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

Life of Project Work Plan

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Submitted By:

University of California at Davis

In Collaboration With:

Texas A&M University System

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**Initiating Activities for Pastoral Engagement,
Adaptation and Capacity Enhancement (PEACE) Project**

Background:

The Pastoral Engagement, Adaptation and Capacity Enhancement (PEACE) project is an extension of the existing Livestock Information Network and Knowledge System (LINKS)/ Global Livestock Collaborative Research Support Program (GL-CRSP) project which applies forage and animal monitoring technology developed in the Livestock Early Warning System (LEWS) technology phase of the program to pastoral communities in Mongolia and East Africa. USAID's GL-CRSP is comprised of multidisciplinary, collaborative projects focused on economic growth, human nutrition, environment, and policy related to animal agriculture and linked by a global theme of risk in a changing environment. For the past eight years, the GL-CRSP has undertaken work to develop LEWS for pastoral communities in developing countries. LEWS uses a satellite-based weather and vegetation greenness technology coupled with biophysical models to predict forage conditions across the landscape. LEWS, along with animal nutrition monitoring technologies and information technology for markets, allows pastoralists and development decision-makers to be proactive in implementing appropriate range-livestock management practices. Implementing these practices protect the natural resource base and improve the livelihoods of pastoralists using the rangelands. These technologies provide timely information on forage conditions that increase lead-time for making risk mitigation decisions by herder groups and policy makers. Nutritional profiling to assess and manage livestock performance is integrated with the forage monitoring technology to enable herders to make business decisions that enhance profitability within an array of livestock enterprises. The PEACE project would adapt these technologies to Afghanistan by integrating technologies with capacity building and participatory research among Afghan pastoralists, thus helping to revitalize the extensive livestock sector of the Afghan nation's economy.

Justification:

The PEACE project will reduce the social and economic risks associated with the production of livestock in Afghanistan. The PEACE project will improve conflict resolution processes within pastoral communities, provide more timely information on emerging forage conditions, and increase the number of cash generating livestock enterprises for pastoralists. When linked with more transparent market information, the livestock economy of the nation will improve as it meets increasing demand for meat products, stabilizes social conditions (saves lives), and helps lessen negative impacts on the environment while knowledge is being transferred. Risk management is a major concern of the government and these technologies directly address this concern.

Additionally, the project will contribute to USAID objectives relating to gender, conflict mitigation, and stakeholder capacity building. Results of GL-CRSP LINKS project in Africa show that the implementation of the early warning system empowered women and the family unit. They were afforded the opportunity for better planning relating to the absences of male family members and the associated needs for care of the elderly and children. Implementation of the project has also reduced conflict by allowing communities to accurately predict fluctuations in resource availability (water, non-forage benefits) and begin negotiations sooner. Similarly, the capacity of stakeholders to make informed decisions about responses to changing conditions is facilitated by implementation of the system.

Development Relevance

After the fall of the Taliban in late 2001, Afghanistan faced major challenges in rebuilding the agriculture sector. Emerging from more than 20 years of conflict, exacerbated by years of drought, the agriculture economy was ruined. Afghanistan's food production capacity was damaged and farmers and nomads were impoverished. A country that once boasted an agricultural sector that contributed to more than 80 percent of the national income was now heavily dependent on food aid from international donors.

Challenges for development in the livestock sector and especially pastoral development among the *kuchi* are especially daunting. Years of conflict and drought have severely affected nomadic pastoral production systems. Traditional migration routes were disrupted, rangelands were plowed up to plant crops, access to grazing land for the *kuchi* has been restricted, and many livestock were lost. The *kuchi* saw their livelihoods greatly eroded, and even the most vulnerable have received little support to-date from the Government of the international community. Conflicts over grazing land tenure are a major issue that needs to be addressed. The lack of information on the condition of rangelands, their carrying capacities, and current livestock management practices of the *kuchi* also hamper development.

Building on the successes and lessons-learned to-date of RAMP and the experience of other donor-funded programs, the PEACE project is designed to further improve natural resource management (especially of the rangelands) and promote the development of the extensive livestock sector.

U.S. Benefits

The technology being applied involves the first use of the CMORPH weather satellite technology for extensive grazing lands. If successful, this technology can be transferred back to the USA to serve the livestock industry by improving the emerging livestock early warning system in the USA. The CMORPH and SNOW/ICE disaster monitoring also has application in USDA Risk Management Agency risk management tools for the ranching industry.

Objective:

The PEACE project will promote development of the extensive livestock sector through support to policy planning, pastoral land tenure conflict resolution, and introduction of new technologies to improve rangeland management and livestock production and marketing. The project will also help build capacity of government personnel responsible for planning and implementing livestock development and rangeland resource management.

Outcomes:

As a multidisciplinary program, the PEACE project will result in a strengthened and productive nomadic and semi-nomadic pastoral system that is capable of responding and adapting to market forces in a natural environment characterized by high risk. The PEACE project will contribute by:

1. developing a thriving livestock sector by reducing the risks associated with livestock production. Although PEACE is focused on the nomadic herders, the information produced will be available to anyone in the country that would benefit from forage-condition predictions, forage-nutritional status and/or livestock marketing information.
2. establishing a scientific database on rangeland resources and nomadic pastoral production systems, including generation of near real-time resource data to support emerging resource decision-making.
3. developing the capacity of the MAAHF to be an effective support agency in the development and promotion of extensive livestock production, with supporting policy and regulations;
4. improving access to technical information by *kuchi* through the development of an information network. This network will include the government, NGO and the private sector in order to effectively disseminate LEWS, NIRS and LINKS information to herder alliances throughout the country;
5. defining, evaluating, developing, and expanding domestic markets for livestock/processed products and associated market information and assisting with export markets for high-value livestock products through targeted interventions throughout the livestock market value chain;
6. creating forward and backward linkages between pastoral associations or cooperative alliances, production services dealers, wholesalers, retailers, researchers and government;
7. establishing a research and extension system that effectively supports the continued development of the Afghan nomadic pastoral system through the introduction and adaptation of new technologies; and
8. analyzing the resulting impact of the PEACE project in order to gauge changes in producer and consumer welfare. This, in turn, provides the information necessary for the government to set policy that addresses national food security needs.

Training

Training as an important element of capacity building will include the following elements: (1) Technical training for university students to conduct field and laboratory work, (2) training of key government agencies in effective outreach on LEWS, (3) assisting NGOs in effective communication of LEWS reports, (4) building capacity for the NIRS lab, (5) training in conflict management, and (6) pastoral community training in how to effectively use the LEWS, LINKS and NIRS information to manage risk in their production environments.

Approach:

The PEACE Project will consist of the following major components:

1. Implementation of a Livestock Early Warning System (LEWS)
2. Livestock Nutritional Profiling System and Strategic Use of Fodder and Supplemental Feeds
3. Livestock Marketing Information Systems and Cooperative Marketing Alliances
4. Pastoral Conflict Resolution and Rural Land Tenure Policy
5. Economic Assessment of Kuchi Livestock Sector in Afghanistan and Impacts of PEACE Project

Capacity building for Afghan government personnel, university students, NGO's and *kuchi* will be a cross-cutting theme as well as a participatory approach to research and implementation that includes the active involvement of *kuchi*.

The actual modeling technology will not be used directly by nomadic people. The primary product used by nomadic people will be information provided either directly in the form of voice interpretation (e.g., Radio Denash) or indirectly through NGO's working an area [i.e., Department of Disaster Preparedness (DDP) working with the reporting network of the Ministry of Rural Rehabilitation and Development (MRRD), and regional staff of the Ministry of Agriculture, Animal Husbandry and Food (MAAHF)].

GL-CRSP experience shows that "early warnings" are distributed among a wide array of institutions working with pastoral communities and that the advisories help pastoralists plan what to do with their animals and when to move them. In other words, knowledge of the forage status allows the pastoralists to gauge price of grain and price of animals and allows them to proactively respond to market conditions by selling animals or repositioning themselves to mitigate drought conditions.

The GL-CRSP/LINKS Livestock Marketing Information System (LMIS) makes the marketing process more tangible and transparent, improving efficiency for both pastoralists and traders which translate into more value for livestock assets.

The PEACE Project will work with other on-going USAID initiatives to promote rangeland resource management and livestock development. Specifically, PEACE will work with RAMP (Rebuilding Agricultural Markets in Afghanistan Project) and the follow-on to RAMP, the new Animal Health activity of the PASA with USDA, and the Biodiversity Conservation Project with Wildlife Conservation Society to create linkages across target communities and further support the integration of services and interventions.

Activities:

Budget lines associated with each activity are shown in brackets. Respective sub-sheets are referred to as T=TAES, CC = In-Country Collaborating Institution (subcontractor)

Year 1

A. Establish in-country administrative support of the PEACE program.

Sign an agreement with an in-country Cooperator Agency to house and provide support for the team needed in the project.

Output: Establishment of the necessary office capacity, logistical support (vehicles, drivers, etc.), and communications to support the program on the ground, in-country. (T.I.A.1; CC.I.3; CC.IV.1/2/3/4/5; CC.IX.A/B/C/D)

B. Infusion of Forage Monitoring Technology.

The infusion of the forage monitoring technology will occur in phases. Phase I will be conducted in the first year and will be implemented in a selected area of Afghanistan. This activity will include the assimilation and/or creation of data to include a natural resource inventory (T.I.B.1; T.IV.B.2/3/4/5.), climate and weather data accumulation (T.I.B.1; T.V.F/G;), livestock inventory (CC.I.B.2/4; T.IV.B.2/3/4/5;), and assessment of vegetative communities (T.II.A.2; T.II.B.3; CC.I.B.1/4; T.IV.B.2/3/4/5; T.V.C/D/E;) for selected project areas in Afghanistan. (T.IV.A.1/2; CC.III.B; CC.IX.1/2)

Output: A natural resource data base for the selected area of study to be chosen for year one. Establishment of infrastructure for weather stations, and data collection to begin the forage monitoring system that provides near-real time spatial and temporal assessment of current and 90-day forecasted forage conditions for Afghan livestock producers.

C. Infusion of the NIRS Nutritional Management System.

Identify a location and make arrangements for facilities to house the NIRS Laboratory. Establish who is to run the laboratory on a daily basis and establish the regulation and procedures for processing samples in the laboratory. (T.I.A.2; T.IV.A.1; T.IV.B.1/2; T.V.I)

Output: Organizational structure for a NIRS Laboratory, dedicated to nutritional monitoring of sheep, goats, cattle, and horses that provides an assessment of nutritional balance, changes in body conditions, and optimal fodder/ concentrate feed interventions for various livestock production systems of Afghan producers. The NIRS lab will be established and personnel trained in a manner where the lab will be self-sustaining without project supervision after the program is completed. The NIRS lab will be placed in a network of labs that cooperate around the world and share problem solving and new concepts.

D. Forage and Nutritional Monitoring Information Delivery and Outreach.

Implementation of the forage monitoring activity involves both U.S. side and Afghanistan activities. Activities in the U.S.A. constitute the duplication of the LEWS software, analytical, and early warning delivery system as currently operating in East Africa with Afghanistan data. This activity will be implemented on the LEWS grid computing system at Texas A&M. (T.I.B.2/3/4). The Afghan country system will involve integration of the “early warning” advisories with the community

outreach (see E below), NGO and Afghanistan ministries to facilitate the delivery and use of the information. (T.I.A.1/2; T.IV.A.2; CC.III.B; CC.IX.B/C) .

The nutritional monitoring activity involves setting up the field structure to collect, deliver, analyze, and provide feedback to livestock producers using the in country NIRS laboratory facilities. It may also include the development of mobile technologies to take NIRS equipment to herders and local agencies to so that samples do not have to be sent into a central laboratory. The development of a mobile system will depend on road infrastructure and security. (T.I.A.2; CC.I.B.1/4; T.IV.A.1/2; CC.III.B.; CC.IX.B/C)

Output: An information and communication network for analysis and delivery system to provide herders and technical service providers with information on current and forecasted forage conditions that will assist them to make timely and specific management decisions in the PEACE project region of Afghanistan. This same network will be used to provide herders with information on nutritional status of livestock and potential least interventions to meet production goals.

E. Linking the GL-CRSP Technology to the Afghan Herder Cooperative Alliances

The primary technology would be based in the Center for Natural Resource Information Technology (CNRIT) at Texas A&M University using the technology transfer model that has been successful in East Africa and Mongolia. The project would concentrate on ICT approaches that would allow access to the technology via the web from Afghanistan. (T.I.B.2/3) In addition, it would allow relevant government organizations to focus on outreach and capacity building on the human side and regional communication (e.g., SMS cell phones, satellite radios using the AsiaStar or AfriStar satellite maintained by First Voice International). (T.IV.B.2/3/7/8/9/10; T.IX.A). Since the technology is fully automated at CNRIT, there are little reoccurring costs to maintain the site indefinitely. Institutions that wish to adopt the technology then can do so in the out years if desirable or strictly focus on outreach and information flow, which is much more cost effective. Linking this information to Afghan Herder Cooperative Alliances will allow group decision making to occur regarding drought early warning and livestock nutritional status, thus improving rangeland management.

Output: Linking the GL-CRSP technology to a series of herder associations (co-ops) will occur in the year 1 implementation area. This will be accomplished through the information dissemination network discussed in the previous section. Information can be passed to the nomadic herders by way of Government agencies, NGO's, and radio. The most efficient way to reach alliances may differ depending on the alliance. While we expect that many alliances can be given the information through their contact with NGO's and Veterinary Field units, each alliance may require an individual strategy to receive the information. These alliances will eventually be networked into an array of marketing alliances. These are seen as viable structures to improve livelihoods of pastoral livestock producers (ref. *kuchi*) and provide an infrastructure that will insure institutionalization of both the forage and nutritional monitoring technology in Afghanistan after the end of the Project. (T.I.A.1/2; T.IIA.3; CC.I.B.1/2/4)

F. Enhance Afghan Capacity

One formal training session would be conducted during the first year. Afghan project personnel, government institutions, and NGO's would be invited to participate. (CC.III.A.1; CC.VIII.D; T.I.A.1/2; T.II.A.3). A consultant will be hired to examine the land access conflict for the Kuchi of Afghanistan and provide a critical analysis of its causes and resolutions (T.III.A.1; CC.VIII.D; T.I.A.1/2; T.II.A.2). Access to grazing lands is considered a major issue facing the nomadic herders in Afghanistan. This training session is designed to highlight the importance of resolving these issues so that the extensive livestock sector can flourish.

Technicians will be trained during the implementation of feeding trials for sheep and goats. These feeding trials are used to calibrate the NIRS machine. Technicians will also be trained in field techniques used to collect vegetation information. The vegetation information is used to run the forage prediction model. Training would be conducted by the combined expertise of the Gobi Forage project, LEWS (Texas A&M University), and Global Livestock personnel. With an emphasis on in-country training in Afghanistan, training would be supplemented as necessary by regional and third-country training such as those available in Mongolia.

Within the Ministry of Agriculture, Ministry of Tribal Affairs, NGO's and Kabul University, presentations and discussions of the LEWS / NIRS systems will be given to develop a strong understanding the project's goal and objectives. Getting a buy-in for the project is important to develop the necessary user-base needed to promote the information produced.

Outputs: We expect that attendees of the formal Conflict Resolution Workshop will gain important insight as to why there is a need to resolve access issues for the Kuchi. With this knowledge we expect a stronger effort will be made to increase the extensive livestock sector through resolving the access issues.

The team of Afghan technicians, trained in the field, laboratory and computer skills needed to implement the NIRS and LEWS products, will be part of the long-term establishment of these systems. They will be able to collect field information in additional parts of the country, making forage predictions more robust. As technicians, they will have learned valuable skills that will increase their ability to earn a living with the Ministry of Agriculture or the private sector.

Developing the necessary user-base for the NIRS /LEWS technologies is an important step in institutionalizing these products. We expect that the better the Government and Non government organizations understand how these systems work the better chance we have of creating the demand for and use of the products they will ultimately produce themselves.

Year 2

A. Implement the Forage Monitoring Technology.

Additional areas will be selected for implementation of the second phase of the forage monitoring technology. These areas will likely be contiguous to the Phase I areas in order to optimize geo-statistical techniques. However, security and safety issues will drive the selection of the new areas. These activities will include the assimilation and/or creation of data to include a natural resource inventory (T.I.B.1) T.IV.B.2/3/4/5.), climate and weather (T.I.B.1.; T.V.F/G;), livestock inventory (CC.I.B.2/4; T.IV.B.2/3/4/5;), and vegetative communities (T.I.A.2; T.II.A.3; CC.I.B.1/4; T.IV.B.2/3/4/5; T.IV.A.3;.T.V.C/D/E) for the Phase II project areas in Afghanistan. (T.IV.A.2; CC.III.B.; CC.IX.B/C).

The Phase I data will have been entered into the livestock early warning system software so real time monitoring from Phase 1 data collection will begin. Maps and bulletins will be produced and the team will work with government officials and herders to refine and develop the early warning products.

Output: We will have developed a forage monitoring system that includes both the first and second year's project areas. This will provide near-real time spatial and temporal assessment of current and 90-day forecasted forage conditions for Afghan livestock producers. Livestock producers should be able to access this information through their respective alliance and, in turn, make better management decisions regarding their animals. The livestock producer should be able to assess the risk of moving to an area before actually seeing it.

B. Infusion of the NIRS Nutritional Management System.

During the second year the NIRS equipment will be purchased and shipped to Afghanistan and the laboratory will be set up and made operational.(T.IV.A.1; T.I.A.2; T.IV.B.1/2;T.V.I) We will also start the collaborative research experiment with a local university to conduct a lamb fattening study. (An in-country study indicated that lamb fattening was more profitable than poppies.) This study would focus the use of NIRS/NUTBAL for improving fattening operations and provide feed trial information on alternative rations for calibration of NIRS to Afghanistan native feed sources. (CC.VI.B)

Output: The NIRS laboratory will analyze the samples produced by the fattening experiment and develop forage NIRS libraries for Afghan feeds. By the end of the second year a nutritional monitoring system will be established for sheep, goats, cattle, and possibly horses. It will provide assessment of nutritional balance, change in body condition, and optimal fodder/ concentrate feed interventions for the various livestock production systems of Afghan producers. This information has major implications to livestock producers as well as farmers. With this information it is possible to develop a market for specific feeds needed for over-wintering livestock. The NIRS lab, by analyzing samples, will continue to provide a way for livestock producers to evaluate the condition of their livestock and make the necessary adjustments to maximize livestock body condition. In addition, from a rangeland

management perspective, knowing when to move your livestock off a given range can be determined through the analysis of livestock condition. As a result, it provides a way to maintain rangelands in a better condition.

C. Forage Monitoring Information Delivery and Outreach.

Forage maps and bulletins will be developed using the Phase I monitoring sites. Project personnel will work with herders and local and national governments to develop effective maps and reporting systems.

Output: an information and communication infrastructure and analysis delivery system to provide herders and technical service providers with information on current and forecasted forage conditions that will assist them to make timely and specific management decisions in the PEACE project region of Afghanistan.

D. Nutritional Monitoring Information Delivery and Outreach.

This activity involves setting up the field structure to collect, deliver, analyze, and provide feedback to livestock producers using the in country NIRS laboratory facilities. (T.1.A.1/2; CC.I.B.1/2/4; T.IV.A.1/2; CC.III.B.; CC.IX.B/C)

Output: Develop an information and communication infrastructure and analysis delivery system to provide herders with information on nutritional status of livestock and potential least interventions to meet production goals.

E. Linking the GL-CRSP Technology to the Afghan Herder Cooperative Alliances

Efforts will continue to work with herders to develop herder cooperative alliances. Examples of cooperatives in the US and Mongolia will be used to help the herders organize into effective working groups. A demonstration of the Livestock early warning technology and NIRS nutritional management technology will be given to the groups. The use of this technology for management decisions regarding livestock and proper use of rangeland will also be demonstrated. Manuals will be made to help NGO's, Government agencies and the alliances use the technology. World Space radios with download capabilities will be given to key organizations in the communication network so that they can download the maps and bulletins for use in management.

Output: Linking the GL-CRSP technology to a series of herder associations (co-ops). These networked into an array of marketing alliances, are seen as viable structures to improve livelihoods of pastoral livestock producers (ref. *kuchi*) and provide an infrastructure that will insure institutionalization of both the forage and nutritional monitoring technology in Afghanistan after the end of the Project. (T.I.A.1/2; T.II.A.3; CC.I.B.1/2/4)

F. Establish Afghan Capacity to support LEWS.

Three formal training sessions are scheduled for the second year. They are like those conducted in year one and would be conducted in the form of Workshops. They will provide training for the LEWS, LINKS and Risk Management. The first two workshops are intended to target Government and Non-government organizations that

need a clear understanding of the technologies in order to provide this information to Kuchi herder alliances. The third workshop is to target the leaders of the Kuchi Alliances to provide them ways that they can use the information provided by the LEWS and NIRS systems.

Training of technicians will continue in field data collection and laboratory techniques started in the first year. (CC.III.A.1; CC.VIII.A/B/C; T.I.A.1/2; T.II.A.3)

Output: Attendees of the LEWS and LINKS workshops will leave with a comprehensive understanding of how predicting forage condition can ultimately influence production and the marketing of livestock. These workshops provide a way to produce the future clients for and disseminators of this information.

Attendees of the Risk Management workshop will acquire a set of tools to better reduce the risk of raising livestock. Once equipped with this knowledge we expect that herder alliances will modify some of their herding behaviors, leading to more productive herds and less animal and weight loss due to poor forage condition. Also we expect that herders will make better use of stop-loss measures that will allow them to recover their herds even after a series of poor forage years.

The training that technicians receive will prepare them to be the future crew leaders for range and livestock projects.

G. Assist the Ministry of Agriculture (MoA) with institutional capacity building

Investigate the capacity that the MOA has with respect to information technology. When we consider institutionalizing the LEWS /NIRS technology we must determine the ability of the MOA to collect and distribute the information. We expect that NGO's and University staff will readily possess the ability to retrieve the information needed for the forage forecasting. The MOA will most likely need extra help. (T.I.A.1/2; T.II.A.2/3)

Output: An assessment report followed by a solution strategy will be developed for making sure that this issue is addressed. This could have a direct impact on the long-term sustainability of the project after our departure in year 4.

H. Training for Risk Management, LEWS, and NIRS.

In year 2 training would be conducted in the form of 3 formal training sessions on risk management with follow-up and implementation of LEWS and LINKS procedures in country. (T.I.A.1/2; T.II.A.2/3; T.III.A.1; CC.II.A.2/3/4; CC.VIII.A/C/D)

Output: (1) a core group of trained Afghans capable of facilitating constructive dialogue involving all stakeholders, (2) an established process for engaging stakeholders, community leaders, and relevant government decision makers impacting land tenure practices, conflict resolution, and risk management. (T.III.A.1; CC.VIII; T.I.A.1/2; T.II.A.2/3)

I. Conduct Economic Assessment of Kuchi Livestock

A consultant will be hired to conduct an economist analysis of nomadic herders impact on the economy given the new forage –quantity, and -quality information available. In the first year that the livestock economist collects information, an initial-condition assessment will be made. Current values will be reported as a baseline for the project. (T.II.A.1)

Output: Production of a detailed assessment of the contribution that kuchi-herder livestock make to the Afghanistan economy and projected impact of the project on local, regional and national economies. This assessment is important for several reasons, not least of which is an estimate of Kuchi livestock production. In addition, this estimate will provide the measurement by which the impact, of the PEACE project on Kuchi livestock production, can be determined. Finally, we expect this estimate of Kuchi production to be substantial in proportion to Afghanistan’s total production. The production estimate can then be used to leverage the government to create policies that are more favorable to Kuchi herders.

Year 3

A. Infusion of Forage Monitoring Technology.

Resource and plant inventory for a third phase would be implemented. This again would include resource inventory (T.I.B.1) T.IV.B.2/3/4/5.), climate and weather (T.I.B.1.; T.V.F/G;), livestock inventory (T.II.A.1; CC.I.B.2/4; T.IV.B.2/3/4/5;), and vegetative communities (T.I.A.2; T.II.A.3; CC.I.B.1/4; T.IV.B.2/3/4/5; T.V.C/D;) for the third project area of Afghanistan. (T.IV.A.2/3; CC.III.B.; CC.IX.B/C)

Near real time monitoring would continue for the Phase I areas and the Phase 2 areas would be added to the analysis. Near real-time maps and bulletins would be produced.

Output: A third area for near-real time spatial and temporal assessment of current and 90-day forecasted forage conditions would be implemented following the protocol established in year 1 and year 2.

B. Start of the LINKS Market information monitoring system

The LINKS marketing technology involves locating an appropriate institution and Cooperators that understand local markets and will participate in establishing weekly reporting of livestock movement and sales. Like the LINKS system in East Africa, a central computing system will be located in Afghanistan and it will be mirrored at Texas A&M and be fully automated there as well. (CC.VI.A; CC.IX.A/B/C) This allows institutions to focus on market reporting rather than on the technology itself.

Output: Current market conditions in the study areas are reported through SMS, fax, email, and phone to provide local livestock communities with information on animal numbers and prices of various kinds of livestock.

C. Linking the GL-CRSP Technology to the Afghan Herder Cooperative Alliances

Continue the process of linking Herder Alliances into the LEWS, NIRS, and LINKS technology. (T.I.B.2/3)

The forage condition forecasting, nutritional quality and market information will continue to provide services to herder alliances. Training of Afghan personnel will ensure that the project's outcomes are sustainable. The NIRS lab will be placed in a network of labs that cooperate around the world and will share problem solving and apply new concepts. (T.IV.A.1;T.IV.B.1/2;T.V.I; CC.VIII.C)

Output: More members and new areas will be linked into the herder associations (co-ops). The continued strengthening of these networked, marketing alliances, is seen as a viable structure to improve livelihoods of pastoral livestock producers. Strong alliances and infrastructure will insure institutionalization of both the forage and nutritional monitoring technology in Afghanistan after the end of the Project. (T.I.A.1/2; T.II.A.3; CC.I.B.1/2/4)

D. Conflict Resolution, LEWS, LINKS and NIRS.

In the third year additional training sessions would be conducted in the form of 4 formal training sessions (1 each on conflict resolution, LINKS, LEWS and NIRS). (T.III.A.1; CC.VIII.A/B/C/D; T.I.A.1/2; T.II.A.3)

Outputs: (1) a core group of trained Afghans capable of facilitating constructive dialogue involving all stakeholders, (2) an established process for engaging stakeholders, community leaders, and relevant government decision makers impacting land tenure practices, conflict resolution, and risk management. (T.III.A.1; CC.VIII; T.I.A.1/2; T.II.A.2/3)

Year 4

A. Institutionalization of the Forage Monitoring Technology.

Institutionalization of the technology is a process that we will complete by the end of the fourth year. We expect that by the end of year three we will have identified the agency(s), procedures, and support structure to continue the services of this product after the end of the project. During the fourth and final year of the project much of the LEWS process will have been automated and information will be easily downloaded by any interested parties.

Output: A forage monitoring system would be established and continue after the life of this project. It will provide near-real time spatial and temporal assessment of current and 90-day forecasted forage conditions for Afghan livestock producers.

B. Institutionalization of the NIRS/NUTBAL Nutritional Management System.

This includes the passing of the NIRS Laboratory to in-country agencies to maintain services provided by the laboratory. A reasonable fee structure should assist in the maintenance cost of the laboratory. (T.IV.A.3; T.I.A.2; T.IV.B.1/2;T.V.I)

Output: A national NIRS laboratory for nutritional monitoring system for sheep, goats, cattle, and horses that provides assessment of nutritional balance, changes in body conditions, and optimal fodder/ concentrate feed interventions for various livestock production systems of Afghan producers.

C. Information Delivery and Outreach.

During the forth year the network by which LEW, LINKS, and NIRS information reaches Kuchi herders will be well established. (T.I.A.2; T.II.A.3; CC.I.B.1/4; T.IV.A.1/2; CC.III.B.; CC.IX.B/C)

Output: An institutionalized information and communication infrastructure and analysis delivery system that provides herders with information on forage condition and nutritional status of livestock. Market information will also travel on the same information structure. This structure includes government and non-government organizations, radio, newsletters, etc.

D. The Adoption of GL-CRSP Technology in Afghan Herder Cooperative Alliances

Output: The acceptance of the GL-CRSP technology by series of herder associations (co-ops) that insures the institutionalization of both the forage and nutritional monitoring technology in Afghanistan after the end of the Project. (T.I.A.1/2; T.II.A.3; CC.I.B.1/2/4). The full implementation of LINKS marketing technology (CC.VI.A; CC.IX.A/B/C)

E. Conflict Resolution, Land Tenure Policy, and Risk Management.

In the last year additional training sessions would be conducted in the form of 2 formal training sessions (1 on conflict resolution and 1 on risk management) with follow-up and implementation of LINKS and risk management procedures in country. (T.III.A.1; CC.VIII.D/E; T.I.A.1/2; T.II.A.2/3)

Output: 1) a core group of trained Afghans capable of facilitating constructive dialogue involving all stakeholders, (2) an established process for engaging stakeholders, community leaders, and relevant government decision makers impacting land tenure practices, conflict resolution, and risk management.

Partner Involvement:

The PEACE project is part of a large initiative of USAID in Afghanistan. Policy makers of each of the critical institutions in the ministry, key universities, international organizations, NGO's and other donor organizations such as the World Bank Organization will be involved in the final planning process of the PEACE project. The GL-CRSP will work with other on-going USAID initiatives to promote rangeland resource management and livestock development, specifically RAMP and the follow-on to RAMP, the new Animal Health activity of the PASA with USDA, and the Biodiversity Conservation Project with Wildlife Conservation Society to create linkages across target communities and further support the integration of services and interventions.

Additionally, the following donor activities could be integrated with the proposed Pastoral Engagement, Adaptation and Capacity Enhancement (PEACE) Project:

- Capacity building for the Ministry of Agriculture, Animal Husbandry and Food (MAAHF) - key donors are USAID, Asia Development Bank (ADB), the Department For International Development (DFID), the European Union, and the United Nations Food and Agriculture Organization (FAO).
- UNDP - Capacity Building of the Government Department of Disaster Preparedness - funding from Afghan Emergency Trust Fund (AETF) and the Asian Development Bank.
- Afghanistan Information Management Services (AIMS) - UNDP collaboration with Department of Disaster Preparedness and ICIMOD.
- GIEWS-FAO - partnership with Ministry of Agriculture to gather crop and livestock statistics and focus on crops, grain harvest, grain forecasts and identify vulnerability.
- FEWS NET-USAID - partnership provides food security assessments, weather information, satellite-based vegetation greenness monitoring assessments and food security information.

Radio Denash-First Voice International - a national agriculture program focused on farming and conservation practices.

Department for Disaster Preparedness (DDP) and the Ministry of Rural Rehabilitation and Development (MRRD) - provides information from provinces on floods, earthquakes, landslides, avalanches, sand movements, storms, locust, epidemics, extreme temperatures (+/-), etc.

- Healing Wounds - CGIAR and Future Harvest Consortium to Rebuild Agriculture Research in Afghanistan (FHCRAA).
- Mercy Corps - primary focus is on agricultural and economic development since 1986 with a well established infrastructure and commitment to Afghanistan. Current emphasis is on seed supply, animal health, livestock markets, microfinance, restoration of agriculture and rural economies, and rural recovery.
- Dutch Committee for Afghanistan (DCA) - primary focus is on veterinary work and training para-vets (e.g., animal health).
- Human Health Services - these agencies have extensive networks and can serve as critical information nodes in early warning systems networks.
 - Red Cross
 - InWent – German Government
 - Health Management Information System

Publications Planned

Publications will be produced throughout the life of the project. Year One publications will primarily be consultants' reports, meeting and workshop proceedings and policy analysis. Subsequent years will yield proceedings, lessons learned assessments and a variety of manuals and handbooks used for outreach and laboratory training.

Budget: See Accompanying Budget