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AMERIKANYŇ HALKYNYŇ ADYNDAN

YEAR 2
Quarterly Report III
(April 2012 – June 2012)

AGRICULTURE TECHNOLOGY PROGRAM IN TURKMENISTAN

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PROJECT OVERVIEW

This is the third quarter report of Year 2 progress for the USAID Agriculture Technology Program in Turkmenistan (AgTech), covering activities from April 1 through June 30, 2012.

The AgTech project highlights the third quarter with the completion of the second generation of Artificial Insemination (AI) training activities, the start of the feed demonstration activity at five farm locations, continued greenhouse seminars including the introduction of pesticide training seminars, and monitoring & evaluation activities that capture the results for both livestock and horticulture project components.

To date, USAID has reached out to nearly 2,000 Turkmen farmers through the AgTech project in an effort to transfer knowledge and best practices. Despite a difficult year for greenhouse farmers due to the long, consistent colder-than-average winter, farmer income has increased across the board by 78% and production has risen by 73%. These excellent figures are due in great part to the many new greenhouses built by seminar participants.

The program continues to build partnerships with local farmers, including the identification of partners for new AI training centers that will be built in the Ahal and Dashoguz velayats this year. However, there still remain challenges, most of which concern the legal framework of veterinary commerce, that have slowed the implementation of the Year 2 work plan.

In response to the challenges, Weidemann Associates, Inc. and the AgTech staff work closely with USAID to develop additional activities to supplement the work plan and stay on task of achieving the program's overall objectives. The Chevron gift funding was added to the Task Order Contract in the final weeks of Q3, and using this money to procure a Liquid Nitrogen (LN) generator will ensure greater sustainability of USAID's work to improve the livestock industry in Turkmenistan.

On June 22, 2012, the project was obligated an additional $550,000 to the contract, as well as $150,000 in Chevron gift funds raising the total ceiling price of the Task Order Contract to $3,432,280. As of June 30, the AgTech project has estimated that $1,525,878.33 has been spent of the obligated funds of $2,614,076.

LIVESTOCK COMPONENT

BREEDING IMPROVEMENT

In Q3 of Year 2, the project has focused on completing the artificial insemination training activities for the livestock sector. By June 30, the 12 first generation AI specialists collectively have successfully trained 41 new AI specialists, with three more to finish and complete their training in July. This means that a total of 56 specialists will have been trained & certified throughout Turkmenistan. Each specialist has been issued a project-procured AI kit at the completion of his or her training. Of the specialists trained, there was only one female AI specialist who is from Lebap. They now bear the heavy burden of continuing the legacy created by Ms. Katya Chichnayeva, the project's lead breeding and AI consultant. Worthy of mention is the work of Mr. Nury Annaev from Mary, who himself trained eight new specialists with the support of the Mary AI Center.

As of June 30, 2012, 464 cows were inseminated from 520 doses of semen in the Ahal region alone. The number of healthy calves which the project knows to have been born has doubled from the second quarter for a total of 162: 65 Holstein and 97 Brown Swiss. The gender breakdown of the calves is 54.3% male and 45.7% female. The superior bred Holstein and Brown Swiss calves are a prized commodity among beneficiary farmers. Of the inseminations that took place, 69% were successful, often after multiple attempts with the trainers learning to hone their skills. Of these successful inseminations, 73% carried to term and gave birth to a new healthy baby calf. Unfortunately, due to M&E challenges and farmers' activity of trading livestock, about 30% of all inseminated cattle are unknown regarding success or failure.

Many cows were also inseminated last year in Mary, and the project is making efforts to expand its M&E reach to this velayat and all others where project-supported farmers are using AI services. This will be a critical development in the project in order to capture future results of increased milk production, a primary reporting goal of the AgTech project.

Ms. Chichnayeva is working with our lead Agriculture Extension Specialist, Mr. Akmyrat Yazhanov, and all other trained AI specialists to ensure that the farmers raising these calves receive significant knowledge regarding best practices in herd management. To supplement the efforts of Ms. Chichnayaeva and other local veterinarians, the project is planning short-term technical assistance in developing a heat detection training-of-trainers program for farmers and veterinarians using a portion of the Chevron supplemental funding.

Next Steps:

Increase M&E efforts to capture productivity of new cows bred and born in all velayats.

Establish market linkages with livestock industry suppliers to enable AI specialists to conduct their work self-sufficiently.

Table of 2nd Generation AI Velayat Training Bull Semen Distribution

Name	Velayat, Etrap	Swiss (doses)	Holst (doses)	Gloves (units)	Trainees
Amangeldi Yazhanov	Mary, Tagta-Bazar	120	30	180	4
Yakup Chariyev	Mary, Yoloten	120	30	N/A	3*
Amandurdy Hommadov	Mary, Murgap	120	30	166	2*
Anna Sariyev	Akhal	110	110	160	5
Myratgeldi Hojaberdiyev	Akhal, Gokdepe	120	30	160	4
Yolaman Shaberdiyev	Akhal, Babadayhan	120	30	180	4
Murat Nurmatov	Dashoguz, Niyazov	140	40	160	4
Yusupbay Ahmedov	Dashoguz, Niyazov	140	40	160	4
Bahrambay Rozmetov	Dashoguz, Niyazov	140	40	160	4
Gurbanmurat Nurmamedov	Lebap, Sayat	120	30	160	4
Nurmyrat Yoldashev	Lebap, Garashsyzlyk	120	30	160	3
Annaberdy Ashyrmyradov**	Ahal, Gokdepe	N/A	N/A	N/A	N/A
Nury Annaev					
Total distributed:		**1370**	**440**	**2900**	**41**
Remaining in Storage:		**220**	**250**	**1100**	

*Mr. Nury Annaev received Mr. Charivyev's and Mr. Hommadov's products as they respectively could not train new specialists due to work and family circumstances. In their place, Mr. Annaev is training eight (8) new AI specialists, five (5) of which have completed their training as of the end of Q3.
**Working in a veterinary pharmacy and will continue to work part time providing AI services.

ESTABLISHMENT OF ARTIFICIAL INSEMINATION CENTERS

The project has verbally agreed with partners in Ahal and Dashoguz for the creation of new AI centers in each velayat. Mr. Nepis Karayev, who owns and manages a dairy livestock farm in Ahal, and Mr. Rozumbay Rozmetov who manages the "Agrifirma" Raozmetova, have both been identified as key partners who have been strategically chosen for their central locations in their respective velayats, for their willingness to cooperate with USAID partners present and future, and for their ability to co-finance the activities.

As reported in Q2, Turkmenmallary, the State Livestock Association, expressed interest in creating five new AI/breeding centers across the country. After several meetings with Turkmenmallary, the project's Agriculture Extension Specialist, Mr. Akmyrat Yazhanov, has advised that Turkmenmallary may or may not move on their intended developments fast enough to keep up with the timeline set forth by our project. While the project continues to create these centers in collaboration with private farmers by the end of Year 2, we will continue to provide technical assistance to Turkmenmallary as requested for the realization of our organizations' shared goals to develop the livestock industry in Turkmenistan.

"We are very grateful for what the project is doing for us. We would like for [AI] activities to continue so that one day we will have pure breeds."

- The Yalkayev Family, Socialism Farm Union in the Ahal Velayat

FEED DEMONSTRATION

The project has worked with five farms in the Ahal and Mary velayats to conduct a feed demonstration over an 80-day period from April through June. In March, the project spent a couple of weeks to create a mixed feed ration (see below). The barley used was milled onsite at Sha Yoly farm to increase water absorption and starch digestibility of the animal feed. Total cost came to 1.58 manat, which is about 1 manat more per kg than typical feed. Since milk is sold for 1 manat per liter, to break even production needs to increase by 2.45L/day/cow for a 2.5kg ration. By using locally available products and local partners, the project's goal was to not only demonstrate the widely held belief that an improved feed will increase dairy production among local cows, but also that such a feed can be created in Turkmenistan locally with available resources.

Ingredient	Amount (kg)	% of feed ration	Cost / kg (TM)	Total Cost (TM)
Barley	12,000	56.8%	2 m/kg	24,000
Cottonseed Meal	8,000	37.9%	0.6 m/kg	4,800
Chalk (Ca)	320	1.5%	1.5 m/kg	480
Jivina Supplement	800	3.8%	5 m/kg	4,000
TOTAL	**21,120**	**100%**	**1.58 m/kg**	**33,280**

Within a day or two, all farmers noticed increases in their herd's daily milk production, averaging 3-5L more than normal as a result of the use of the more nutritious feed. Instruction on adequate water intake for good hydration and testing for mastitis were also integrated into the 80-day activity. Early results have shown the following aggregate milk production results:

Next Step:

Identify feed mill investor(s) and support the development of AI and feed input providers with regional partners.

Participating Farmers and Number of Heads in the Feed Trials

Farm Name	# of Milking Cows	Baseline milk/day (L)	Increased milk/day (L)	% Increase in Milk Production
Nepis Karayev	40	380 L/day	496 L/day	30.5%
Reyimbay Yoldashev	10	35 L/day	88 L/day	151.4%
Sha Yoly	20	392 L/day	445 L/day	13.5%
Bayram Meredov	20	173 L/day	237 L/day	37.0%
Hally Italmazov	10	52 L/day	98 L/day	88.5%
TOTAL	**100**	**1,032 L/day**	**1,364 L/day**	**32.2%**

A more detailed account of the feed demonstration with additional analysis will be submitted to USAID in a separate report. However, the following general observations were made:

- Smaller farms with extremely poor forages saw the most benefit from using the new feed. For example, Reyimbay Yoldashev's farm increased their cow's milk production by over 150%.
- Large farms with more modern feed practices and resources to grow their own forage saw less impressive results. For example, Sha Yoly's herd increased milk production from an average output of 19.6L per day to 22.3L per day.
- For farms milking their cows by hand, the use of the improved feed increased the cows' appetites, and as they ate for longer time periods, the milk hands were able to collect more milk per session with the new feed.
- As the weather grew hot in June, a significant drop in the productivity of cows at all farms was observed, regardless of the use of an improved feed, negatively skewing overall results.
- Generally there was no mastitis reported at any of the participating farms; however, the extra work required to conduct the mastitis tests served as a deterrent to regularly check all cows for the disease.

These observations and further analysis will help support the development of management tools that can help dairy farmers determine the most economical way for farmers to keep their cows healthy while maximizing productivity of their herd.

The project is using the feed demonstration activity as an opportunity to showcase to local farmers the effect good nutrition and animal care can have on their herd's milk productivity. Approximately three hours of film footage was shot over the three-month period and will be edited to create a 10-15 minute documentary, which should be finished by the end of August. As a follow up to this activity, the project has identified key investors in the livestock sector who are interested in AI development and feed production. Currently all Turkmen feed mills produce animal feeds for chicken, sheep and animals other than cattle. The investors are planning to go on a study tour to Turkey in August, 2012, to meet with Turkish veterinary and animal feed supplement producer Ege Vet to have Business-to-Business meetings and develop relationships necessary to make business deals for livestock feed and AI-related supplies that are much needed for the sustainability of the livestock sector in Turkmenistan.

CHALLENGE: Different farms have different tools and equipment available for measuring milk production. Smaller farms use simple buckets, while larger farms have milking machines that more accurately display milk collection for record keeping purposes. It takes longer to milk cows by hand in the smaller farms, potentially keeping them from collecting the cow's full milk production.

HORTICULTURE COMPONENT

With May and June being the primary months for harvesting greenhouse cucumbers and tomatoes, the project was able to measure the impact that horticulture trainings are having on production and income generation in Q3. Overall, production among project beneficiaries is up 73% over the baseline year, due in large part to the addition of new greenhouse producers. The long, cold winter this year negatively impacted results, but generally farmers are still pleased with their progress. Although the country produced a weaker than average harvest, prices were higher in the local markets, leading to a 36% increase in value of goods sold among greenhouse farmers, surpassing the 20% goal set for Year 2.

AgTech's successful greenhouse rennovation activities have led to 71 renovated and constructed greenhouses all velayats in Year 2, currently 29 greenhouses shy of this year's goal of 100. The USAID co-financed demonstration greenhouse in Doshoguz is 12x50m, and the project signed a MoU to install a drip irrigation system in Q4, which has not been done in previous greenhouses. The lack of incentive to build the irrigation system is a real challenge to the project in facilitating the adaptation of this new technology. However, the system will be used to demonstrate the effectiveness drip irrigation has on growing produce by using chemigation, fertigation, and supporting climate control. Drip irrigation offers an economical and safe way to operate a greenhouse, which is a good agricultural practice AgTech is actively promoting. As Q3 represented the spring harvest season, Q4 expects to see more activity in constructing and/or renovating greenhouses in preparation for the fall 2012 growing season.

HORTICULTURE PRODUCTION

With Q3 of the Year 2 came the largest M&E results for the horticulture component of the project to date. Following the cold winter, warmer temperatures were a welcome change for small holder greenhouse farmers. After compiling the results and comparing to baseline data gathered in Year 1, the table below illustrates the changes in production and income for project beneficiaries:

Year 2 Results	Ahal Velayat	Mary Velayat	Lebap Velayat	Total Project To Date
New greenhouses	17	14	38	141
Producers with >50% income growth	20	208	88	316
Income growth	20%	101%	93%	78%
Increase in value	15%	70%	17%	36%
Production growth	78%	102%	43%	73%

*Balkan and Dashoguz greenhouses are in their first year with the project. Year 2 results will establish their baseline for measuring impact in Year 3 and Year 4.

The new greenhouse owners and those who have renovated their greenhouses (141) represent almost half of those who have increased their income by 50% or more. Additionally, others have taken the lessons taught in our seminars to heart and made changes in their greenhouse management that have paid dividends. The Mary velayat experienced the best results of the three velayats that were analyzed by the project's M&E manager. Outside of those with new greenhouses, Lebap struggled to produce more than the previous year. This trend is found throughout the velayat, and thus prices were higher giving them a boost to income despite the weak production. The opposite took place in Ahal, where more production has led to slower income growth as the Ashgabat area is more saturated with produce from all over the country.

To keep up this pace, the project will have to continue to deliver new advice on techniques and selection of input products like seeds and fertilizers to maximize the production potential of these greenhouse

"You are doing a fantastic job and thanks to USAID for this help. These seminars are so important and useful that every single person attending today's seminar has learned at least one or two things that will significantly improve their way of farming, thus increase their family income."

- Rejepbay Allayarov, Greenhouse partner in Dashoguz Velayat

farmers. Q4 seeks to introduce drip irrigation, to continue advising on pest control using PERSUAP approved methods, and to recommend seeds based on the tests results and experience of project partners.

GREENHOUSE TRAININGS & SEMINARS

The Q3 seminars concentrated on plant care, soil care and pest control for an optimal greenhouse environment. The project is continuing to train local input providers and farmers on soil composition for them to calculate and recommend the proper application of fertilizer for optimal plant and fruit growth. The result has been specific soil preparations (i.e., nitrogen, phosphorus and potassium) and fertilizer applications for regional farmers that have led to greater yields in this spring's harvest.

In Year 2, 594 new farmers have attended project seminars, with male participants dominating the attendance figures at 80%. The 4:1 male to female attendance ratio is generally attributed to cultural reasons where men are considered responsible for attending such seminars while women take care of domestic issues and may even be tending to the greenhouses themselves. For Year 3, the project will concentrate on efforts to increase the gender balance in the seminar attendance. This is important as females play a large role in most family's plant care during the growing season(s).

<u>Next Step:</u>

Identify ways to boost the attendance of female participants in the greenhouse component seminars for Year 3 and Year 4 to support gender equity in project implementation.

The project continues to leverage private sector partnerships by working with international providers of seeds. On May 20-21, the project invited Marco de Wolf of ABEM International Trading to speak in a seminar in Mary on seed varieties. Such professional guest speakers provides for two advantages: 1) linking the farmers with seed suppliers and 2) enabling the seed provider to learn more about the local conditions to stock his or her store with the most appropriate varieties for Turkmen farmers. Mr. de Wolf left the project with several free tomato and cucumber seed samples which will be used by project farmers in all velayats.

In the wake of a second denial of visa entry for a short-term pesticide consultant from the U.S. in April, the project has hired Mr. Mergenguly Hezretkulov, a former Chief of the Plant Protection Department of the Turkmenistan Ministry of Agriculture. Mr. Hezretkulov is working closely with AgTech's Agribusiness Specialist to learn about the project's PERSUAP so that he can conduct pesticide safe

usage and application trainings. June saw the first of these seminars take place in Ahal, Dashoguz and Lebap, and more seminars are planned to continue through the summer to include Mary and Balkan velayats.

CHALLENGE: Very few input providers have official licenses for the sale of their seeds. Many seeds are brought into the country through illegal back channels. This adds a degree of challenge to linking farmers with reputable input providers who have access to the best legal seeds in country.

OTHER PROGRAM ACTIVITIES

EXPORT MARKET AND TRADE CAPACITY STUDY

In attempt to better understand the export potential of Turkmenistan, the AgTech project commissioned a study on the Export Market and Trade Capacity for Turkmen horticulture. The project contracted with the MCT Agency, a local organization that specializes on market research, to conduct the study and develop an independent analysis on the country's potential for exporting fresh tomatoes and cucumbers to neighboring markets. The study was designed to look inward at Turkmenistan's potential based on the assumption of international demand, which will later be studied to determine appropriate partners. Also, internal transport of goods to local borders is studied to identify bottlenecks and opportunities to increase efficiency in getting goods from farmer to retail buyer.

The work for the study was completed in June, but the analysis, writing and final edits will not be ready until Q4. This assignment brought the MCT Agency's professionals to the farms where AgTech works throughout the country to get the most reliable information available. However, a major challenge that disrupted and delayed the progress on this study was the reluctance for farmers, customs officials, and other value chain actors to answer surveys honestly and completely. Unfortunately, issues in information gathering have led to further complications and questions regarding the analysis. AgTech and MCT Agency are working closely to resolve remaining questions, but the validity of this and any other study conducted remains in question as long as farmers and traders are afraid to cooperate. Nevertheless, the project looks forward to finishing this activity in the near future and taking from it what lessons we can learn regarding fresh produce exports and the capacity of Turkmenistan to become an international player in regional commerce.

2nd ANNUAL US-TURKMEN BUSINESS EXPO

On May 3-5, 2012, Turkmenistan hosted the 2nd Annual US-Turkmen Business Expo. While USAID had their booth to showcase all programming in Turkmenistan, the USAID Agriculture Technology Program also took the initiative to accept the invitation to present our own booth to exhibit the materials and activities of the AgTech project. This was an excellent outreach opportunity and allowed more government officials

and businesses, local and international, to gain awareness of the work that USAID conducts in the agricultural industry in Turkmenistan. Chief of Party (COP), Charles Yesolitis, and the project's key personnel gave brief radio interviews with Turkmen radio explaining how the project promotes development and supports Turkmen farmers to increase production in the horticulture and livestock sectors of the economy.

MANAGEMENT AND PERSONNEL

NEW HIRE: DEPUTY CHIEF OF PARTY

The USAID Agriculture Technology Program welcomed a Deputy Chief of Party (DCOP), Mr. Farhat Orunov, to the team on May 28, 2012. This was a planned addition to the project to support the transition of the project's management from using an expatriate COP to a local COP. Using a newspaper advertisement and a grassroots effort to bring in candidates, the project identified the top three candidates for interviews. The selection of Mr. Orunov was based on his qualifications, experience and ability to communicate in English, Russian and Turkmen languages. He is supporting the key personnel in the implementation of project activities, and he is also shadowing Mr. Yesolitis, the current COP, to learn the position, responsibilities and project budget and work plan. The project anticipates a smooth transition at the end of Year 2 when Mr. Yesolitis returns to the home office and Mr. Orunov accepts the position of project COP.

To support this transition, the project is planning a trip to the Weidemann Associates home office in Arlington, VA in August for COP orientation and work planning sessions. He will be responsible for learning about financial management/budgets, designing project work plans, and understanding the COP role as it applies to contractual and administrative matters. Upon his return, Mr. Orunov will finalize the Year 3 work plan in collaboration with USAID/Turkmenistan.

USAID-CHEVRON PARTNERSHIP

In partnership with USAID, Chevron has gifted $150,000 to the AgTech project to support development activities in Turkmen livestock and horticulture. The money will be used for two primary purposes:

1. The procurement of a liquid nitrogen generator for AI service sustainability.
2. The short-term technical assistance to veterinarians and AI specialists on heat detection.

The initial payment for the liquid nitrogen generator will be made in early July for the equipment to arrive by the end of Year 2. AgTech's own key personnel, Mr. Akmyrat Yazhanov, is carefully reviewing all import procedures and licensing requirements for the usage of such a machine so that the project's trained AI service providers will have open access to it for storage and transport of frozen bull semen. Full reporting on the results associated with the gift funds will begin with the Year 2 annual report (Q4) and continue throughout the duration of the project as contracted.

PMP TARGETS AND DEVIATIONS

Performance Indicator Monitoring

Performance Indicator	Performance Indicator Definition	Year 2 Proposed	Year 2 Actual (second quarter)
50% increase in HH income	*Horticulture HHs and farms increasing income by 50%*	*250*	***316***
	Livestock HHs and farms increasing their income by 50%	*250*	*--*
Rural HHs benefiting directly from USG Interventions	*Number of beneficiaries and training participants, disaggregated by gender and region*	*1000*	***952***
Farmers, processors and others who have adopted new technologies or management practices	*Number of beneficiaries and training participants using new technologies or practices as introduced by the project, disaggregated by gender and region*	*500*	***785***
Quantity of produce grown and/or sold	*Farmers, buyers or labs are using AI, improved feed, vet services, greenhouses, drip irrigation, grading, post-harvest packaging practices training*	*Baseline + 70 %*	***Baseline + 73%***
Value of produce sold to local and international markets	*USD value of goods in livestock and horticulture sector disaggregated by product and veleyat*	*Baseline + 20%*	***Baseline + 36%***
Number of agriculture-related firms benefiting directly from USG supported interventions.	*Number of input providers and buyers strengthened to provide farmers with necessary inputs.*	*50*	***43***
Number of greenhouses constructed or improved	*Number greenhouses constructed and/or renovated in each veleyat*	*100*	***71***
Land under improved technologies or management practices	*Indicates the number of ha under greenhouse or livestock project activities (existing and new land).*	*500*	***14.8***

Number of Training Participants (Disaggregated by gender and region)

Region	Female	Male	Total Year 2	Total Project To Date
Akhal	20	137	157	552
Mary	61	177	238	473
Lebap	56	190	246	455
Balkan	65	145	210	214
Dashoguz	0	101	101	109
	120	**474**	**594**	**1803**

Number of Greenhouses Constructed and/or Renovated

Region	Number of constructed and reconstructed greenhouses	Total Project To Date
Akhal	17	29
Mary	14	56
Lebap	38	54
Balkan	1	1
Dashoguz	1	1
	70	**140**

Farmer Households Adopting New Technologies or Practices

Region	HHs in Year 2	Total Project To Date
Akhal	193	508
Mary	220	287
Dashoguz	194	211
Lebap	106	107
Balkan	1	1
	714	**1114**

Total Successful Births from Artificial Insemination (as of June 30, 2012)

Calves	Heads
Holstein male	**34**
Holstein female	**31**
Swiss male	**54**
Swiss female	**43**
Stillborn	7
Aborted	5
Other died	5
Total Successful Births:	**162**