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Quarterly Report I

(October 2012 – December 2012)

AGRICULTURE TECHNOLOGY PROGRAM IN TURKMENISTAN

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TABLE OF CONTENTS

TABLE OF CONTENTS 1

PROJECT OVERVIEW 2

LIVESTOCK COMPONENT 3
- Breeding Improvement 3
- Establishment of Artificial Insemination Centers 6
- Pilot Feed Production 7

HORTICULTURE COMPONENT 7
- Horticulture Production 9
- Greenhouse Training & Seminars 9

MANAGEMENT AND PERSONNEL 10
- Transition to a Local Chief of Party 10
- Change in PMEP Indicators 11

PMP TARGETS AND DEVIATIONS 11

CHEVRON FUNDED ACTIVITIES 13

PROJECT OVERVIEW

This is the first quarterly report for Year 3 of the USAID Agriculture Technology Program in Turkmenistan (AgTech) covering activities from October through December 2012.

AgTech project highlights from the first quarter include the opening of two new Artificial Insemination (AI) Centers in Ahal and Dashoguz for training on livestock breeding, the USAID/Chevron co-sponsored training of heat detection and other bovine breeding best practices, the start of drip irrigation seminars for greenhouse farming, and the first joint activity between Turkmenmallary (The State Livestock Association) and AgTech, in which 10 Turkmen government veterinarians were trained on how to conduct bovine artificial insemination.

Following a productive Year 2 in which USAID reached out to over 2,000 Turkmen horticulture and livestock farmers and inseminated an estimated additional 1,500 cows with US world class semen, Year 3 promises to continue to build on the results of the first half of the program with more technical expertise that can raise Turkmen farming and production to the next level. The operationalization of equipment such as the liquid nitrogen generator, a bovine ultrasound, and drip irrigation systems stands as the next step to transform Turkmen farming into a modern agricultural industry with world class technological capabilities.

Because the AgTech project's goals are aligned with the goals of the Government of Turkmenistan for the improvement of livestock production, the project is building more partnerships with state entities, including Turkmenmallary, the State Veterinary Service and the State Livestock Institute. However, many challenges remain concerning the legal framework of agricultural commerce, which places a premium on access to agricultural inputs such as bull semen, seeds and products like specialized plastic gloves and sleeves for livestock breeding.

In October, Mr. Farhat Orunov officially took over as Chief of Party for the AgTech project. Weidemann Associates, Inc. and the AgTech staff worked closely with USAID to develop a robust work plan with feasible activities designed to maximize project impact while minimizing exposure to risk given the political landscape. The project is happy to report that after a slow start in October, the project has implemented activities with little interference from any state or local authorities.

On December 27, 2012, the USAID/CAR contracts office approved a budget modification to realign the budget without a grants line item, taking into account the difficulty of registering grants in country and the more practical application of that $100,000 in funding to program costs, including the purchase of technological equipment to improve livestock breeding. As of December 31, 2012, the AgTech project has estimated that $2,141,268.80 has been spent of the obligated funds of $2,614,076.

LIVESTOCK COMPONENT

BREEDING IMPROVEMENT

After having trained and equipped 56 AI specialists through Year 2, this year is focusing on improving the skills of AI technicians and leveraging the activities of the Government of Turkmenistan to support program objectives. In the first two years of the project, over 1,900 cows have been inseminated, but a few challenges have emerged. The first challenge is the availability of AI inputs, including top quality bull semen, natural hormones for breeding efficiency, and quick moving supplies of gloves and other disposables needed for AI. Secondly, limited skills in heat and pregnancy detection have resulted in the dependence on one key specialist who has served the project in every region of Turkmenistan. Another challenge has been tracking the calves born, as many inseminations take place in remote areas or in small holder farms where communications capabilities are weak. The project has instead focused on the larger farms for M&E purposes of determining increases in milk production attributable to project initiatives.

Sustainable input supplies. Partnerships with groups like World Wide Sires and the Turkish firm Ege Vet have provided a path forward to sustainable supplies of progeny tested bull semen, vaccines, and other supplies needed for conducting AI in a cost effective manner. The third batch of imported bull semen arrived on October 30 along with complementary gloves and the final AI Kits for trained technicians. 100 doses of semen were bought by each of the 11 first generation AI specialists for $300 each, demonstrating the first step of local ownership by transferring financial responsibility from the project to the technicians.

Following the business-to-business meetings in Turkey, the project has opened a dialogue with Ege Vet's local representative to discuss the possibility of resuming the company's activities in Turkmenistan. Unfortunately, all legal paperwork has expired, and the registration will expire in 2013 if not renewed. The project estimates $2,000 in fees related to maintaining an active, legal presence in Turkmenistan for Ege Vet.

A number of samples of vaccines were brought from Turkey to Turkmenistan for trial purposes. Juramate, a product used to induce heat in cows, was shown to have little to no effect on the sample of cows. This could be due to a number of factors relating to the product and/or the animals. The project gave a Brucellosis vaccine to the State Livestock Research Institute for further testing, but the results will not be available until early 2013. Registration for new vaccine products will cost approximately $700 each.

Next Steps:

Increase imports of veterinary supplies (e.g., bull semen, vaccines, gloves, etc.) once project partners obtain licenses.

Country-wide trainings on the breeding improvement skills of heat & pregnancy detection to increase farm productivity.

CHALLENGE: Licensing remains one of the single most obstructing challenges to building sustainable practices in Turkmenistan. However, the project has learned that a new law on registration of veterinary vaccines has been passed through the Ministry of Justice and will be adopted in the near future. Once this law is adopted, the overwhelming backlog of demand for these veterinary products will provide a great income opportunity to those positioned in the market for this change in policy. As of today, Mr. Batyr Begliyev remains the sole private Turkmen veterinarian licensed to import bull semen.

Heat and Pregnancy Detection. With the financial support of Chevron, the project hired the CEO of Veterinarians Without Border, Dr. Thomas Graham, to conduct a two-week training program November 14-30 with a group of the most promising Turkmen AI specialists. This training was designed to help farmers and veterinarians incorporate best practices in heat detection and increase the AI technicians' pregnancy detection skills using a combination of palpation and hand-held ultrasound equipment. The scope for the training was expanded to include not only reproduction, but also nutrition, calving assistance, young stock growth, physical examination, disease diagnostic methods, medical treatment, vaccination protocols, hoof trimming, and building/housing design recommendations. The goal is lower days needed to detect pregnancies from 90 days to 45 days. By doing so, farmers will realize a significant increase in farm productivity and breeding efficiency, which can ultimately result in more milk and meat production. Simultaneously, AI specialists with advanced heat detection and palpation skills will improve their success rates for conducting AI, strengthening the ability for AI technicians to have prosperous careers.

These training activities utilized the new AI Center in Ahal for theoretical training and classroom instruction, while Mr. Nepes Karaev's farm adjacent to the AI Center provided the cows necessary to conduct the hands on portion of the training. 13 AI technicians participated over the 14-day training period. Although the number of participants was smaller than desired, Dr. Graham preferred this size group for training due to the difficulties in working with large groups for hands-on training. 30 cows were determined to be open, of which many were pregnant and the others anestrus (i.e., not cycling properly). The three cows that were open and ready were inseminated during the training. In recalling the AI skills of the technicians, Dr. Graham observed, "These veterinarians are presently doing an excellent job of estrus detection and artificial insemination, but many cows do not express heat because of unbalanced rations or because there are only one or a few cows on the farm making the detection of estrus more difficult. Additionally, 40% of cows express estrus poorly, making the task even more challenging for even those with

excellent heat detection skills." Dr. Graham is referring to the unbalanced nutrition that most cows in Turkmenistan receive, which has negatively impacted the ability to recognize heat in cows and in many cases rendered cows anestrus. This has led to an unusually high number of cows, up to 50% in some cases, leaving the herd prematurely to slaughter as opposed to being used for a longer life for milk production and herd reproduction.

Among the highlights of the training was the use of a hand-held ultrasound tool to support the palpation of cows to determine pregnancies in the herd. The ultrasound can be used very effectively to help improve open diagnosis for accurate use of hormones throughout the cycle, thus increasing the efficiency in breeding. Dr. Graham has indicated that this will take a good deal of time and practice, and the decision was unanimously made to leave the ultrasound equipment in the care of lead AI technician Katya Chichnayeva for continued study and practice, which will be shared with other technicians on an as-needed basis throughout the country. Because of the smaller herd size in Turkmenistan, the project is looking into the possibility of a month-long study on US farms to rapidly bring Ms. Chichnayeva's skill level to the optimal international industry standard.

CHALLENGE: Many skills of the veterinarians are sufficient to support livestock development, but the lack of a balanced ration for Turkmen herds remains a critical challenge to the development of a productive industry that is sustainable. As prices for feed and other inputs rise and as profitability decreases, the rate for sending cattle prematurely to slaughter will rise. This will over time eventually create a more food insecure environment for Turkmenistan if not carefully addressed by private sector farmers and government officials in the Ministry of Agriculture.

Public-Private Partnership. The summer season brought to light some challenges that USAID and the Government of Turkmenistan as it applied to the AgTech project and its funded activities. However, the project has since turned a corner with the start of Year 3. October was a slow month due to political activities and holidays that reduced the ability for the project to engage in its planned activities. But simultaneously the project and USAID jointly communicated with the Ministry of Foreign Affairs to clarify protocols and for November and December all planned activities were conducted without any resistance from national or local authorities.

"This type of practical training, where trainees have an opportunity to use modern technology and tools, superior genetic material, and all other necessary learning materials will help these specialists to upgrade their knowledge and skills, in order to better serve the need for large and small livestock farms to increase the productivity of livestock in our country.

- Mr. Orazmuhammet Annageldiyev, Deputy Chairman of Turkmenmallary

Next Step:

Conduct joint activities with the reorganized Turkmenmallary in 2013, particularly supporting large-scale state farms for maximum impact.

This positive change in political environment is epitomized by the partnership between the AgTech project and the State Livestock Association (Turkmenmallary) to conduct an AI training seminar for 10 Turkmenmallary veterinarians on December 17-28. This training is the first of its kind in the livestock sector where USAID funds are being used to increase the technical capabilities of the state technicians. This type of collaboration is paving the way for increased government support. Specifically, Mr. Orazmuhammet Annageldiyev, the Deputy Chairman of Turkmenmallary, and Mr. Atajan Cherkezov, a chief scientist from the National Livestock research Institute, both shared their appreciation for this type of cooperation to restore and improve the livestock sector in Turkmenistan. They have promised to continue cooperating with USAID and the AgTech project as Turkmenmallary reorginizes itself in 2013. Mr. Cherkezov also wrote an article for Taze Oba magazine on this event that he expects will be published in the January 2013 edition.

ESTABLISHMENT OF ARTIFICIAL INSEMINATION CENTERS

A hallmark of the scope of work for the AgTech project is the creation of AI Centers throughout the country, ideally one in each region, to satisfy the livestock development needs of the country. Learning from lessons in the opening and operation of the first AI Center in Mary, the project has taken a region-by-region approach to identifying the most appropriate locations and/or best partners. Among the criteria for partners includes a central location for all farmers, proximity to a medium or large partner farm, proven track record of private sector agricultural success, and relationship to the Government of Turkmenistan, and financial resources available to support sustainable operation of the facility. As reported in Year 2, the project identified and vetted two partners, one in Ahal and one in Dashoguz.

This quarter saw the opening of both new AI centers with the Dashoguz AI Center opening on November 19 and the Ahal AI Center opening on December 14. While the opening for the Dashoguz AI Center was a low-key affair with only the AgTech staff and the local partners in attendance, the project took advantage of the location of the Ahal AI Center to make it a more official event. More than 35 people attended the event including the US Ambassador to Turkmenistan, USAID Country Director, representatives from the Ministry of Agriculture, Turkmenmallary, the State Veterinary Service (national and local representatives), Chevron, the Ak Bugday Etrap Hakimlikm, State Television, and Taza Oba Magazine.

In the opening ceremony, Ahal AI Center partner, Mr. Nepes Karayev, Ambassador Patterson, and Livestock Institute representative, Mr. Atajan Cherkezov, gave speeches on the importance of continued cooperation between USAID and the Government of Turkmenistan to improve the livestock industry. A ribbon-cutting ceremony followed to mark the official opening of the center. All guests toured the facility, and AgTech staff explained the project activities that will make use of the center. A presentation was made to the group showing the films on project AI activities and the Feed Demonstration. At the conclusion of the event, Ambassador

Patterson, Chevron representative Mr. David Cane, and AgTech Chief of Party Mr. Farhat Orunov gave interviews for the State Turkmen Television. The timing of the Ahal opening could not have been better as the AI Training for Turkmenmallary started the following week.

CHALLENGE: Making the AI Centers self-sufficient is a priority to USAID and the AgTech program, but several issues continue to challenge profitability in the sector. It is believed that changes in policy (e.g., liberalization of product registration, import licensing, and licensing for other veterinary activities) will ease the cost of doing business for farmers and veterinarians alike. Requests for these policy changes have been requested by industry professionals, and with a newly reorganized Turkmenmallary on the horizon for 2013, there is cause for new hope in expanding cooperation with the Ministry of Agriculture to improve the sector.

PILOT FEED PRODUCTION

The USAID AgTech project has made great strides to improve the genetic potential of Turkmen dairy cattle, but finding a balanced feed ration remains a challenge to the country's dairy farmers. Challenges with anestrus cows from the consultancy on heat & pregnancy detection confirmed the belief that feed remains a critical constraint to optimal farm efficiency, including milk production. To address this concern, the project plans in Year 3 to open a business plan competition among interested entrepreneurs and farmers who desire to invest in and/or operate a feed milling and production operation. This activity is planned as a way to continue to promote the results from last year's feed demonstration that saw milk production increases up to 150% just by giving a consistent, more balanced ration to the cows. More importantly, it will mark the foundation of a sustainable solution to providing better nutrition to the country's livestock industry. Using the participating project farmers' milk returns from the feed demonstration also shows a dedication and ownership of the solution by the farmers who have the greatest vested interest in improved feed.

CHALLENGE: The capital costs of infrastructure can be very high, meaning that investors must have a long-term outlook for profitability. Finding willing partners who are both financially capable and have the land needed to produce a significant supply of cattle feed is the largest hurdle.

HORTICULTURE COMPONENT

The first quarter of project year three coincides with the beginning of a new season for planting and harvesting greenhouse cucumbers and tomatoes in all velayats of the country. Growers remain cautious about prospects for high yields because of last year's unusually cold winter, which led to insufficient and/or inconsistent gas supplies for their greenhouse heating system. To capitalize on highly favourable market prices for tomatoes and cucumbers during the winter months, farmers are planting on average a third (33%) of their land under greenhouse conditions. This also serves to insure themselves against potential losses due to extreme weather conditions.

During Q1, a total of 22 greenhouses were renovated and/or constructed as a result of AgTech's greenhouse renovation activities in all provinces. When added to the 194 greenhouses renovated and constructed over the past two years, project horticulture activities have directly contributed to a total of 216 new or improved greenhouses. By the end of Year 2, the project had facilitated the installation of drip irrigation systems in demonstration greenhouses in Mary, Lebap and Dashoguz. Using a similar co-financing methodology that was used for demonstration greenhouse construction and renovation, the installation of the drip irrigation systems in these demo greenhouses will be used to highlight the effectiveness of this technology in a series of training seminars planned for Y3. These seminars will focus on low cost installation and using drip irrigation systems in greenhouses for growing produce by using chemigation and fertigation, and supporting the climate control to avoid fungal diseases in plants related to greenhouse humidity, making this a valuable investment for growers.

The project has established communications with the Ukrainian branch of Rijk Zwaan, a Dutch seed company, and the project has included in the annual work plan a study tour for a small group of local seed providers in May 2013. The Ukrainian branch director, Mr. Sergei Vasilevski, has wanted to visit AgTech's project partners' greenhouses, talk to local growers and learn their needs; however, several attempts to come to the country have failed due to visa refusal. Rijk Zwaan has already sent several varieties of cucumbers and tomatoes for field trials, which the company has developed for neighbouring countries, including Azerbaijan and Uzbekistan. These new varieties are now being tested by the project partners in Ahal (tomatoes) and Dashoguz (cucumbers) and the initial feedback shows a solid germination between 90-95%, quite similar to other locally available (though in limited supply) popular Dutch varieties. More information regarding the other qualities, such as disease resistance, yield potential, marketability and commercial viability of these new varieties in local conditions will follow in the second quarter as trial plants start to yield.

AgTech has also learned that licenses to import greenhouse vegetable seeds into the country were granted to 25 entrepreneurs (5 in each velayat) in the country who have backgrounds in agronomy. The project is now targeting these licensed suppliers in attempt to improve the supply chain for inputs

Next Steps:

Link newly licensed seed providers to project seminar participants to increase extension services and improve supplies of seed inputs to producers.

Identify best candidates for study tour to Rijk Zwaan in Ukraine to establish trading relationships for seed input suppliers in Turkmenistan.

as well as to disseminate project developed promotional materials such as booklets, leaflets and other advisory information on agricultural best practices to improve and increase vegetable production in greenhouses. By the end of Q1, the project has already identified 10 of them. In Q2 the project will establish a good working relationship with them by including attracting them in project training seminars and meetings where they can provide extension services and market their seeds to local producers.

HORTICULTURE PRODUCTION

Next Step:

Introduce grading & sorting for tomato and cucumber growers to help them maximize the value of their crops in the marketplace, locally and abroad.

Incentivize competition among local farmers to stimulate use of best practices to achieve higher production levels in their greenhouses.

The uncertainty of when and how many seminars could be conducted in Q1 led to a reduced level of project involvement in horticulture production support. This combined with a harvest season that lasts into January suggests that early reports of weaker production are premature, and the figures are bound to improve in the Q2 report once the harvests are complete.

In an effort to move the program forward to post-production practices, Year 3 promises to begin delivering more support on grading and sorting to help set the foundation for future project to more seriously address value chain development within the horticulture sector with an eye toward export development. A consultancy is being developed to help lead farmers implement international standards of grading and sorting into their greenhouse operations. The intent is to also introduce principles of marketing to help farmers retain the maximum value for their produce in local and international markets.

To help stimulate competition among the farmers, the project is planning on a region by region competition for the Spring/Summer harvests. Each velayat winner will receive support for his/her family's greenhouse and recognition in the media for their strong efforts. The project will assess winners based on production per square meter of greenhouse, and the project M&E Manager and Agribusiness Specialist will verify the reported results before any official announcements are made.

GREENHOUSE TRAININGS & SEMINARS

The number of seminars and training session were significantly reduced in the Year 3 work plan. This decision was made because the project has hit a critical mass in the number of training seminar participants in greenhouse concentrated areas where the project works, and also due to additional bureaucracy imposed by the MFA and local authorities in conducting seminars in and around the velayats. The Q1 seminars that were planned and held focused on two important aspects of greenhouse management: use of better irrigation technologies and plant protection.

Following the installation of drip irrigation systems in demonstration greenhouses in three provinces the project has planned one-day training session on the subject to provide hands on training on installation and explain economic and environmental benefits of the drip irrigation systems. The drip irrigation systems in greenhouses are widely used technology in many households in the Ahal province and this technology will have increasingly important effect in Dashoguz and Balkan provinces, where the growers face difficulties accessing irrigation water. The first series of seminars in drip irrigation systems were planned for October 2012, but due to delays in official approval from the MFA for planned events that all USAID projects have now to expect, the projects was not able to conduct them. Instead, the subject was covered during three seminars held in Mary, Lebap and Dashoguz a month later in November.

The project conducted pesticide safe usage seminars in Q3 of Y2 and were quite successful with many growers who learned for the first time about harmful effects and the illegality of many chemicals that are currently available and being used in Turkmen greenhouses. The project decided to conduct additional training sessions in pest and disease control in each velayats to supplement the previous seminars, and the first series of seminars were scheduled for November 2012 to coincide with the new growing season of cucumbers and tomatoes. It is noteworthy that the project received an official approval from the MFA for its November activities in mid-November, which meant the project was able to conduct training seminars in only Mary, Lebap and Dashoguz that were scheduled for the second half of the month (i.e., Ahal and Balkan training seminars were cancelled).

CHALLENGE: Delays for approval of project planned activities by the MFA continues to burden the planning and implementation process. This has also led to a decrease in the number of training participants due to increased attention from the local authorities that make participants feel uncomfortable. Finding qualified local specialists remains a limitation to the depth of the AgTech training program.

MANAGEMENT AND PERSONNEL

TRANSITION TO A LOCAL CHIEF OF PARTY

Mr. Farhat Orunov has been working as the AgTech Project's Deputy Chief of Party since 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. Mr. Yesolitis, the former COP, left the project at the end of Q4 of Year 2 as planned and Mr. Orunov was officially approved as the COP on October 12, 2012. To support this transition, the project sent Dr. Wesley Weidemann to discuss the work plan for Year 3 with USAID and AgTech staff, and to meet project stakeholders jointly with Mr. Orunov, introducing him as the new manager of the program. As a measure of stability, Mr. Yesolitis returns to the home office where he will continue to monitor and manage project backstopping activities to ensure smooth project implementation and financial management.

PMP TARGETS AND DEVIATIONS

Performance Indicator	Performance Indicator Definition	Year 3 Proposed	Year 3 Actual (first quarter)
50% increase in HH income	*Horticulture HHs and farms increasing income by 50%*	*1000*	--
	Livestock HHs and farms increasing their income by 50%	*1000*	--
Person hours of training completed in private sector productive capacity supported by USG assistance	*Number of hours of training completed by beneficiaries, disaggregated by gender*	*750*	***788***
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*	***305***
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 %*	***N/A***
Value of produce sold to local and international markets	*USD value of goods in livestock and horticulture sector disaggregated by product and velayat*	*Baseline + 20%*	***N/A***
Number of agriculture-related firms benefiting directly from USG supported interventions.	*Number of input providers and buyers strengthened to provide farmers with necessary inputs.*	*150*	***13***
Number of greenhouses constructed or improved	*Number greenhouses constructed and/or renovated in each velayat*	*100*	***22***
Land under improved technologies or management practices	*Indicates the number of ha under greenhouse or livestock project activities (existing and new land).*	*500*	***11***

CHANGE IN PMEP INDICATORS

At the request of USAID, the AgTech project has included a new PMEP OP level indicator, "Indicator 4.6.2-11: *Person hours of training completed in private sector productive capacity supported by USG assistance*." The project has inserted this into the PMEP and will report on this figure as it applies to both gender and region in Turkmenistan. To accommodate this, with approval from USAID the project decided to remove the indicator, "*Rural HHs benefiting directly from USG Interventions Number of beneficiaries and training participants, disaggregated by gender and region*."

The project has begun calculating the person hours conducted in the first two year to report on cumulative results, which should be available by the Q2 report. Moving forward, the M&E Manger, Zulya Achilova, can easily track person hours of training conducted in the respective agricultural

sectors (i.e., horticulture and livestock). Should trainings prove difficult to hold in the velayats, the project plans on using multimedia and other modern training tools to train people remotely in rural areas where the information is most beneficial to farmers.

Number of Person Hours of Training Completed (Disaggregated by gender and region)

Region	Female	Male	Total Year 3
Ahal	44	508	552
Mary	16	56	72
Lebap	12	76	88
Balkan	0	8	8
Dashoguz	12	56	68
	84	**704**	**788**

Number of Greenhouses Constructed and/or Renovated

Region	Number of constructed and reconstructed greenhouses	Total Project To Date
Ahal	3	39
Mary	2	91
Lebap	16	78
Balkan	0	4
Dashoguz	1	4
	22	**216**

Farmer Households Adopting New Technologies or Practices

Region	HHs in Year 3	Total Project To Date
Ahal	144	752
Mary	27	447
Dashoguz	85	354
Lebap	49	295
Balkan	0	4
	295	**1852**

Total Calves Born from Artificial Insemination (as of December 31, 2012)

Calves	Known Heads	Est. Total*
Holstein male	**54**	**121**
Holstein female	**49**	**115**
Swiss male	**92**	**159**
Swiss female	**73**	**139**
Stillborn	8	14
Aborted	11	20
Other died or slaughtered	19	34
Total Calves Born:	**268**	**533**

*Extrapolated based on number of total inseminations.

CHEVRON FUNDED ACTIVITIES

Last year the USAID Agriculture Technology Program in Turkmenistan received gift funding from Chevron in the amount of $150,000, which was added to the ceiling price of the contract and obligated for project activities as previously designed and agreed upon by Chevron and USAID. As of December 31, 2012, the project has completed the spending of this private sector partner's investment in the program.

LN Generator

The project-procured NL280 400 VAC, 50 Hz 3-phase nitrogen generator and liquefier now has a new home in the Turkmen State Veterinary Services Laboratory in Ahal. Dr. Wes Weidemann was trained by Kelvin International to conduct the installation training during his November visit; however, the planned Nov. 17 training seminar was cancelled due to a scheduling conflict on the part of the State Veterinary Services. The project continues to work with the manufacturer, Kelvin International, who continues to provide technical support by remote communications. Once all paperwork has been cleared for the disposition of the equipment to the State Veterinary Services, the project will hold an official ceremony to commemorate this step forward in livestock development and public-private partnerships in Turkmenistan, likely to take place in Q2.

Heat & Pregnancy Detection Seminar for AI Specialists

As planned, the remaining $35,703.83 of the gift funds provided by Chevron was spent this quarter on a consultancy by Dr. Thomas Graham, CEO and career veterinarian from Veterinarians Without Borders, who provided two weeks of training to 13 on heat detection and other topics for breeding bovine livestock. This training was the next step for AI specialists to learn how to increase their ability to recognize heat intervals, plan for synchronized breeding for optimal farm efficiency, and lower the number of days in utero for the specialists to palpate pregnant cows. As a part of this training, USAID and Chevron co-funded the procurement of a bovine ultrasound machine, which Dr. Graham used in November during the training consultancy. The ultrasound remains in the care

of the project, with the project's lead breeding consultant, Ms. Katya Chichnayeva, in control of its shared use throughout the velayats. It will be a tool that all 13 AI specialists use to training the remaining AI specialists at training events and seminars at the area AI Centers throughout Year 3. The result of this will be a reduction of accidental fetal aborts and an increase in heat detection efficiency, maximizing the productivity of cows and ideally speeding up the process of improving the genetic potential of Turkmenistan's dairy herd. This consultancy and procurement combined to fully exhaust the $150,000 in financial support from Chevron Corporation. Monitoring results will continue throughout the life of the project on the benefits of this investment.

M&E Targets and Results for Chevron Funding

Indicator		Year 2		Year 3		Year 4
Number of direct and indirect beneficiaries (disaggregated by women/men and adults/youth under 18);		55 total	54 male	13 total	12 male	
			1 female		1 female	
			55 adults		13 adults	
			0 youth		0 youth	
Number of partners leveraged		1		1		
Dollar amount of funds leveraged through partnership	Initial USAID Contribution	$0		$1,373.16		
	Chevron Contribution	$114,296.17		$35,703.83		
Amount of in-kind contribution leveraged through partnership		$0		$0		