take into consideration of both domestic and international markets' requirements and will work closely primarily with Uzstandard and the Tashkent Center for Testing and Certification (TCTC) as well as with AWE, EPF, CCI and other affiliated organizations in order to increase the awareness of food safety and the quality of Uzbek firms' products based on the markets they are in.

Those Uzbekistan firms that are already exporting to markets in Europe and Asia have their compliance; it may be unrealistic to expect smaller firms used to exporting to Kazakhstan and Russia to implement the often costly and complicated compliance processes, but efforts will be made to offer them access to training on both local and international market entry requirements.

Following its series of assessments, AVC will identify the needs for value chain actors to comply with national and international standards. Those who will potentially benefit from such compliance will be linked with organizations that provide compliance assistance. The government agency responsible for standardization—*Uzstandard*—established the Bureau for Export Assistance to advise exporters on international certification requirements in destination countries, including information on proper packaging and labeling. We will work closely with the Bureau and the EPF to train the companies on both the Uzbek sanitary and phyto-sanitary requirements, and the international standards such as HACCP, ISO, and Global GAP. We will also adopt the Bureau’s brochures on compliance with international standards for use by assisted SMEs and roll out its use to AVC-supported firms.

Furthermore, we will link with some of the existing local consultancies that provide the coursework on HACCP, ISO, and Global GAP. A number of local firms also provide audit, training, and certification of SMEs’ food safety and management processes. AVC will identify these providers in Year 1 to plan training programs for potential exporters as well as for those who supply the export sector with produce and processed foods. In addition, AVC will begin a dialogue with the Association GS1 Uzbekistan, which provides manufacturers with EAN bar codes to address the lack of internationally accepted bar codes for food packaging.

#### **Sub-Task 3.B.5: Provide further assistance to the Tashkent Food Certification Center**

During past assistance by the AgLinks project, procurement was conducted to purchase a High Performance Liquid Chromatography (HPLC). This was affiliated testing equipment and training for the Tashkent Center for Testing and Certification (TCTC). The TCTC had agreed with AgLinks to co-share procurement of laboratory equipment necessary to test for inorganic and organic contaminants in agricultural and food products that impact food safety. TCTC procured an Atomic Absorption Spectrophotometer (AA) for testing inorganics (ex., trace metals, etc.) and AgLinks procured an HPLC for organics (ex., crop protection chemicals, mycotoxins, melamine, etc.). The HPLC was germane to the AgLinks project objectives to assure safe use of crop protection chemicals (ex., pesticides, insecticides, fungicides, etc.) and to limit fungal contaminants in food exports, especially mycotoxins, while also providing the capacity to test for melamine. This equipment was for the detection and monitoring of food toxins in dried products for export as a food safety standard compliance. AVC value chain assessment for fruits and grapes has determined that dried products such as raisins are a high value product with promising markets. Therefore, the AVC will contact the Tashkent Center for Testing and Certification (TCTC) to investigate technical assessment and training needs to fully utilize the previously provided equipment, with the intent of assisting in the increase and value of dried fruits, and any other products that require food toxin testing and monitoring.

## COMPONENT 4: LINK EDUCATIONAL INSTITUTIONS WITH PRIVATE SECTOR DEMAND

**Staff assigned:** DCOP and Acting Component 4 Lead (Asror Nazirov)

**Rationale:** AVC offers a timely opportunity to play a crucial role in ensuring that educational institutions are fostering the next generation of certified nursery operators, horticulture growers, service providers, cold storage owners, agro-processors, and exporters. AVC will work closely with the MAWR and the Ministry of Higher and Secondary Specialized Education to develop relationships with Uzbekistan's agriculture universities and vocational colleges to support demo plots, faculty exchanges, MEVA app and training manual dissemination, internships, and field extension practicums with service providers. Through the following Year 1 tasks, AVC will begin laying the groundwork for a meaningful, lasting connection between demand and supply in the labor market. Please refer to Annex 8 for a list of Uzbekistan agricultural universities and vocational colleges to be assessed for possible assistance.

There are 56 vocational colleges located at AVC's target geographic districts somehow related to Agriculture like Jalakuduk Agro-industrial College, Kitab Agro-business College, Khatirchi Agro-service College, and Kibray Agro-commerce College etc. During first year of the project AVC will explore which colleges among above mentioned 56 have training programs designed for Horticulture value chain actors. When appropriate colleges are identified AVC will approach Ministry of Higher and secondary specialized education requesting Ministry's permit to work with selected colleges.

Meantime AVC will work with Ag colleges through AG Universities. According to Presidential Decree #PP-1761 from May 28, 2012 "About Measures for Further Improving the System of Training and Recruiting of Qualified Teaching Staff for Secondary Special, Professional Educational Institutions" all three Ag Universities - Tashkent, Andijan and Samarkand Universities are responsible for training of Ag Colleges professors in the Ag sector. The AVC will support Ag Universities to update, amend and develop new training programs and related education materials designed for Ag College professors on the base of an Educational Needs Assessment. Special attention will be focused on improving the access of females to participate in any of the AVC activities conducted in this component.

### **Task 4.1. Develop hands-on value chain-focused learning at universities and vocational colleges.**

In Year 1, AVC will initiate the process of establishing demo sites at three agrarian universities. AVC will conduct kick-off meetings with TashSAU's Department of Horticulture and Viticulture, Samarkand Agricultural Institute's Department of Fruit and Vegetable Growing, and Andijan Agricultural Institute's Agronomy Department, and agree on the precise timing and technical assistance that will be needed to establish intensive orchard demo plots (one per university). AVC will demonstrate proper crop management technologies to teach modern horticulture planting, irrigation, pest and disease management, pruning practices as well as post-harvest handling topics (pre-cooling, sorting, grading, handling, and packaging). AVC assumes, based on the Activity's discussions with MAWR, that universities will contribute to this task by ensuring that these demo plots are given an appropriate area and have access to the necessary inputs (water, electricity, university staff to manage the plots, etc.)

AVC envisions that this knowledge dissemination process will be planned according to universities' existing education curricula. For instance, universities often conduct open lecture where they invite representatives of private sector and other practitioners. AVC will support such practical education by assisting universities with engaging service providers such as local nursery operators, Konsalting Madad



Hamkor, and the producer technology groups from nearby districts to conduct training for the students, allowing them to meet potential new hires. AVC will invite female trainers (e.g., sorting/grading groups and lead farmers) to co-facilitate training sessions at universities and vocational colleges as well to introduce more female graduates to female business leaders in the agriculture sector for mentoring and potential linkages post-graduation.

To begin introducing students to the realities of modern value chain technologies and demonstrate the connection between market demand and food production, AVC will help universities to conduct field trips to project demo sites and AVC partner facilities (i.e. participating processing firms) where students will view crop management, food-processing (canning, jam preservation, etc.), cold chain and other value chain technologies. AVC envisions that in its first year, we will be able to assist university with the conduction of 6 of such field trips (2 per university).

#### **Task 4.2. Assist universities to use modern knowledge in education.**

AVC understands that the knowledge generated during the life of the Activity will be important for university to tap into. Toward this end, in its first year AVC will begin discussions with universities, vocational colleges, the MAWR and Ministry of Higher Education's staff to develop educational materials using AVC, as well as USAID-ALP's, experience. In addition, since Uzbekistan's vocational college professors have to periodically confirm/upgrade their qualifications at universities, AVC will also indirectly reach a wider audience of professional education providers with a direct link to private agricultural employers.

In Year 1, AVC will begin to introduce the MEVA app to students. ICT-savvy youth can widely disseminate the app via Bluetooth, learn the modern concepts, and, upon graduation, apply this learning in a variety of on-farm and agribusiness employment opportunities. University students and professors introduced to MEVA under the Continuing Education program will be used as feedback providers to improve the app over time. We will also share with universities and vocational colleges all relevant MEVA manuals developed under both ALP and AVC.

Capitalizing on the fact that there is still gender equality in education in Uzbekistan, AVC will ensure that our work will gauge cultural norms of male vs. female student participation at universities.

#### **Task 4.3. Facilitate short courses for professors and faculty exchanges from international universities.**

AVC will facilitate opportunities for short courses for Uzbek university professors, working closely with the MAWR to ensure a rigorous selection process similar to the standards for exchange visit participation. In Year 1, AVC will begin to explore contact for such professor exchange programs. For example, Akdeniz University's Department of Horticulture provides five-day courses such as Postharvest Technology Short Course and the Short Course on Fresh Cut Produce Processing, co-taught by University of California-Davis horticulture professors. Horticulture departments of leading universities in India offer potential exchange opportunities on key production, post-harvest, and agricultural marketing topics. Potential exchange opportunities will include foreign partner universities sending their professors to conduct lectures at agrarian universities in Uzbekistan. This potentially can be a quicker route for Uzbekistan university staff to take advantage of international experience. In its first year, AVC will begin collaboration with agricultural universities in Uzbekistan and, possibly, start reaching out to partner universities in Turkey and India to identify such opportunities for both types of exchange programs. We will actively recruit women professors from Uzbekistan to participate in such exchange programs.

**Task 4.4. Support internships/apprenticeships for students and graduates.**

To complement hands-on learning at the private partner facilities, demo plots and training centers, internships offer great opportunities for students to gain real-world experience in the agriculture sector while making contacts with potential future employers. Internships are already required in the Uzbek university system, but universities have noted that they have challenges with developing strong connections with appropriate agribusinesses. In Year 1, AVC will begin linking universities and vocational colleges with the activity's target value chain participants—research institutes/tissue culture lab, nursery operators, integrated orchard growers, service providers, consolidators, cold storage owners, agro-processors, and exporters—and work with its partner organizations (e.g. AWE) to strengthen the internship programs at the agrarian institutes.

# WOMEN IN AGRICULTURE

AVC presents significant opportunities to increase employment and incomes for Uzbekistan’s women. Despite some setbacks in the past 25 years, agriculture still remains one of the two sectors where gender imbalance in employment is lowest (46 percent of employees in agriculture are female—that percentage is much lower than in many other sectors). Export, shuttle trading, and the import and export of small quantities of goods for sale across regional borders also comprise an informal industry in which women are highly visible. AVC has woven gender inclusion throughout its component tasks and sub-tasks, and will apply the principle throughout AVC implementation. Key elements of our integrated gender approach. Specifically, the AVC Activity gender inclusion strategy will include professionalizing women led businesses in training and technical support, providing assistance and support in helping them both improve and access new services, markets and clients in different aspects of the value chain. This will be accomplished by:

- *Engage women in the design and implementation of activities.* We will ensure that female farmers, processors, and traders, as well as businesswomen, have the opportunities and the tools required to be effective leaders. Recognizing the different perspectives and priorities of stakeholders, illustrative tasks embedded within our approach to AVC’s four components describe various points of entry. A focus across all tasks will be to provide women with opportunities to network with their male counterparts, both on the production and on the marketing sides and to build linkages among them.
- *Increased attention and assistance will be planned and implemented to enhance the impact of household processing technical assistance and training with the intention of developing local markets for household processed products.* This business approach will enable women to participate in the agribusiness arena while also generating sales and household income. Branding and marketing assistance will be critical to promoting the sale of household products.

As demonstrated by individual sub-tasks described in the Technical Work Plan sections, AVC’s approach to gender integration includes working closely with existing local organizations whose goal it is to mainstream gender into the economy. Groups, such as AWE, will be included into AVC field activities so that they can assist AVC female participants throughout the value chain to maximize their market potential. By integrating AWE’s capacity building potential with AVC’s production, harvest, post-harvest handling as well as marketing and sales activities, AVC will generate cross-sectoral synergies and improve the economic conditions for men and women in Uzbekistan. We will assist AWE with developing new training modules for aspiring and existing female entrepreneurs so that they could take advantage of current market opportunities. Our aim is to help women in agriculture who are currently performing low-skilled functions (i.e. sorting, grading, packing, harvesting) to acquire new, higher level skills that will allow them to take steps in a new, more economically opportune, direction.

The Table below highlights illustrative strategies for integrating gender considerations into AVC interventions, broken down by component.

**Table 9: Considerations for women under AVC Components**

AVC Component	Potential Gender Issues During Implementation	Mitigation Measures to Address Potential Gender Issues	Partner/ Counterpart
1. Improve the Quality and Volume of Agricultural	<ul style="list-style-type: none"> <li>■ Challenge in identifying and locating lead female farmers and women-owned</li> </ul>	<ul style="list-style-type: none"> <li>■ In new districts, work with AWE to identify possible female participants for AVC training</li> <li>■ Ensure that female staff engage with female</li> </ul>	<ul style="list-style-type: none"> <li>■ AWE</li> <li>■ Service providers</li> </ul>

<b>AVC Component</b>	<b>Potential Gender Issues During Implementation</b>	<b>Mitigation Measures to Address Potential Gender Issues</b>	<b>Partner/Counterpart</b>
Production	<ul style="list-style-type: none"> <li>off-farm business enterprises, especially in new districts</li> <li>■ Limited female participation in exchange visits</li> <li>■ Limited active participation by female farmers</li> </ul>	<ul style="list-style-type: none"> <li>community members to invite them to training sessions</li> <li>■ Use culturally sensitive guidelines for crop management activities that incorporate productive roles of men and women in the household</li> </ul>	<ul style="list-style-type: none"> <li>■ MAWR</li> </ul>
2. Improve Post-Harvest Handling and Production	<ul style="list-style-type: none"> <li>■ No female cold storage operators exist</li> <li>■ Limited female participation in post-harvest/cold chain-focused exchange visits</li> <li>■ Limited new employment opportunities for women in traditional rural communities</li> </ul>	<ul style="list-style-type: none"> <li>■ Host Cold Store Operation workshops in each AVC province</li> <li>■ Ensure that female staff engage with female community members to invite them to training sessions</li> <li>■ Work with the MAWR to balance exchange visit participant selection criteria with a review process that encourages women to apply</li> <li>■ Explore professionalizing women-led sorting and grading groups</li> </ul>	<ul style="list-style-type: none"> <li>■ AWE</li> <li>■ Consolidators</li> <li>■ MAWR</li> </ul>
3. Facilitate Market Linkages	<ul style="list-style-type: none"> <li>■ Limited female participation in post-harvest/cold-chain-focused exchange visits</li> <li>■ Limited female participation at trade fairs</li> <li>■ Limited new employment opportunities for women in traditional rural communities</li> </ul>	<ul style="list-style-type: none"> <li>■ Work with the MAWR to balance exchange visit participant selection criteria with a review process that encourages women to apply</li> <li>■ Identify female business owners in the provinces to bring to trade expositions</li> <li>■ Introduce provincial female agribusiness owners to supermarkets' requirements</li> <li>■ Introduce female exporters to export course training programs</li> <li>■ Integrate informal vendors and traders into mainstream AVC interventions</li> </ul>	<ul style="list-style-type: none"> <li>■ AWE</li> <li>■ Consolidators</li> <li>■ MAWR</li> </ul>
4. Link Educational Institutions with Private Sector Demand	<ul style="list-style-type: none"> <li>■ Limited female student participation at university demo sites</li> <li>■ Few female professors involved with study tours and exchange visits</li> <li>■ Limit internship/apprentice opportunities due to entrenched bias by male-dominated agribusiness sector</li> </ul>	<ul style="list-style-type: none"> <li>■ Ensure that female trainers (e.g., from sorting/grading groups and lead farmers) are invited to co-facilitate training sessions at universities</li> <li>■ Actively recruit female professors for exchange visits</li> </ul>	<ul style="list-style-type: none"> <li>■ Agrarian universities</li> <li>■ MAWR</li> <li>■ Ministry of Higher and Secondary Specialized Education</li> </ul>

Specific gender-related activities are described in the corresponding Activity Components sections in more detail.

# MONITORING AND EVALUATION ACTIVITIES

## **FINALIZING AM&E PLAN AND ESTABLISHING THE BASELINE.**

AVC will review and adjust indicators and targets presented in the proposal to best fit the Activity purposes. The effort will be made to use indicators from USAID's Master Indicator List (MIL), Economic Growth section. Necessary modifications will be made based on USAID's feedback.

The baseline data for relevant indicators will be collected from value chain actors, including but not limited to service providers, producers and processors. Data collection will be done through the network of Project Coordinators and Activity Managers, whichever is appropriate.

## **CONTINUED DATA COLLECTION, ANALYSIS, AND DATA-DRIVEN DECISION-MAKING.**

Data will be collected and analyzed continuously, to feed the project decision making needs, conducted by the Monitoring Evaluation and Learning team (ME&L). The AVC's M&E system will be based on the approach that allows AVC to 1) enable ongoing adaptive learning to optimize performance toward achieving project targets, 2) foster meaningful stakeholder engagement, and 3) measure gender disaggregated and regional impact. Data and its analysis will be fed into the project reports (quarterly and annual).

AVC's ME&L Director will train Project Coordinators and Activity Managers on proper conduction of continuous M&E activities. AVC plans on hiring Provincial Coordinators and Activity Managers and providing the training immediately after USAID signs the MOU with the GOU.

## **REVIEW OF M&E DATA TO SUPPORT ADAPTIVE LEARNING FOR YEAR 2 WORK PLANNING.**

Quarters 3 and 4 of the FY 2016 will be devoted to preparing information for the annual report as well as making necessary adjustments if required. The recommendations will be made to Technical Team to be considered during the development of the AVC's Annual Work plan FY 2017.

## **COMMUNICATIONS AND PUBLIC OUTREACH**

The AVC Communication and Public Outreach Specialist will design, draft, manage, and coordinate public information and outreach tasks related to the project. On a regular basis he will develop news stories, success stories, press releases, and other appropriate material and disseminate it among target audiences. The communications specialist will also be responsible for assembling and providing a weekly highlights report to the USAID Uzbekistan mission at the end of every week. These will consist of events conducted, important impact achieved, etc.

Efforts will be made to invite local mass media to the project events to ensure wide publicity of the project activities and successes. In addition, information on events and accomplishments will be posted on such Internet platforms as Twitter and Facebook, as well as on a project website that will be developed during FY 2016. These activities will start immediately after the registration of the project.

# ANNEX 1: UZBEKISTAN FRUIT AND VEGETABLE HARVEST CALENDAR

	<b>Fruits</b>	<b>Early Varieties: Beginning of the season</b>	<b>Mass Production</b>	<b>Late varieties End of the season.</b>
1	Cherry*	May 10	May 20 – June 25	July 5-10
2	Apricot	May 5	May 20 – June 30	July 5
3	Peach	June 20	July 10 – August 20	September 15
4	Plum	June 10	July 5 – August 20	September 20
5	Apple*	July 15	August 15 – September 25	October 25
6	Pear	August 25	September 10 – October 20	October 25
7	Grape	June 15	July 20 – October 1	October 25
8	Pomegranate	August 15	September 15 – October 20	October 30
9	Persimmon	September 10	September 20 – October 25	November 10
	<b>Vegetables</b>	<b>Early Varieties: Beginning of the season</b>	<b>Mass Production</b>	<b>Late varieties End of the season.</b>
1	Tomato*	June 1	June 10 – October	October 5
2	Cucumber*	May 1	May 5 – September 15	September 25
3	Potato	May 20	June 20 – August 10 October 10 – November 1	November 10
4	Onion	May 20	June 25 – September 25	October 10
5	Cabbage	May 5	June 20 – November	November 10
6	Carrot	May 5	June 10 – November 10	November 15
7	Paprika*	June 10	June 15 – October 10	October 20
8	Eggplant	June 10	June 20 – October 10	October 20
9	Garlic	June 10	June 20-25	July 5

- Cherry\* - There are earlier varieties than indicated in the table, but these are not good quality, and not exported, and they are consumed locally.
- Apple\* - there are earlier varieties than indicated in the table, that ripen in late May and early June but those earlier varieties are consumed locally and not exported at all.
- Tomato\*, Cucumber\* and Paprika\* - outdoor products. In greenhouse conditions those products can be grown year around without any obstacles.

# ANNEX 2: WORK PLAN TIMELINE

Activity Assessments	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Monitoring & Evaluation (M&E) Activities																
<b>1. Horticultural Sector Stock-Taking/Commodity Selection</b>																
Develop sub-criteria for selection and collect data. The assessment will take into account opportunities in the domestic and international markets																
Analyze the data and select value chains																
<b>2. Value Chain Analyses</b>																
Value Chain Mapping:																
- Collect data from secondary sources, key informant interviews and surveys																
- Organize data along key functions (i.e. input supply, production, post-production, processing, wholesale, export, retail, etc.)																
- Draw the maps with end markets and functions																
End market analyses, including for fresh and processed F&V channels																
Market constraints and opportunities analysis, opportunities and constraints for upgrading, including in the regulatory and supply chain environments																
Competitiveness Strategy																
- End Market Competitiveness Plan																
- Upgrading Plan																



- Plan to Sustain Competitiveness																
<b>3. Educational Opportunities Assessment</b>																
Conduct an assessment of current programs available at accredited state universities to look at agricultural and business education programs																
Conduct an assessment among recent graduates of these universities to understand their employment situation																
Conduct an assessment of agribusinesses, trade firms and retail to understand what skills are in demand																
Draft a gap analysis and provide specific recommendations for interventions																
<b>4. Activity Mapping</b>																
Conduct a kick-off meeting with MAWR to discuss mapping																
Select a mapping team (either in-house, MAWR or external provider)																
Begin monitoring project and other donor activities for mapping																
<b>Component 1: Improve the Quality and Volume of Agricultural Production</b>	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Monitoring & Evaluation (M&E) Activities																
<b>Task 1.1 Improve On-Farm Productivity</b>																
<b>Sub-Task 1.A.1. Provide technical assistance in best agricultural practices at demo plots</b>																
Identify and engage leading growers interested in hosting demo plots																
Carry out value chain-specific technology training programs																
1. Grapes																
- Frost Damage Mitigation																





Mirzayev Institute																
Conduct tissue culture lab training																
Establish a greenhouse for the tissue culture lab for rootstock adaptation outside of Lab																
- Collection and systematization of technical data about greenhouse for tissue culture labs.																
- RFQ to potential equipment suppliers; suppliers technical due diligence																
- Bidding process and award procedures																
- Greenhouse construction; resources infrastructure development																
- Conduct training for greenhouse staff on greenhouse management and service provision																
Develop a program and a schedule for specific training programs with Mirzayev Institute																
<b>Sub-Task 1.B.2: Develop the capacity of horticulture input providers to expand consulting services</b>																
Identify and engage private firms and certified nursery operators to carry out relevant consulting services																
Develop and conduct technical and managerial training in collaboration with the identified consulting service providers																
Assist service providers to expand their services to producers																
<b>Sub-Task 1.B.3. Foster a viable local market for quality farm tools and equipment</b>																
Demand: Identify local farm equipment vendors interested in selling quality orchard tools and equipment																
Supply: Identify available quality orchard tool and equipment manufacturers/distributors (DC20/20)																

Link supply and demand through marketing events																
Identify potential local manufacturers for quality orchard/vineyard tools and equipment																
Showcase ALP experience to potential buyers through training/marketing events																
<b>Component 2: Improve Post-Harvest Handling and Production</b>	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Monitoring & Evaluation (M&E) Activities																
<b>Task 2.A. Facilitate the Advancement of Cold Storage Practices</b>																
<b>Sub-Task 2.A.1. Facilitate cold chain demo site activities</b>																
Visit newly established cold storages to find the potential partners for cooperation (including in new target districts)																
Visit ALP partner cold storage facilities to renew the cooperation																
Launch cold storage demonstration site network																
Conduct a kick-off meeting with AWE																
Develop a training program specifically targeting female value chain participants																
Conduct group and one-on-one technical and managerial training programs to cold chain operators:																
- Temperature and humidity control: general																
- Proper storage temperature/humidity levels per crop																
- Limiting cross-contamination																
- Introduction of forced air cooling systems																
Regional round table meeting for cold storage owners																
- Ferghana																
- Tashkent																

- Samarkand																			
- General year-end conference																			
<b>Sub- Task 2.A.2. Facilitate national exchange programs and international cold chain exchange programs for cold storage operators</b>																			
Collect information for NEPs and micro-NEPs																			
Initiate discussion on challenges, issues and way forward with NEPs and micro-NEPs																			
Conduct an initial round of NEPs and micro-NEPs																			
Initiate dialogue and develop an exchange program with partners in Turkey and India																			
<b>2. A.3. Facilitate the establishment of a pay-for-service cold chain service provider</b>																			
Develop sustainability and exist strategy																			
<b>Task 2.B. Utilize Post-Harvest Production to Reach New Markets</b>																			
<b>Sub-Task 2.B.1. Provide post-harvest handling training at demo sites</b>																			
Identify partners for the task																			
Design training programs																			
Carry out training programs on best harvest and post-harvest practices:																			
- Apples																			
- Cherry																			
- Apricot																			
- Peach/nectarine																			
- Plum																			
- Persimmon																			
- Grapes																			
Training on application of sulfur pads for grape storage																			
Household processing training																			
Introduction to fruit sizing/sorting equipment at demo site																			
Introduction to sorting, grading,																			



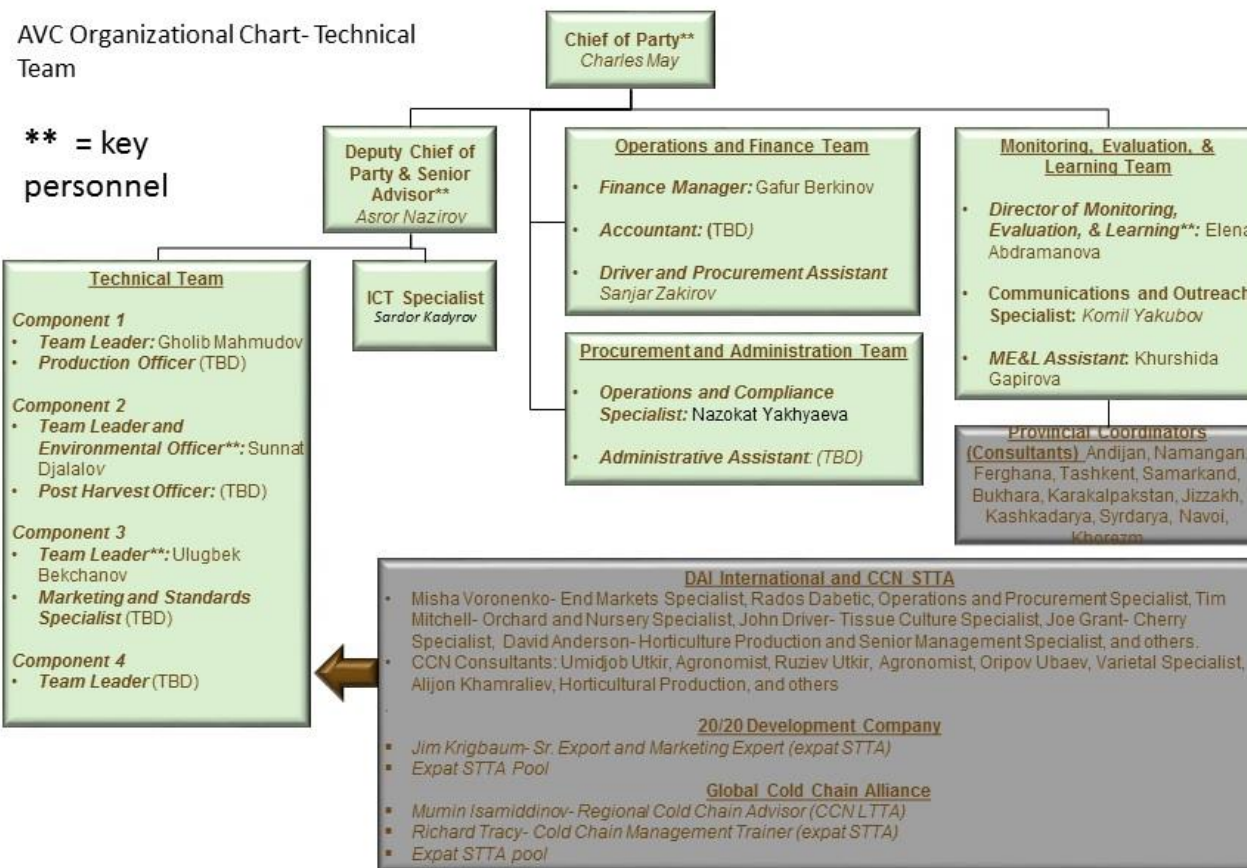
supermarket requirements																	
- Cool shelves effect on sales																	
- Packaging and labeling requirements																	
- Basic horticulture handling requirements																	
<b>Task 3.A.2. Take advantage of local trade events</b>																	
Participate and help participate in World Food Uzbekistan 2016 (March)																	
<b>3.2 Create Market Linkages with New Foreign Markets</b>																	
<b>Task 3.B.1. Provide export courses to assist in entering new markets</b>																	
Provide export courses on:																	
- Export 101																	
- Export 102																	
- Trade Shows and Trade Missions																	
- Packaging and Quality Control																	
- Export Documentation																	
- Pricing Strategy and Price Forecasting																	
<b>Task 3.B.2. Develop relationships with buyers in new markets</b>																	
Conduct a kick-off meeting with Export Promotion Fund																	
Conduct quarterly meetings with EPF on specific export issues																	
Identify and engage export champions																	
Prepare for and facilitate participation of Uzbek sellers in international exhibitions:																	
- Anuga 2015 (Germany, October 2015)																	
- iFresh (China, November 2015)																	
- World Food Kazakhstan (November 2015)																	
- Fruit Logistica (Germany, February 2016)																	
- Prodexpo 2016 (Russia, February 2016)																	







# ANNEX 3: AVC ORGANIZATIONAL CHART



# ANNEX 4: LIST OF COMMODITIES TO BE PROCURED

	<b>COMPONENT 1: IMPROVE THE QUALITY AND VOLUME OF AGRICULTURAL PRODUCTION</b>	<b>Quantity</b>
1	Loppers, different	2000
	Pruners, different	500
	Saw, different	400
	Sharpening tool	1000
	Soil Probe	10
	Portable Soil Water Monitoring Solution	5
	Soil pH and Moisture Tester	5
	Budding knife	200
	Girdling Knife, different	400
	Professional Nursery Grafting Tool Kit	100
	Nursery Grafting Tapes	300
	Fruit Hardness Tester, different	10
	pH/Conductivity/TDS Tester	6
	Set of the trellises, different	6
	Drip irrigation systems	2
	Digital Ethylene Glycol Refractometer	20
	Pheromone traps, different	1000
Greenhouse for the Tissue Culture Lab at Mirzayev Institute and required disposable materials	1	
	<b>COMPONENT 2: IMPROVE POST-HARVEST HANDLING AND PRODUCTION</b>	
2	Hobo - Humidity and Temperature Recorder, different	55
	Thermometers, different	100
	Cool Bots	10
	Accessories for precooling	10
	Corrugated boxes	2000
	Harmful GAS measuring units	10
	Enforced vents	10
	Fruit sizing/sorting line	2
	Fruit sorting/grading stainless table	12
	Sorting tools	10
	Compressor+ Evaporator	10
	Packing shades	10

	Power generator	10
	Humidifying vents	10
	Raisin Drying equipment	2
<b>COMPONENT 3: FACILITATE MARKET LINKAGES</b>		
3	Refractometer for measuring Brix	50
	SO2 pads	30000
	Different boxes and packaging materials	24400
	Nitrate tester for fruit and vegetables	30
	Nano Ice	1
<b>COMPONENT 4: LINK EDUCATIONAL INSTITUTIONS WITH PRIVATE SECTOR DEMAND</b>		
4	Intensive orchard demo plots at AG Universities	
	intensive orchard equipment and materials	3
	Equipping Ag University labs with tools and equipment (TBD0	3

# ANNEX 5: MAIN EXPORTED F&V PRODUCTS AND DESTINATIONS

Value chain	Top Three Markets with percentage of total exports (2014)					
	Destination	Value / %	Destination	Value / %	Destination	Value / %
Stone fruits	Kazakhstan	\$117.6 million (98.1%)	Russia	\$1.64 million (1.4%)	Korea	\$0.5 million (0.5%)
Grapes	Kazakhstan	\$84 million (99.4%)	Russia	\$0.51 million (0.6%)	Latvia	\$0.04 million (N/A)
Raisins	Kazakhstan	\$10.6 million (28.2%)	China	\$8.57 million (24%)	Latvia	\$5.56 million (15.5%)
Cabbage	Kazakhstan	\$27.1 million (96%)	Russia	\$1.1 million (4%)	N/A	N/A
Melons	Kazakhstan	\$26 million (93%)	Latvia	\$0.75 million (2.7%)	Russia	\$0.51 million (1.8%)
Tomatoes	Kazakhstan	\$20.5 million (92.1%)	Russia	\$1.7 million (7.9%)	N/A	N/A
Dried fruit	Kazakhstan	\$17 million (58.9%)	Germany	\$3.1 million (10.6%)	Ukraine	\$1.9 million (6.6%)
Persimmons	Kazakhstan	\$16.6 million (99%)	Russia	\$0.15 million (1%)	N/A	N/A
Carrots	Kazakhstan	11 million (98.4%)	Russia	\$0.12 million (1.6%)	N/A	N/A
Canned vegetables	Turkey	\$8.6 million (95.7%)	Italy	\$0.36 million (4%)	France	\$0.03 million (0.3%)
Juice	Kazakhstan	\$7.9 million (58.6%)	Russia	\$5.5 million (40.6%)	Poland	\$0.84 million (0.6%)
Onions	Kazakhstan	\$6.9 million (94.3%)	Russia	\$0.42 million (5.7%)	N/A	N/A
Cucumbers	Kazakhstan	\$6.7 million (99%)	Russia	\$0.05 million (0.08%)	N/A	N/A
Apples	Kazakhstan	\$4.23 million (99.7%)	Russia	\$0.01 million (0.3%)	N/A	N/A
Peppers	Russia	\$2.1 million (34%)	Kazakhstan	\$1.25 million (20%)	USA	\$1 million (17.1%)

# ANNEX 6: PERFORMANCE INDICATORS AND TARGETS

#	Indicator	Level of Disagg.	Unit and Frequency	Base-line	Y1	Y2	Y3	Y4	Y5 EOP
1.	% change in value of exports of targeted agricultural commodities as a result of USG assistance	Product line, end-market	%, Annually	TBD	10%	20%	30%	40%	50%
2.	% difference in farm yield of participant farms	District, gender of farmer	%, Annually	0	10%	20%	30%	40%	50%
3.	# of private sector service providers offer consulting services as result of AVC implementation	Partner, district, type of service, gender	#, Quarterly	0	5	10	20	30	40
4.	# of new or improved jobs attributable to AVC implementation	District, type of job, gender	#, Quarterly	0	1,100	2,200	3,000	3,800	4,500
5.	# of hectares under improved technologies or management practices as a result of USG assistance	District, specific practice or tool	#, Quarterly	0	2,000	4,000	5,000	6,000	7,000
6.	% of sales attributed to AVC implementation	Type of organization, location, gender, and crop type.	%, Annually	0	10%	20%	30%	40%	50%
7.	# of farmers, processors, and others who have adopted new technologies or management practices as a result of USG assistance	District, gender, technology	#, Quarterly	0	2,000	4,000	5,000	6,000	7,000
8.	Value of new private sector investment in the value chain leveraged by AVC implementation	District, product line, gender, type of beneficiaries	\$, million, Annually	0	1	2	3	4	5
9.	# of institutions that integrated and are using project materials and tools in education process	District, institution, material/tool	#, Annually	0	2	3	4	5	6
10.	# of producers' organizations, cooperatives, trade & business associations, & CBOs receiving assistance	District, type of org, activity	#, Quarterly	0	50	100	150	175	175
11.	# of individuals who have received USG supported agricultural sector productivity or food security training	District, gender, type of training	#, Quarterly	0	2,000	4,000	6,000	8,000	10,000
12.	# of internships, exchanges, demo plots, & other linkages to the private sector offered to educational institutions partnering with AVC	District, activity,	#, Annually	0	20	40	60	80	100

# ANNEX 7: ENVIRONMENTAL COMPLIANCE

AVC has done preliminary environmental screening of all 96 anticipated activities for FY 2015-2016 and identified their “Category” based on the level of environmental risk and type of activity. See the table at the end of the section for more detailed information about each activity and their level of environmental risk. In total, there are 96 activities, and 50 are identified as Category-I, 30 are as Category-II, 16 are as Category-III and no Category-IV activity. Each of these activities will be the subject of an individual environmental screening prior to implementation but the project expectations are that the proposed activities pose no significant environmental risk and can be implemented in a fashion that mitigates environmental risks.

The major environmental concern of the AVC project is the safe use of agrochemicals, particularly those used in protecting horticultural crops from pests and diseases. While the project has a cost-share policy that does not allow for direct purchase of agrochemicals, since these are recurrent costs, the project does hold regular pest and disease trainings with recommendations.

Sunnat Djalalov is designated Project Environmental Officer, will be responsible for environmental compliance of each AVC’s activity. Separate and detailed “Environmental Screening” document will be prepared for each activity depending on the level of environmental risk. The document will describe the type of activity, possible negative environmental risks, and beneficial impacts to the environment, economic return associated with the implementation of the proposed activity and mitigation measures to reduce the negative adverse environmental impacts. Mitigation measures will be developed for each activities identified as Category-III in initial environmental screening. However, mitigation measures will be developed for Category-I and Category-II activities too, even if they don’t pose any significant environmental risks. Project will incorporate best agricultural and environmental friendly practices into all activities.

## Environmental Determination Categories and Level of Environmental Risk

Category level	Description
• I	<b>Categorical Exclusion:</b> actions that do not have an effect on environment
• II	<b>Negative Determination without Conditions:</b> actions with no significant adverse effects with normal good practices
• III	<b>Negative Determination with Conditions,</b> with moderate risk: actions requiring Environmental Due Diligence review (EDD) to confirm or disconfirm adverse environmental effects and possible mitigation measures to avoid impact.
• IV	<b>Positive Determination.</b> The subproject has potentially significant adverse environmental effects even with standard mitigation measures. all positive determinations should recommend the next step:



**Number of activities by Category Number**

Category Level	Component-1	Component-2	Component-3	Component-4	<b>TOTAL</b>
Category-I	14	10	20	6	50
Category-II	11	9	2	8	30
Category-III	6	9	0	1	16
Category-IV	0	0	0	0	0
<b>Total</b>	<b>31</b>	<b>28</b>	<b>22</b>	<b>15</b>	<b>96</b>

## Environmental Compliance by Task

Component 1: Improve the Quality and Volume of Agricultural Production	Risk Category: I, II, III, IV	Description
<b>1.1 Improve On-Farm Productivity</b>		
<i>Task 1.A.1. Provide technical assistance in best agricultural practices at demo plots</i>		
Identify and engage leading growers interested in hosting demo plots	II	Negative Determination without Conditions
Carry out value chain-specific technology training programs (Grape, Pome and Stone Fruits, Sub-tropical fruit and nuts)	III	Negative Determination with Conditions
TOT to improve skills of existing production groups	II	Negative Determination without Conditions
Identify and establish new production groups	II	Negative Determination without Conditions
<i>Task 1.A.2. Facilitate national AVC exchange programs and fairs</i>		
Identify specific value chain opportunities for national exchange programs	II	Negative Determination without Conditions
Conduct value chain specific fairs on Grape, Apple, Cherry, Apricot, Peach, Pomegranate and Persimmon:	I	Categorical Exclusion
Carry out national exchange programs on Pome, Stone fruits and Grapes:	II	Negative Determination without Conditions
<i>Task 1.A.3. Use the MEVA platform to develop a social marketing forum extension services</i>		
Identify and engage partners among government and educational institutions	I	Categorical Exclusion
Identify different approaches to make MEVA available to value chain participants	I	Categorical Exclusion
Identify other donor organizations with resources that can integrate MEVA	I	Categorical Exclusion
Plan the content of the new version of MEVA	I	Categorical Exclusion
<b>1.2. Increase the Quality and Availability of Agricultural Inputs</b>		
<i>Task 1.B.1. Invest in the full operation of tissue culture lab and supplemental support to government institutions</i>		
Conduct a kick-off meeting with Mirzayev Institute	I	Categorical Exclusion
Establish a greenhouse for the tissue culture lab for rootstock adaptation outside the Lab		
- Collection and systematization of technical data about greenhouse for tissue culture labs.	I	Categorical Exclusion
- RFQ to potential equipment suppliers; suppliers technical due diligence	I	Categorical Exclusion
- Bidding process and award procedures	I	Categorical Exclusion
- Greenhouse designing/construction; resources infrastructure development	III	Negative Determination with Conditions

- Conduct training for greenhouse staff on greenhouse management and service provision	III	Negative Determination with Conditions
Develop a program and a schedule for specific training programs with Mirzayev Institute	II	Negative Determination without Conditions
Conduct tissue culture lab training	III	Negative Determination with Conditions
<b>Task 1.B.2: Introduce innovative scientific technologies to producers</b>		
Develop a list of recommendations to cherry producers regarding pollination and grafting for specific varieties based on results S-allele tests	II	Negative Determination without Conditions
Conduct DNA analysis and standardize the nomenclature of varieties in accordance with DNA testing and distribute the standardized nomenclature to farmers	II	Negative Determination without Conditions
Develop a list of recommendations to farmers for fertilizers to be used based on previous leaf analysis	III	Negative Determination with Conditions
Conduct nursery management training: trainings & nursery procurement	III	Negative Determination with Conditions
<b>Task 1.B.3: Develop the capacity of horticulture services providers to expand consulting services</b>		
Identify and engage private firms and certified nursery operators to carry out relevant consulting services	II	Negative Determination without Conditions
Develop and conduct technical and managerial training to the identified consulting service providers	II	Negative Determination without Conditions
Assist service providers to expand their services to producers	II	Negative Determination without Conditions
<b>Task 1.B.4. Foster a viable local market for quality farm tools and equipment</b>		
Demand: Identify local farm equipment vendors interested in selling quality orchard tools and equipment	I	Categorical Exclusion
Supply: Identify available quality orchard tool and equipment manufacturers/distributors (DC20/20)	I	Categorical Exclusion
Link supply and demand through marketing events	I	Categorical Exclusion
Identify potential local manufacturers for quality orchard/vineyard tools and equipment	I	Categorical Exclusion
Showcase ALP experience to potential buyers through training/marketing events	I	Categorical Exclusion
<b>Component 2: Improve Post-Harvest Handling and Production</b>	<b>Risk Category: I, II, III, IV</b>	<b>Effect on Natural and Physical Environment</b>
<b>2.A. Facilitate the Advancement of Cold Storage Practices</b>		
<b>Task 2.A.1. Facilitate cold chain demo site activities</b>		
Visit newly established cold storages to find the potential partners for cooperation (including in new target districts)	I	Categorical Exclusion

Visit ALP partner cold storage facilities to renew the cooperation	I	Categorical Exclusion
Launch cold storage demonstration site network	I	Categorical Exclusion
Conduct a kick-off meeting with AWE	I	Categorical Exclusion
Develop a training program specifically targeting female value chain participants	III	Negative Determination with Conditions
Conduct group and one-on-one technical and managerial training programs to cold chain operators on - Temperature and humidity control: general, - Proper storage temperature/ humidity levels per crop, - Limiting cross-contamination, - Introduction of forced air cooling systems:	III	Negative Determination with Conditions
Regional round table meeting for cold storage owners in Fergana, Tashkent, Samarkand. General year-end conference	II	Negative Determination without Conditions
Develop cold storage content and architecture for MEVA	II	Negative Determination without Conditions
<b><i>Task 2.A.2. Facilitate national exchange programs and international cold chain exchange programs for cold storage operators</i></b>		
Collect information for NEPs and micro-NEPs	I	Categorical Exclusion
Initiate discussion on challenges, issues and way forward with NEPs and micro-NEPs	I	Categorical Exclusion
Conduct an initial round of NEPs and micro-NEPs	II	Categorical Exclusion
Initiate dialogue and develop an exchange program with partners in Turkey and India	I	Categorical Exclusion
<b><i>Task 2.A.3. Develop a local cold chain service provider to become self-sustainable</i></b>		
Develop sustainability and exist strategy	I	Categorical Exclusion
<b>Task 2.B. Utilize Post-Harvest Production to Reach New Markets</b>		
<b><i>Task 2.B.1. Provide post-harvest handling training at demo sites</i></b>		
Identify partners for the task	I	Categorical Exclusion
Design training programs	I	Categorical Exclusion
Carry out training programs on best harvest practices on specific crops: Pome Fruits, Stone Fruits, subtropical, grapes, nuts	III	Negative Determination with Conditions
Training on application of sulfur pads for grape storage	III	Negative Determination with Conditions
Household processing training for women	III	Negative Determination with Conditions
Introduction to fruit sizing/sorting equipment at demo site	III	Negative Determination with Conditions
Introduction to fruit drying equipment at demo site	III	Negative Determination with Conditions
Training on advanced fruit drying technologies at demo sites	III	Negative Determination with Conditions

Training on packaging and labeling for fresh fruit and nuts	II	Negative Determination without Conditions
<b>Sub-Task 2.B.2. Facilitate international exchange programs in Turkey and India</b>		
Develop and conduct a first round of training/mentorship programs (i.e. management)	II	Categorical Exclusion
<b>Task 2.B.3. Develop commercial opportunities for the agro-processing sector (DC20/20)</b>		
Identify and engage partners in agro-processing sector	II	Negative Determination without Conditions
Design training programs for agro-processors	II	Negative Determination without Conditions
Training on packaging requirements for domestic and international markets	II	Negative Determination without Conditions
Introduction of improved and small scale packaging materials for export and local market	III	Negative Determination with Conditions
Training on labeling for agro-processors	II	Negative Determination without Conditions
<b>Component 3: Facilitate Market Linkages</b>	<b>Risk Category: I, II, III, IV</b>	<b>Effect on Natural and Physical Environment</b>
Monitoring & Evaluation (M&E) Activities		
<b>3.1 Create New Linkages in the Domestic Market</b>		
<b>Task 3.A.1. Build linkages between producers and local supermarkets</b>		
Organize kick-off meeting for grocery stores, brokers, consolidators and growers to discuss the linkages	I	Categorical Exclusion
Design training programs for processors and producers on marketing, sales and selling requirements	II	Negative Determination without Conditions
Conduct initial training programs on supermarket requirements: - Cool shelves effect on sales, - Packaging and labeling requirements, - Basic horticulture handling requirements	II	Negative Determination without Conditions
<b>Task 3.A.2. Take advantage of local trade events (DC20/20)</b>		
Prepare for Food Week and Agri-Tek Uzbekistan 2015	I	Categorical Exclusion
Participate and help participate in Food Week and Agri-Tek Uzbekistan 2015 (October)	I	Categorical Exclusion
Prepare for World Food Uzbekistan 2016	I	Categorical Exclusion
Participate and help participate in World Food Uzbekistan 2016 (March)	I	Categorical Exclusion
<b>3.2 Create Market Linkages with New Foreign Markets</b>		
<b>Task 3.B.1. Provide export courses to assist in entering new markets (DC20/20)</b>		
Provide export courses on Export 101, Export 102, Packaging and Quality Control, Export Documentation, Pricing Strategy and Price Forecasting:	I	Categorical Exclusion

<b>Task 3.B.2. Develop relationships with buyers in new markets (DC20/20)</b>		
Conduct a kick-off meeting with Export Promotion Fund	I	Categorical Exclusion
Conduct quarterly meetings with EPF on specific export issues	I	Categorical Exclusion
Identify and engage export champions	I	Categorical Exclusion
Prepare for and facilitate participation of Uzbek sellers in international exhibitions:- World Food Kazakhstan (November 2015), - Fruit Logistica (Germany, February 2016), - Prodexpo 2016 (Russia, February 2016), - Seoul Food (August 2016), - Annapurna World of Food (India, September 2016),	I	Categorical Exclusion
Design a matchmaking process for individual buyers and develop a buyer/seller database,	I	Categorical Exclusion
Identify and promote individual trade opportunities	I	Categorical Exclusion
<b>Task 3.B.3. Introduce a process for modifying products to meet new market requirements (DC20/20)</b>		
Identify new export-specific technologies to assist in export facilitation	I	Categorical Exclusion
Assist sellers to organize supply according to end-market specifications	I	Categorical Exclusion
Develop a customer follow-up method	I	Categorical Exclusion
<b>Task 3.B.4. Improve exporters' compliance with ISO, HACCP, and GlobalGAP standards</b>	I	Categorical Exclusion
Kick-off meeting with Bureau for Export Assistance	I	Categorical Exclusion
Adopt the Bureau's brochure on compliance for use by SMEs	I	Categorical Exclusion
Identify available standards course providers and link them with exporters	I	Categorical Exclusion
Link exporters with Association GS1 Uzbekistan	I	Categorical Exclusion
<b>Component 4: Link Educational Institutions with Private Sector Demand</b>	<b>Risk Category: I, II, III, IV</b>	<b>Effect on Natural and Physical Environment</b>
Monitoring & Evaluation (M&E) Activities		
<b>Task 4.1. Develop hands-on value chain learning at universities</b>		
Kick-off meetings with agrarian universities	I	Categorical Exclusion
Establish demo sites at three agrarian universities	II	Negative Determination without Conditions
Develop training content and coordinate with the academic institutions and GOU	II	Negative Determination without Conditions
At university demo sites, conduct training programs on:		
- Proper propagation of dwarf and semi-dwarf rootstocks for high-density pome fruit orchards	II	Negative Determination without Conditions
- Horticulture planting	II	Negative Determination

		without Conditions
- Irrigation	II	Negative Determination without Conditions
- Pest & Disease management	III	Negative Determination with Conditions
- Pruning practices	II	Negative Determination with Conditions
- Post-harvest handling (i.e.pre-cooling, sorting, grading, handling, packaging)	II	Negative Determination without Conditions
Organize student field trips to AVC demo sites	II	Negative Determination without Conditions
<b><i>Task 4.2. Introduce innovative ways to modernize agriculture curricula</i></b>		
Roundtable to explore ways to involve professors with innovative technologies developed under ALP and introduced under AVC	I	Categorical Exclusion
Introduce MEVA to students and professors	I	Categorical Exclusion
Begin identifying topics to be included in supplementary educational materials	I	Categorical Exclusion
<b><i>Task 4.3. Facilitate short courses for professors and faculty exchanges from international universities to teach in Uzbekistan</i></b>		
Identify potential faculty exchange opportunities and begin developing contacts for 2016	I	Categorical Exclusion
<b><i>Task 4.4. Support internships/apprenticeships for students and graduates</i></b>		
Link universities' internship programs with AVC partners	I	Categorical Exclusion

## ANNEX 8: THE LIST OF AGRICULTURAL COLLEGES IN TARGET AVC DISTRICTS

#	Region	#	District	#	Colleges
1	Samarkand	1	Samarkand	1	Samarkand district Agro-industrial vocational college
		2	Taylok	2	Taylok Agricultural vocational college
				3	Taylok Agro-business vocational college
		3	Payarik	4	Payarik Agricultural vocational college
				5	Chelak Agricultural college
				6	Payarik Processing and Service vocational college
		4	Urgut	7	Urgut Agro-economical vocational college
				8	Urgut Agro-service vocational college
				9	Urgut Agro-industrial and Service vocational college
				10	Urgut Agro-business and Service vocational college
		5	Bulungur	11	Bulungur Agricultural vocational college
				12	Bulungur Agro-industrial and Service vocational college
2	Namangan	6	Turakurgan	13	Turakurgan Agricultural vocational college
		7	Pop	14	Pop Agricultural vocational college



				15	Pop district Agriculture and Water Resources vocational college
		8	Uychi	16	Uychi Agricultural vocational college
		9	Kosonsoy	17	Kokumboy Agricultural college
		10	Yangikurgan	18	Yangikurgan Agro-service and Transport vocational college
		11	Chortok	19	Bogiston Agriculture and Horticulture vocational college
3	Ferghana	12	Kuva	20	Kuva Agriculture and Social-economy vocational college
				21	Kuva Agro-industrial vocational college
		13	Altyaryk	22	Altyaryk Agro-industrial vocational college
				23	Altyaryk Agricultural vocational college
		14	Ferghana	24	Ferghana district Agriculture and Service vocational college
				25	Ferghana district Agro - industrial vocational college
				26	Ferghana district "Logon" Agro - industrial vocational college
4	Tashkent	15	Ohangaran	27	Ohangaran district Agro-service and Economy vocational college
				28	Ohangaran district Agro-economy vocational college
		16	Bustonlik	29	Bustonlik Agriculture and Entrepreneur vocational college
		17	Zangiata	30	Zangiata district Agro-service vocational college
				31	Zangiata district Kensoy Agro-service and Business vocational college
				32	Zangiata district Agro-industrial vocational college
		18	Parkent	33	Parkent Agro-industrial vocational college
				34	Parkent Agro-industrial and Service vocational college

		19	Kibray	35	Kibray Agro - commerce vocational college
				36	Kibray district Agricultural vocational college
5	Andijan	20	Andijan	37	Andijan Agro-industrial vocational college
		21	Bulokboshi	38	Bulokboshi Agro-industrial vocational college
		22	Hujaobod	39	Hujaobod Agricultural vocational college
		23	Marhamat	40	Marhamat Agricultural vocational college
				41	Marhamat Agriculture and Water Resources vocational college
				42	Marhamat Agro-industrial vocational college
		24	Jalakuduk	43	Jalakuduk Agro-industrial vocational college
6	Bukhara	25	Jondor	44	Jondor Agricultural vocational college
7	Karakalpakstan	26	Nukus	45	Nukus Agro-economical vocational college
8	Jizzakh	27	Bakhmal	46	Bakhmal Agricultural vocational college
				47	Bakhmal "Sangzor" Agricultural vocational college
9	Kashkadarya	28	Kitab	48	Kitab Agro - business college
				49	Kitab Agro - service vocational college
				50	Kitab Agricultural vocational college
				51	Kitab Agro - business and Service vocational college
10	Navoi	29	Khatirchi	52	Khatirchi Agricultural vocational college
				53	Khatirchi Agro - service vocational college
				54	Khatirchi "Zarafshon" Agricultural vocational college

11	Khorezm	30	Bogot	55	Bogot Agricultural vocational college
				56	Bogot Agro-industrial vocational college

There are no Agricultural colleges in Kuvasay (Ferghana Province) and Syrdarya (Syrdarya Province) districts.