PEACE

A PROJECT OF THE GLOBAL LIVESTOCK CRSP

"Reducing Risk for the Kuchi People"

Pastoral Engagement, Adaptation and Capacity Enhancement (PEACE) Project AFGHANISTAN

Annual Report

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Submitted By:

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Summary

Food security has increasingly become a chronic issue for Afghanistan due to decades of conflict, political instability, expansion of human populations, oil prices, and changing land use/ land tenure policies. For nomadic herders in Afghanistan, survival of their livestock herds determines their well being. The Afghanistan PEACE Project is focused on addressing the plight of nomadic herders in Afghanistan, and at the same time, facilitating the Ministry of Agriculture, Irrigation and Livestock (MAIL) in its efforts to improve livestock production and range management. To achieve this aim, the Afghanistan PEACE Project has been implementing a Livestock Early Warning System (LEWS) program to address native forage supplies issues; and a nutritional profiling system using Near-Infrared Reflectance Spectroscopy to address native forage quality concerns. The Project also works directly with the Independent Department of Kuchi to facilitate their ability to resolve land access issues peacefully.

Implementation of the LEWS is progressing slowly and surely as we try to balance data collection needs with security issues. Security was something we knew we would have to deal with from the very start of the project and it has not improved for us since that time. Security issues in combination with very steep terrain and a poor road network is proving to be quite challenging with respect to acquiring large numbers of samples. We are making headway, however, and are looking forward to our first vegetation predictions by July.

The nutritional profiling system that we are putting in place is nearly ready for scanning and we expect that we will be doing our first fecal scans in Afghanistan in about 2 months. The equation for Karakal sheep is being developed for Afghanistan and is in the final stages. We have an extensive training planned for September and it will coincide with more feeding trials on additional breeds.

Developing a strategy for the Kuchi people to address their land access issues has received much attention in the past year. We have been successful at gaining the trust of Kuchi representatives and leaders across Afghanistan. We are doing this through several means. This includes; sponsoring peace building workshops for Department of Kuchi Representatives from 23 Provinces; and supporting some of the provincial shura meetings (12 Provinces). In return they are providing us with current information regarding their livestock production challenges.

Some of highlights of the past year have been:

LEWS

- Plant species identification and mounting (over 225 plants just from last year's field season)
- Strengthening links with botanists and institutions in Germany
- Converting plant species distribution data from the 1960's into GIS distribution maps
- Plant specimens have been photographed and digitally stored
- Digitizing of field data and Phygrow parameterization
- Redigitizing of historical climate data
- LEWS training for MAIL range staff

Nutritional Profiling

- Sheep feeding trials conducted in Kabul
- Experimental design training for Kabul University Students in collaboration with the USAID A4 Program
- Set-up of te NIRS lab in collaboration with MAIL
- Development of training modules for nutritional profiling
- Diet:fecal pair results

- Near infrared equation development in Texas

Strategy for assisting Kuchi people and livestock production in Afghansitan

- Peace and Negotiation Workshops for Kuchi Representatives
- Collaborative Peace and Negotiation Workshops for Kuchi and Hazara Representatives
- Facilitation of Kuchi shura meetings in 12 Provinces
- Data entry for Kuchi database

Additional Capacity Building

- Internship for 10 University students during Karakal sheep feeding trials
- Training delivered to Mercy Corps field staff on monitoring vegetation change
- Trainings delivered to students at Kabul University regarding vegetation sampling methods, GPS technology, feeding trial research and design
- 18 presentations regarding LEWS and Nutritional Profiling delivered to Provincial MAIL staff, NGO's and Ministry advisory committees.
- 3 presentations regarding conflict resolution
- Web site development
- Livestock Production Workshop held in Kabul in association with the GL-CRSP and Purdue University.

Major Activities Implemented this year

B. Infusion of the Forage Monitoring System

We have identified 225 plant species and have been developing the data set that will be used in the Phygrow model for forage prediction. This information can also be used to develop vegetation classifications for some of Afghanistan's Rangelands. These specimens have been mounted for use as herbarium specimens. The collection will be retained with our project until such time as the Ministry of Agriculture can properly house the specimens.

We have been assisted with identification by the University of Gottingen and the Munich Botanical Garden and Herbarium. We have been able to obtain a commitment from at least two individuals to help with species identification over the next 3 years. One is the botanists who helped with species identification last year, and the other is one of the leading authorities on Afghanistan's flora. The leading authority, Dr. Dieter Podlech, also kindly agreed to share his Afghanistan species collection lists with the PEACE Project. These lists range in date from 1965 to 1971 and include over 1000 specimens, their location, collection number and the collection date. We are currently in the process of converting this data to a more manageable database for querying and mapping purposes. Once completed, this information will be made available to the public on our web site.

The plant specimens that have been mounted have also been photographed and we are using these photos to help us with future identification. The digital photos provide a quick and portable reference and we show them to herders and livestock producers during our field trips. This has become an effective way to recheck common plant names (i.e., Dari and Pashto) and their uses.

The historical climate data was completely digitized this past year. The data includes 21 stations and each station has about 20 years of data. The main task has been to re-format the data and check it against the original hard copy. Unfortunately, the way the data that was entered previously was fraught with errors. Cells were formatted incorrectly and decimal points were missing on many of the measurements. The good news is that we have the original hard copy for comparison. Once corrected, the data will be sent to Texas

to undergo modeling techniques that will fill in the missing data. The end product will allow us to compare current climate conditions with historic norms.

Our field season began on March 23rd with a 12 day trip to Balkh and other northern provinces. We have contracted two Kabul University graduates (Faculty of Agriculture) to accompany us this year. As we did last year, we will continue to have 5 Ministry of Agriculture staff conducting the vegetation sampling with us for the duration of the field season. We bring 3 MAIL staff from Kabul and pick up an additional 2 staff from each province we visit.

This field season we were able to conduct vegetation sampling in 7 Provinces. We have a large team this year and can effectively break into 2 teams while collecting data. This has helped us to sample a bit faster than last year. The northern lowland grasslands were the first areas that we visited. These grasslands are dominated by *Poa bulbosa* and *Carex pachystachis*. The condition of the early spring rangelands were not very good this year and offered very little in the way of forage to female sheep and goats that require good nutrition to produce milk for their newborns. In some areas of the Northern Provinces the rains simply failed and forced many of the Kuchi to search for grazing areas in Tajikistan and Turkmenistan. Higher elevation rangelands fared slightly better although these too were not extremely productive this year.

Notable survey accomplishments during this year's field season include:

- completed 32 new surveys and monitored 7 previous sites
- collected close to 200 new plant specimens
- soil pit characterization at locations where vegetation is being monitored for LEWS

We have had some difficulties this year with expanding into new survey areas due to security issues. We had to cancel trips into Faryab, Jawzjan and Logar, to date, due to very poor security. We are hopeful that we can visit these sites next year.

The initial model runs for the plant growth model have not yet been completed. The security difficulties we are having in getting enough samples are partly responsible. We are hoping that with the 2nd year's survey data we should be able to start making some predictions by the end of this growing season. In the meantime, the plant growth modeler has been continuing to collect and parameterize the soil, weather, and survey information.

C. Infusion of the NIRS Nutritional Management System.

The NIRS Program - NIRS technology allows an analyst to determine the quality of forage that an animal is eating whether it comes from native sources or as a supplement. The means of assessing forage quality with NIRS technology comes through the indirect analyses of fecal samples obtained from free-ranging animals. Prior to the analyses of field samples, diet:fecal pair research must be conducted under laboratory conditions with known quality diets to develop predictive statistical models specific to breeds in Afghanistan.

This year began with an opportunistic visit to Texas A&M's nutritional profiling lab by head veterinarian and Director of the Animal Health and Husbandry Department, Dr. Aziz Osmani. He was being hosted by Bob Smith, USDA, in the United States and they had planned a visit to TAMU. We organized a tour of the NIRS facility at TAMU for them. Dr. Osmani was able to see first-hand the type of laboratory we are developing, for his department, here in Kabul.

The NIRS laboratory is located in the Department of Animal Health and Husbandry in their Darulaman Complex. The laboratory is housed within one building on the compound. A large room is devoted to the sheep and goat feeding trials. Feeding trials are conducted to develop nutritional equations for the Near Infrared readings. A second room is used for processing fecal samples collected during the feeding trials or

from Afghanistan's rangelands. The processing room contains a drying oven, grinder, scale, desiccator, and collection supplies. The third room houses the near infrared scanner and computer that we use to take the sample-scan.

Diet:fecal Pair Research Details - In October 2007, the Afghanistan PEACE Project commenced its first of three quality-controlled feeding (e.g. diet) trials with 10 male karakul sheep. The karakul is a breed of sheep favored by Kuchi herders because of its resistance to disease and parasites, and because the wool and hides from this breed commands a high price. The quality-controlled feeding trial consisted of feeding the yearling mail sheep with three different diets followed by the collection of fecal samples to predict dietary crude protein (CP) and digestible organic matter (DOM). Diet samples and fecal samples obtained during the feeding trials were shipped to Texas A&M University for chemical and NIRS analyses.

The results of the fecal scans showed that H-values from the 100 samples were very low, which is good. If H's were high, this would basically indicate that more work would be required. This means that there is still a good possibility that current equations, once adapted, may have use in Afghanistan. The results of the chemical analysis of crude protein and digestible organic matter showed that the diets used in the feeding trials were in the nutritional range that we expected. These results will now be used to aid predictive equation development for crude protein and digestible organic matter.

In January, the near infrared scanner and computer were brought to Afghanistan. The Ministry of Agriculture, Department of Animal Health and Husbandry has identified a person that we will train to operate the equipment for the nutritional profiling technique.

We have been developing several tutorials and e-training modules for the near infrared scanner and its software. We are attempting to create self-training materials that will allow someone to set up and use the equipment on their own. An online course will teach students how to implement NIRS fecal sampling technology, which provides a specific point in time analysis of the chemical makeup of a manure sample. Once the chemistry of the diet and spectra of manure is identified, the amount of crude protein (CP) and digestible organic matter (DOM) can be determined. Ministry staff and university students will learn how to set up and maintain equipment, conduct calibration and validation of equations, as well as collect and process samples. The materials will then be translated into Dari for use during feeding trials scheduled for the fall. The Division of Animal Health director has designated a person to learn the NIRS technique.

Senior students at Kabul University competed for a research grant to carry out research in Afghanistan. The PEACE Project has collaborated with the ASAP project in sponsoring feeding trial research that will ultimately be conducted by students. The research will develop nutritional profiling for goats in Afghanistan.

D. Linking the Technology with Herder Alliances

We have developed a good working relationship with the Department of Kuchi in Kabul regarding the identification and use of Herder Alliances to disseminate forage information. The facilitation of Kuchi Herder alliances is one of the components required for the dissemination of LEWS and NIRS information. Creation of the information network that can be used to deliver timely information to herders requires intimate knowledge of how herders organize themselves. To accomplish this we have been working with the Director of Kuchi, Daud Shah Niazi. He has suggested that one easy way to begin the formal development of these alliances would be to initiate meetings (shuras) within each Province that include Kuchi leaders. In addition to the usual sharing of information and problem solving, monthly meetings would include; training in the development of conflict resolution strategies, training in the use of LEWS and NIRS information, and the development of stronger alliances that would have access to improved information sources.

A data base is being collected from many provinces around Afghanistan. This information will include season information about Kuchi from their locations to the problems they face in that location. While in Nangarhar Province we spoke with the Kuchi shura members about providing this information to us. The Independent department of Kuchi Director has distributed survey forms to acquire this information for our project.

Facilitation of Kuchi shura meetings in 12 Provinces began in May 2008. The purpose of facilitating the meetings is two-fold. First, we are interested in gaining better seasonal information about the Kuchi's challenges. This will be an agenda item for every shura meeting we facilitate. Secondly, we feel that by strengthening the shura meetings we are in fact strengthening what could be called "herder alliances". We are interested in developing herder alliances as a means to disseminate our forage quantity and quality information. Each shura gathering provides a way to pass information directly to the herders that need it. We will be attending as many of these herder association meetings as possible.

E. Building Capacity within the MAIL, Independent Department of Kuchi, and Kabul University

Ministry of Agriculture, Irrigation and Livestock – Government capacity building remains to be one of the most important focuses for the PEACE Project.

Enabling the Division of Natural Resources to produce and interpret the early warning results requires extended face to face capacity building. We spend about 4 months in the field together with MAIL staff and additional time during the remainder of the year working with the same rangeland people. Provincial rangeland-staff also accompany us while we are working in their provinces. Several one-day training seminars were delivered this year to MAIL staff from the Range department. They were given a refresher training on project overview and we also covered the LEWS component in detail. They have been very involved in the data collection component used to make LEWS predictions. The next step in training for them is to learn about entering the data that is collected in the field. To take on this next step they will need to have computer training. We are working out an agreement with the Ministry to allow them to receive computer classes.

Much effort is being placed into the development of training materials. This is especially true for the nutritional profiling system. NIRS training modules, being developed in Texas, will ensure that nutritional profiling is sustainable within the Department of Animal Health and Husbandry. Training modules are being specifically developed for the equipment being used in Afghanistan.

Three presentations have been made to the key MAIL staff and the steering committee within the Ministry of Agriculture. In addition, 2 presentations have been delivered to Ministry of Agriculture rangeland staff.

Kuchi Peace and Negotiation training - One of the components of the Afghanistan PEACE Project is to help the Department of Kuchi develop a strategy to solve conflicts across Afghanistan. We have engaged the Department of Kuchi by providing their provincial directors with peace and negotiation training. The strategy for resolving conflicts, includes not only training Kuchi staff but also includes helping them to prioritize and address specific land access, and winter feed problems. The initial step for the latter will be the development of a Kuchi database that will help us to understand how Kuchi are organized across the country.

On November 4-7th, 2007, twenty six Kuchi Representatives from 23 provinces attended a peace and negotiation training workshop implemented by the Sanayee Development Organization (SDO). The objective of training Kuchi representatives was to help them to be better prepared to solve a variety of conflicts in their provinces.

The workshop covered a variety of topics and was delivered in Pashto and Dari. Four experts from SDO presented material developed to give participants some basic tools to solve problems and conflicts. First they began by developing a list of Kuchi problems and potential solutions to those problems.

Topics covered included:

1. Defining conflict
2. Types of conflict
3. Understanding conflict process
4. Methods to solve conflicts
5. Building Peace

Examples of problem solving techniques were given and discussions included most participants. There was an overall positive reaction to the workshop discussions and by the end of the 4th day most of the representatives said they were very happy with the messages delivered. There was also great interest in having peace and negotiation workshops held in the provinces.

We have had a conflict resolution consultant working for us in Kabul since January. He has been working with the independent Department of Kuchi for the last 6 months to develop a strategy to solve conflicts. In addition he has taken on 3 conflict resolution workshops that began on March 8th and finished in early April. These workshops were requested by the Independent Dept. of Kuchi to help resolve their highest- priority conflict with the Hazara people over grazing rights in southern Bamyan. The workshops attempted to develop an atmosphere of resolution between the Kuchi and Hazara people. The Advisor to the President on Tribal Affairs sanctioned the workshops as a means to promote reconciliation between the two groups prior to the start of the growing season. Each group sent 30 leaders to separate workshops to begin the training process. Half of the leaders from each group then attended a third joint workshop with Hazara and Kuchi leaders. Some of the positive outcomes of the workshop were;

- Mutual recognition of rights (grazing, education, health, etc.)
- Action plans: practical suggestions for future collaboration (i.e creating joint local shuras)
- Exchange of contact information between participants

Participants were also evaluated to determine how much of the material they learned and understood. When the baseline survey was compared with the final evaluation there was an increased knowledge of conflict resolution methods, an increased knowledge of the other group's views, and concrete suggestions for future collaboration. These results provided a bit of optimism for a complicated situation. The next step is to continue with the two groups to conduct follow-up evaluations (June), identify local leaders for future cooperation, and provide support for local joint shura meetings.

University Collaboration- The diet: fecal pair research offered opportunities for collaboration with the Kabul University and USAID's A4 program. As part of this collaboration, internships were offered to two 3rd year students from Kabul University and involved full participation in all aspects of the feeding trial, as described above. In addition to the two internships, six- 2nd and 3rd year students were invited to participate in the feeding trials for a minimum of 3 days each. These students assisted by working side-by-side with the interns, in all phases of the trials.

Collaboration also involved giving two seminars to Dr Sahak's class on Feeding and Feeding Trials. The first seminar involved a field trip to the Daruleman facility where the trials were being held, at the start of the medium-quality feeding trial. The seminar included an overview of Texas A&M University's LEWs and NIRSs programs; the purpose of the diet: fecal pair research and how the feeding trials were being conducted; and how the results will be applied in the context of the NIRS program. The second seminar took place at the Kabul University and involved discussions on protocol for drying fecal samples for shipment to the US, observed total forage consumption over the duration of the trial, and possible explanations for

individual differences in consumption and weight gain. In total, 20 students participated in the trial with translations provided by Dr. Sahak and Mr Spein-John, both faculty members from the Kabul University. Students from Dr. Sakak's class included:

Over a 2 day period, lectures were delivered to Kabul University students on vegetation measurement methods. The lectures were followed by hands-on field work training to present methods used to the collect information for the LEWS.

Other Achievements

- Our web site has been officially placed at http://afghanpeace.org Please visit this site for information related to the project
- Supported and collaborated with the EU's Animal Health Development Program. We provided them with blood and fecal samples from our captive sheep so that they could train students at Kabul University
- Students in the Animal Science department learned how to use different pieces of lab equipment to conduct diagnostic tests on the blood and fecal samples
- Attended USAID's Agricultural Fair – We spent 3 days promoting our project at Ag Fair. We received much interest in our presentations at Ag Fair sometimes accumulating crowds of over 50 people at a time. We estimate that approximately 3000 people stopped at our booth during the event
- Trained Mercy Corps staff to monitor vegetation change in pastures undergoing restoration efforts. Staff were trained from Burka and Khost districts in Baghlan Province and Ishkamish district in Takhar Province. Mercy Corps is promoting watershed protection and restoration in all three areas and need help designing sampling protocol for monitoring species composition and coverage changes.