INTRODUCTION

The United States Agency for International Development, through the CRSP Guidelines, mandates a periodic review of each Collaborative Research Support Program (CRSP) by an expert team external to the CRSP. The present document is the report of the External Evaluation Panel (EEP) for the new Global Livestock CRSP (GL-CRSP), a CRSP with roots in the former Small Ruminant CRSP (SR-CRSP). The members of the panel include Dr. Nancy Lou Conklin-Brittain, Harvard University; Dr. Susan J. Thompson, Dartmouth College; and Dr. David J. Sammons, Purdue University, who serves as the Chair of the EEP.

The External Evaluation Panel last met in June 1997 at Tufts University near Boston during the reengineering of the Small Ruminant CRSP, a process which culminated in the formation of the GL-CRSP. The findings of that panel are contained in the 1996-1997 Report issued in the early fall of 1997. The 1997 review made particular note of the unique and comprehensive planning process by which the SR-CRSP was "re-inventing" itself as a Global Livestock CRSP. That process included 11 competitively-funded year-long studies that supported teams of researchers (Assessment Teams) to prepare formal proposals following on-site review of research needs with local stakeholders in East Africa, Central Asia, and Latin America. An Advisory Panel (now known as the Program Administrative Council) completed the reengineering with the selection of seven of the proposals for full funding. These seven projects together comprise the present Global Livestock CRSP, the subject of this review. A clearly meritorious result of the reengineering process was the rapid implementation of the funded research activities around the world.

Each of the seven selected projects addresses the GL-CRSP theme: agriculture at risk in a changing environment. This global theme has four focal areas as follows: 1) to contribute to economic growth and household food security in animal-based agricultural systems; 2) to achieve economic growth and food security while maintaining and enhancing the environment, biodiversity, and natural resources; 3) to address problems of human nutrition, child survival, and development (cognitive and physical) as they relate in particular to micronutrient contributions of animal source foods; 4) to engage with policy and decision makers relative to opportunities for animal agriculture to contribute to human well-being. Each project incorporates one or more of these focal areas in the planned activities.

The following seven projects constitute the GL-CRSP:

- **Livestock-Natural Resource Interfaces at the Internal Frontier in Latin America (PLAN).** *Lead U.S. Principal Investigator:* Dr. Timothy Moermond, University of Wisconsin-Madison.

- **Improving Pastoral Risk Management on East African Rangelands (PRMP).** *Lead U.S. Principal Investigator:* Dr. D. Layne Coppock, Utah State University.

- **Integrated Modeling and Assessment for Balancing Food Security, Conservation and Ecosystem Integrity in East Africa (IMAS).** *Lead U.S. Principal Investigator:* Dr. Michael B. Coughenour, Colorado State University.

- **Early Warning System for Monitoring Livestock Nutrition and Health for Food Security of Humans in East Africa (LEWS).** *Lead U.S. Principal Investigator:* Dr. Paul Dyke, Texas A&M University System.

- **Role of Animal Source Foods to Improve Diet Quality and Growth and Cognitive Development in East African Children (CNP).** *Lead U.S. Principal Investigator:* Dr. Charlotte G. Neumann, University of California, Los Angeles.

- **Livestock Development and Rangeland Conservation Tools for Central Asia (LDRCT).** *Lead U.S. Principal Investigator:* Dr. Emilio A. Laca, University of California, Davis.

- **Impacts of Economic Reform on the Livestock Sector of Central Asia (LSER).** *Lead U.S. Principal Investigator:* Dr. Kenneth Shapiro, University of Wisconsin-Madison.

The 1998 EEP review, which is presented here, is based on a paper review of a substantial quantity of materials provided by the Management Entity (ME) at the University of California, Davis, pertinent to the above projects. The paper review was followed by participation of the EEP in the 1998 Year-End GL-CRSP Conference that met at Tarangire National Park near Arusha, Tanzania. Prior to the meeting in Tanzania, the EEP had the opportunity to meet with key cooperating research scientists at the International Livestock Research Institute (ILRI) in Nairobi, Kenya, and to visit two GL-CRSP project sites: the Embu, Kenya site where a nutrition intervention study is being led by Dr. Charlotte G. Neumann and Professor Nimrod O. Bwibo (University of Nairobi); and a new research site near Kajiado, Kenya that will be part of the Integrated Modeling and Assessment System project led by Dr. Michael Coughenour.

In addition to the meetings and site visits noted above, the EEP had the opportunity during the 1998 Year-End Conference to meet with an array of key staff from USAID/Global Bureau/

EGAD/AFS/Washington (Joyce Turk, Tracy Atwood), USAID/ENV/ENR (Jeff Musser), USAID/Greater Horn of Africa Initiative (Kimberley Lucas) and USAID missions in East Africa (Dennis B. McCarthy and Patricia Ogwang, Nairobi, REDSO/ESA; Margaret Brown, USAID/Ethiopia; Dennis Weller, USAID/Kenya; and Joel Strauss, USAID/ Tanzania). The EEP also met with Montague Demment and Jim Scott from the GL-CRSP ME and the Program Administrative Council (PAC) chaired by Ed Price during the Year-End Conference. Finally, and, importantly, the EEP scheduled extended meetings with U.S. and regional Principal Investigators (PIs) in attendance from each of the three global regions: East Africa, Central Asia, and Latin America.

The EEP extends its grateful thanks and appreciation to Susan Johnson (ME staff) who provided essential administrative and logistical support for the EEP effort both prior to departure for Africa and following our return to the United States. The EEP is also appreciative of the guidance and direction provided by Joyce Turk (USAID) and Dr. Montague Demment (GL-CRSP Program Director) through the course of the review. In addition, the EEP extends its appreciation to Jim Scott and Letty Garcia of the ME for their assistance through the review process. Finally, the EEP expresses its gratitude to the cadre of participants at the Year-End Conference in Tanzania for their time and numerous contributions to the information gathering process that has culminated in this report.

This report is submitted in hopes that the recommendations presented will contribute to the momentum that has been generated in the first year start-up phase of the GL-CRSP. We are convinced that the merits of this CRSP are in large part due to the creativity, energy, and enthusiasm of the participants in the reengineering process that has resulted in the present structure. Our recommendations are offered in the spirit of making this CRSP even stronger than it is at present.

PROGRAM OPERATIONS

Regionalization/Globalization

Within program operations the External Evaluation Panel (EEP) examined the work of the Management Entity (ME) in the conceptualization and operationalization of the regional and global components of the Global Livestock CRSP (GL-CRSP). The EEP recognizes that the regional and global components are in their early stages. Our evaluation here should be taken as an assessment of its initial organization and of potential problems that the EEP has identified.

The EEP is impressed with the scope of globalization and regionalization activities in the past year, particularly under the budget cuts of last year and this year. The regionalization/ globalization activities reported by the ME and Principal Investigators (PIs) at the 1998 Year-End Conference in Tarangire National Park were the essential first-step in implementing these activities within regions. The EEP notes that as currently constituted, the GL-CRSP has begun regional activities in only one region, East Africa. The initial coordinating efforts of the four projects in this region [the pastoral risk management project (PRMP), the livestock early warning system (LEWS) project, the child nutrition project (CNP), and the integrated modeling and assessment system (IMAS) project] undertaken at the Tarangire Conference should be followed closely as a model for regionalization in other areas of the world where the GL-CRSP is active.

The two Central Asian projects, the livestock development and rangeland conservation tools (LDRCT) project and the livestock sector economic reform (LSER) project, have the potential to form the beginning of a regional program integrating the GIS modeling, sheep-breeding, rangeland management, nutrition and farm production components. The EEP is concerned, however, with the lack of coordination between the two projects' PIs.

The Latin American region is represented by a single project, the livestock-natural resources interface (PLAN) project. Yet this project's design, centered on community-based resource management at the watershed level in three different countries provides the foundation for what could be a successful regional effort and the project should be followed closely. Given the budget constraints under which the GL-CRSP currently operates, a regionalization model needs to be developed that is circumscribed in scope but expansive in regional integration activities. The livestock-natural resources interface (PLAN) project

does just that. If the GL-CRSP is truly to be a global CRSP with strong regional components, however, USAID must commit itself fiscally to this CRSP.

Technically, the regional design of the GL-CRSP has the potential of providing both breadth and depth to individual projects. Regionalization permits the pooling of scarce human and financial resources, avoids duplication of research activities, enhances institutional development through exposure of host-country participants to activities in the region, and provides links for host-country scientists within the region and globally. Managerially, the regional design provides a mechanism for research coordination that enhances the technical component of individual projects. The EEP sees the advantages both technically and managerially for the regionalization of the GL-CRSP. We are concerned, however, about the willingness of the individual project PIs to regionalize. Without a strong investment in regionalization within the individual projects, this activity is most likely to be no more than a discussion at the annual conference rather than an active component of each project. This is because regionalization activities take additional time. And, time is a scarce commodity. This said, support of the Pastoral Systems Initiative by the East Africa PIs is a step toward assuring the success of regionalization in East Africa. The Pastoral Systems Initiative, proposed by ILRI, integrates independent but closely related pastoral research and development projects currently under way in the Greater Horn of Africa. The four GL-CRSP projects as well as the other pastoral projects in the region would benefit from this type of coordination. In addition, the number of GL-CRSP projects in the region enhances the potential success of the GL-CRSP regionalization effort.

It was apparent at the Tarangire Conference that there had been little coordination or communication within either the Central Asian or East African projects prior to the annual meeting. The Tarangire Conference provided the opportunity for each region's PIs and collaborators to formulate regional workplans. From the regionalization and globalization presentations made at the end of the conference it is clear that regional research strategies have been formulated and an action plan composed for the East African and Latin American regions. It is not clear to the EEP how these regional plans are to be implemented without additional funds from USAID or other funding sources. The Central Asian projects agreed on common themes, but do not appear to have formulated a regional action plan.

One of the strengths of the regionalization/ globalization activities of the GL-CRSP is its inclusion of regional institutions in the setting of research priorities prior to the initial request for assessment team proposals from the SR-CRSP. The ME organized regional workshops in 1996 in collaboration with ASARECA in Entebbe, Uganda, in collaboration with ICARDA and the Uzbek Academy of Science in Tashkent, Uzbekistan, and in collaboration with IICA in San Jose, Costa Rica. These workshops provided the priority problem models which served as the basis for the request for full proposals that were subsequently developed during the AT process.

The regional workshops also helped set the criteria for assessing the proposals for funding. Consequently, many of the projects tie directly into the research framework of regional institutions.

PROJECT WORKSHOPS

The EEP has been asked to evaluate the value of project workshops and notes from the start that the value of a workshop is directly tied to the purpose of the workshop. Many of the project workshops held in 1998 had a short-term training component. The livestock-natural resources interface (PLAN) project's Bolivian partner, CIEC, held an outreach workshop to devise an educational strategy for the Bolivia site. Participants included the three Bolivian partner organizations and delegates from communities in the project area. The livestock development and rangeland conservation (LDRCT) project held five short-term training workshops in Kazakhstan. Workshop topics included participatory rural survey methods, human nutrition surveys, farmer-to-farmer communication, range condition assessment and an introduction to global positioning systems. Participants included staff from various Kazakhstan research institutes, UC Davis and ICARDA. The pastoral risk management project (PRMP) held three workshops, a preliminary research planning workshop on risk mapping and associated field topics, a first project planning workshop attended by the project's U.S. collaborators and Egerton University, and an outreach workshop for Ethiopia attended by host-country (HC) grass roots organizations and project personnel.

The livestock early warning system (LEWS) project held four workshops during the year. One of the workshops not only provided short-term training on the design and implementation of early warning and crisis mitigation for livestock in East Africa, but also provided a networking and institutional development opportunity for the twenty-five scientists from the five East African countries attending the workshop. The three other workshops provided short-term training and networking opportunities for host-country team members and government and non-government personnel.

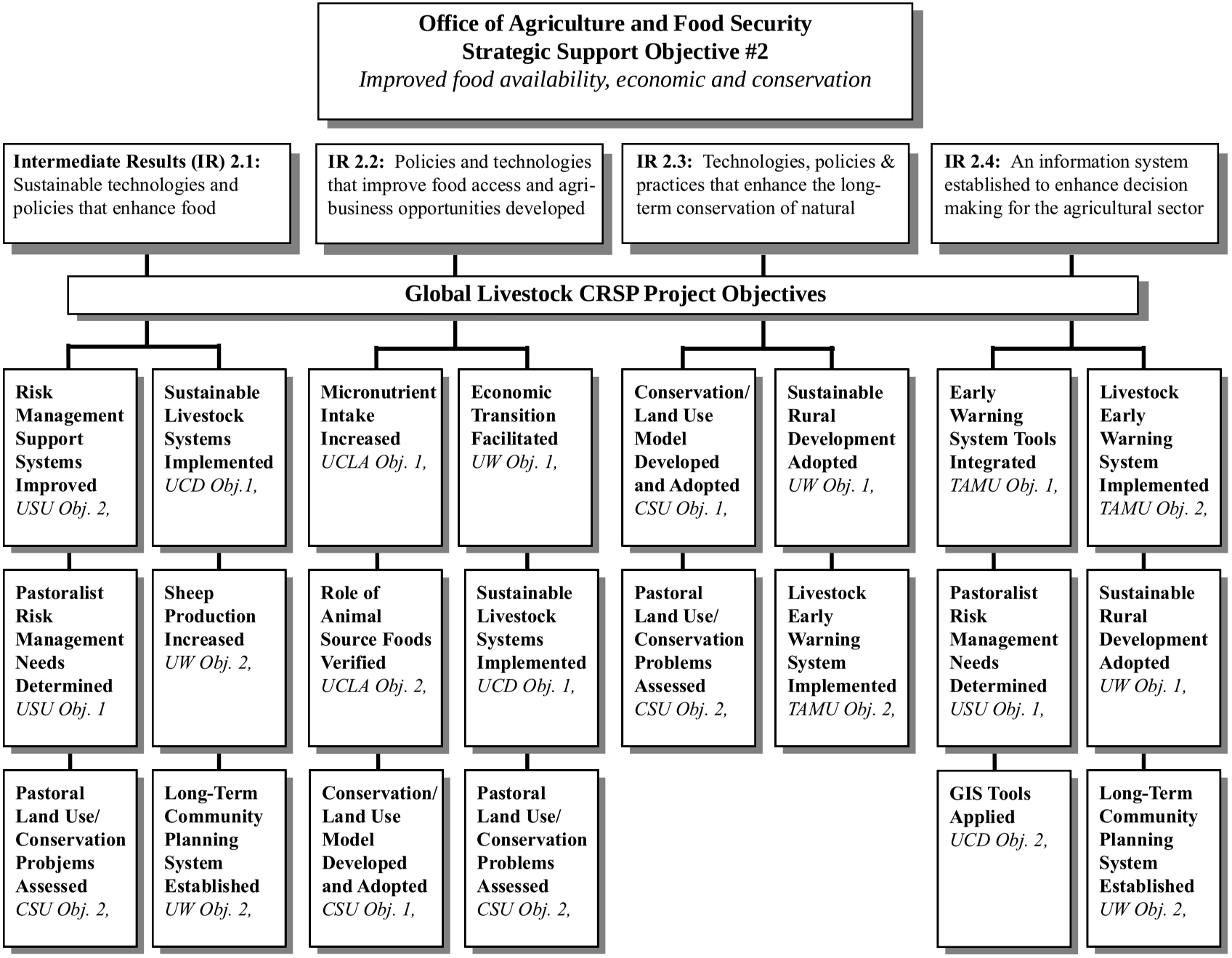
Workshops are an effective means of using scarce funds to train project workers and develop human capacity. Training workshops also provide an institutional development mechanism when a workshop brings together personnel from all the host-countries participating in the project. Another value of workshops is the ability to empower end-users. Outreach workshops give status to the participant end-users. These workshops also enable end-user participation in the ongoing project and are an excellent means of ensuring sustainability. The EEP also notes that project workshops have the potential for being an important component of regionalization. Workshops can provide the opportunity for project PIs and host-country collaborators to keep abreast of the activities of other projects in the region, to link to other scientists and development personnel working on similar issues, and to contribute to the reduction of research duplication. It is unclear from the materials provided the EEP if there was much

cross-participation by the various project personnel in other projects' workshops to date.

GL-CRSP AND USAID'S STRATEGIC OBJECTIVES

The ME and PIs have done a remarkable job of integrating their research activities with USAID-Washington, Office of Agriculture and Food Security's Strategic Objective #2, "Improved food availability, economic growth and conservation of natural resources through agricultural development." From the start, PIs were advised to formulate their research activities with the strategic objectives in mind. Each project, in turn, can be matched with the intermediate results of the Office of Agriculture and Food Security. The ME has demonstrated the integration of the research activities with the strategic objective in the attached diagram (figure on page 9).

The EEP notes that the PIs and ME have both had difficulties in obtaining the Mission strategic objectives (SOs) in order to integrate them with the GL-CRSP activities. However, at the Tarangire Conference, three of the East African Mission Offices and REDSO reported on their strategic objectives and noted the integration of East African projects' research activities with these SOs. There is potential integration; e.g., the Tanzanian Mission's SO to establish a foundation for environmentally sustainable natural resource management in Tanzania and with the Ethiopian Mission's emerging SO on enhanced food security in drought prone regions which includes a livestock component. Because of the difficulty of obtaining Mission SOs, none of the GL-CRSP projects have planned their research activities in direct relation to Mission priorities. The EEP recommends that PIs make a greater effort to align their project activities with Mission SOs in order to attract potential buy-ins.


Office of Agriculture and Food Security
Strategic Support Objective #2
Improved food availability, economic and conservation
Intermediate Results (IR) 2.1: Sustainable technologies and policies that enhance food
IR 2.2: Policies and technologies that improve food access and agri-business opportunities developed
IR 2.3: Technologies, policies & practices that enhance the long-term conservation of natural
IR 2.4: An information system established to enhance decision making for the agricultural sector
Global Livestock CRSP Project Objectives
Risk Management Support Systems Improved USU Obj. 2,
Sustainable Livestock Systems Implemented UCD Obj.1,
Micronutrient Intake Increased UCLA Obj. 1,
Economic Transition Facilitated UW Obj. 1,
Conservation/ Land Use Model Developed and Adopted CSU Obj. 1,
Sustainable Rural Development Adopted UW Obj. 1,
Early Warning System Tools Integrated TAMU Obj. 1,
Livestock Early Warning System Implemented TAMU Obj. 2,
Pastoralist Risk Management Needs Determined USU Obj. 1
Sheep Production Increased UW Obj. 2,
Role of Animal Source Foods Verified UCLA Obj. 2,
Sustainable Livestock Systems Implemented UCD Obj. 1,
Pastoral Land Use/ Conservation Problems Assessed CSU Obj. 2,
Livestock Early Warning System Implemented TAMU Obj. 2,
Pastoralist Risk Management Needs Determined USU Obj. 1,
Sustainable Rural Development Adopted UW Obj. 1,
Pastoral Land Use/ Conservation Probjems Assessed CSU Obj. 2,
Long-Term Community Planning System Established UW Obj. 2,
Conservation/ Land Use Model Developed and Adopted CSU Obj. 1,
Pastoral Land Use/ Conservation Problems Assessed CSU Obj. 2,
GIS Tools Applied UCD Obj. 2,
Long-Term Community Planning System Established UW Obj. 2,

MANAGEMENT OF RESEARCH PROGRAM

Technical Committee

The Technical Committee has changed with the restructuring of the GL-CRSP. Rather than having a project evaluation/critique responsibility, the technical committee now serves to give the investigators from the different projects the opportunity to get together and talk about the complementarity of their projects and research methods as part of the total GL-CRSP program. The Technical Committee (TC) also contributes to overall program evaluation. The necessary evaluation of project quality has been shifted to the PAC and the EEP collectively, as well as outside specialists when necessary.

Retaining the Technical Committee in its new capacity is important because the overall goal of the GL-CRSP is to have global applicability. The TC also has the important function of ensuring that all of the researchers communicate regularly with each other and that they organize their collective activities with a global goal, regardless of the regional aspect of their current research project. This new format should assist in regionalizing and globalizing the research and extending results found from each individual project. The opportunity for the Technical Committee to meet during the annual conference is, therefore, very useful. To further regional and global goals it is essential that host-country co-leaders play an active role in TC deliberations. This would also contribute to project sustainability goals.

Effectiveness of Workplans

The workplans, along with the Annual Reports, are an effective way for evaluators to first acquaint themselves with the details of the individual projects and formulate questions for the researchers at the conference and second to use when writing up this report. It is impossible to remember the details of each project and we would be lost without them. From the researchers' point of view, workplans are always useful when managing a long-term, multi-faceted project with numerous people involved.

The standardized formats that all of the reports are supposed to follow is very useful in making the reports easy to read. However, there is room for some streamlining of the reporting process. Some of the authors/PIs, within a given workplan, refer the reader to previous sections if they feel the topic has been discussed enough already, which is a good idea

and should be encouraged. It would also be easier for both author and reader if there were a section in table form with the left-hand column titled "goals" and the right hand column "comments". Possible comments would be either "done", "in progress", or "removed/ changed because…". This would help authors and readers to see clearly how the projects are progressing each year.

Some of the authors/PIs listed which activities were specifically the duties of which collaborator. They did this mostly for the U.S. researchers. It would be useful if everyone were so clear-cut in their assignments of responsibility and especially if everyone included the specific duties of all the host-country collaborators.

Workplan and Budget Modifications

The SR-CRSP did not receive enough money from USAID for the proposed projects to be funded at the levels originally proposed by the principal investigators. Specifically, the 1997/ 98 budget given to SR-CRSP by USAID was $2.9 million with $2.1 million apportioned among seven new projects. The original intent was to fund five to six projects at $300,000 - $350,000 each. However, the PAC decided to fund a seventh project at $100,000 in order to strengthen the GL-CRSP's global scope. This project in Latin America was funded on the promise from USAID that additional funds would be forthcoming to fully fund this project in the following year.

Unfortunately, the 1998/99 budget for these same new programs was further reduced to a total of $2.5 million of which $1.9 million was allocated to the projects. The programs were notified of this disappointing news and the six programs that received larger budgets in 1997/ 98 were further reduced in 1998/99. Consequently, these programs have had to further scale back the activities they had originally proposed and the Latin America project continues at its low level of funding.

Considering each project by region relative to workplan and budget modifications:

Central Asia

- *Livestock Development and Rangeland Conservation Tools for Central Asia (LDRCT). Lead U.S. Principal Investigator: Dr. Emilio A. Laca, University of California, Davis.*

In spite of a decreased budget, the project is pushing ahead with the expansion of GIS and CO_2 measurements not only to Kazakhstan but also to Turkmenistan and Uzbekistan. Rural surveys of human welfare (resources and nutrition) were not in the original proposal but were added in the first year's workplans. Unfortunately, because of a tight budget, they were not able to use a more detailed nutrition survey technique and have obtained some confounding results (see discussion on research results). Also added were training of a group of host-country collaborators including BS/MS students, two GIS technicians, and additional rural survey takers, and an additional two U.S. graduate students. On the other hand, the experiments planned for animal production and

alternative technologies were reduced to a minimum. All other goals and activities are essentially the same.

- *Impacts of Economic Reform on the Livestock Sector of Central Asia (LSER). Lead U.S. Principal Investigator: Dr. Kenneth Shapiro, University of Wisconsin-Madison.*

Originally the researchers planned to survey five countries with their core questionnaire survey. One round of the survey has been conducted so far, in three countries - Kazakhstan, Kyrgyzstan and Uzbekistan. It appears that this project may not conduct the surveys in Tajikistan and Turkmenistan, and that Uzbekistan is not fully integrated into project yet. It is not clear whether these modifications are due to budget constraints or political problems. The sheep-breeding project in Kazakhstan was started and fairly high lamb mortality in local operations was observed. In the future they will be instituting basic ewe nutrition and lamb health practices as recommended by a U.S. veterinarian who was brought in as a consultant. Certain range management and summer ewe and lamb nutrition practices were also formulated by two of the U.S. collaborators. There were some modifications to the original research plan and the current workplans closely follow that revised proposal. A new addition will be a Russian-speaking political science graduate student who will be doing his Ph.D. on national laws on privatization and the administration of the privatization process, but will have independent funding.

EAST AFRICA

- *Improving Pastoral Risk Management on East African Rangelands (PRMP). Lead U.S. Principal Investigator: Dr. D. Layne Coppock, Utah State University.*

This project shows a high degree of fidelity to the original proposal. It has been scaled back a small amount due to budget constraints (for example there is only one postdoc instead of two). However, the role of policy was advanced into the first year, and more Ph.D. students are planned as well as more technical reports. The research so far validates the original project orientation. Nevertheless, the EEP supports the PI's plan to enlarge the ecology and natural resources dimension since famine relief stations often cause environmental degradation in the surrounding area.

- *Integrated Modeling and Assessment for Balancing Food Security, Conservation and Ecosystem Integrity in East Africa (IMAS). Lead U.S. Principal Investigator: Dr. Michael B. Coughenour, Colorado State University.*

In spite of cutbacks, there have been no significant deviations from the original work plan. The project leaders do have some new initiatives with Kenya Wildlife Service and hope to apply IMAS (Integrated Modeling and Assessment System) to other parks and reserves in Kenya.

- *Early Warning System for Monitoring Livestock Nutrition and Health for Food Security of Humans in East Africa (LEWS). Lead U.S. Principal Investigator: Dr. Paul Dyke, Texas A&M University System.*

In spite of cutbacks, the first NIRS (near-infrared spectroscopy) lab in Debre Zeit Ethiopia was set up and NIRS labs will go into Uganda and Kenya this fiscal year. This project is extremely labor intensive but nevertheless seems to be getting the job done. A new addition to the project during the next year will be a pastoral coping mechanism survey.

- *Role of Animal Source Foods to Improve Diet Quality and Growth and Cognitive Development in East African Children (CNP). Lead U.S. Principal Investigator: Dr. Charlotte G. Neumann, University of California, Los Angeles.*

This is another extremely labor intensive project, and heavily dependent on the good will of the community where the experiments are being performed. This is one project that really needs increased funding, in part because the health of the children participating in the feeding trials has turned out to be worse than expected in terms of parasite load and malaria. In a situation like this the investigators are obliged to provide treatment and the project is already stretched financially. Given the importance of this project and its results to justifying continued animal source food research in general, emphasis should be put on keeping this project functioning optimally. New initiatives being explored by this project are: women organized into credit groups and giving women rabbits to breed for household consumption and income generation.

LATIN AMERICA

- *Livestock-Natural Resource Interfaces at the Internal Frontier in Latin America (PLAN). Lead U.S. Principal Investigator: Dr. Timothy Moermond, University of Wisconsin-Madison.*

This project received only one third the amount given to the other projects. However, in their reports they have stayed with the original numbering system of their objectives so it is easy to follow what they are getting done. Since the first year they have been able to add back four more sub-objectives from their original list. They remain committed to the original project.

RESEARCH PROGRAM

In view of the fact that these projects have only been operating one year, only preliminary results have been reported. The EEP offers these observations relative to the research program.

CENTRAL ASIA

- *Livestock Development and Rangeland Conservation Tools for Central Asia (LDRCT)*

New Research Results and Progress

This project has published four articles in conference proceedings and a newsletter put out by ICARDA (International Centre for Agricultural Research in Dry Areas). These come from the results obtained from the human welfare (resources and nutrition) surveys as well as the marketing surveys. The nutrition survey found 45% of women and 38% of children were anemic in the southern region of Kazakhstan in spite of the reported meat consumption by people of that region. The market surveys resulted in several recommendations to improve the national livestock business. For example, animal health problems are currently limiting export, there is justification for investing in small-scale dairy marketing, and transportation to markets needs to be facilitated.

The project is setting up the first three CO_2 measuring stations ever in Central Asia. ICARDA is planning on setting up similar experimental stations in several places in the Middle East, making the three stations in Central Asia part of a completely new network of CO_2 monitoring stations for semi-arid and steppe lands. Results from their CO_2 measurements are too preliminary to provide useful results yet.

Quality of Research

Overall the quality of the research is excellent and the project quite ambitious. However, clearly a more detailed nutrition survey is needed to determine who, exactly, in the families is eating meat and how much. The EEP recommends more detailed nutritional monitoring be performed at some time in the near future, especially in the southern region of Kazakhstan, to illuminate the cause of the anemia. Specifically the families with anemic individuals should be targeted for monitoring.

The only other question regards the CO_2 measurements. How does one determine that a region with a diversity of rangelands has been

adequately assessed for CO_2 absorption capacity? One of the Kazakhstani officials at the conference made the comment that it seems to him that more than one site should be used to measure CO_2 absorption within the country. It is understandable that to monitor at a global level, one station per country may be enough but this may not be true at a regional or sub-regional level. The EEP recommends the PI give further consideration to this local issue relative to project goals.

- *Impacts of Economic Reform on the Livestock Sector of Central Asia (LSER)*

New Research Results and Progress

This project has published two chapters in edited books discussing pastoralism in general and in particular in Central Asia. These are based to some extent on the results from the first detailed survey questionnaire, studying the new forms of economic organization that are spontaneously evolving in Central Asia since the breakup of the Soviet Union. Numerous new forms of farm organization are emerging, most do not fit the common definitions from a western point of view, and agriculture in Central Asia is in complete transition, such that these new forms can be very transitory.

With regards to the sheep-breeding project, they are far from getting results. Their sheep project is fairly routine, though if they add the recommended range management component that would make it stronger. The economic reform component of the project is at the ground level, recording an evolutionary process as it unfolds. A transition like what is being seen in Central Asia is a rare event but gives the researchers the opportunity to influence policy development at a very critical stage.

Quality of Research

The EEP is unable to assess the quality of the survey research, although the results on farm organization are interesting. In the future, the EEP requests that this project's PIs and other PIs provide it with copies of the survey instruments and sampling protocols.

EAST AFRICA

- *Improving Pastoral Risk Management on East African Rangelands (PRMP)*

New Research Results and Progress

Of the ten technical reports commissioned during the past year, this project notes that six have been submitted. The EEP has not yet received these reports and is unable to assess their merits at this time or to note any contributions this project is making to worldwide research. Of the remaining four reports, one report was cancelled after the project decided to sever its collaboration with the World Council of Credit Unions and focus instead on developing ties with host-country partners with expertise in the region's rural finance systems. Another report's research is being extended and the paper is to be submitted for peer reviewed publication. The remaining two reports are in progress.

Quality of Research

This project has done an extensive literature review, begun secondary data analysis, and started the collection of preliminary base-line data during the first year of the project. This work includes the identification of the extent of pastoral economic diversification activities, a household survey of southern Ethiopia, identification of the rural financial institutions currently located in south Ethiopia, and an extensive review of the policies and institutions responsible for pastoral risk management in southern Ethiopia and northern Kenya. This "discovery" phase has identified most of the issues related to pastoral risk management. One concern of the EEP is that livestock in the study has been too narrowly defined as cattle and that other livestock are not included. This limits the household pastoral risk analysis. It is also unclear what new contributions this research is going to make to asset allocation studies although the regional specific characteristics of this project will provide important information for policy makers.

- *Integrated Modeling and Assessment for Balancing Food Security, Conservation and Ecosystem Integrity in East Africa (IMAS)*

New Research Results and Progress

The IMAS project has one publication in press discussing land-use modeling. They also have nine abstracts regarding modeling, as well as the results of their socio-economic survey work. Their preliminary results indicate that the El Niño rains had a major impact on livestock and wildlife, but nutritional measures held steady, indicating that the pastoralists were able to ameliorate climate variability on their food supply. However, overall the pastoralists were chronically undernourished. This last observation is not new to the literature; however, a baseline needs to be established in order to evaluate improvement.

The integrated modeling and assessment system project received an enthusiastic endorsement by ILRI during the EEP's meeting in Nairobi. This kind of research holds great promise in evaluating the livestock/ wildlife interface.

Quality of Research

This project has the advantage of using techniques previously developed in Africa, successfully tested in the U.S. and now, after further refinement, applied to Africa again (as well as Central Asia and Australia, according to ILRI). It appears that increasing numbers of variables are being accommodated in the model(s), in particular an important socioeconomic component that would probably not have been included in the U.S. version of the model.

- *Early Warning System for Monitoring Livestock Nutrition and Health for Food Security of Humans in East Africa (LEWS)*

New Research Results and Progress

The LEWS project has no publications to date and has two abstracts regarding presentations describing the project. The project is using a very cutting-edge technique for monitoring the nutritional status of animals. Texas A&M is the primary university in the U.S. pioneering this technology and so this project is being led by the best. Any mistakes that might occur are at least being committed by the most informed people available.

Quality of Research

As previously stated, this project is using very new technology (NIRS) that is still in a developmental stage. The equipment has been used for quite some time for quality control of human foods in the U.S. but its application to animal nutrition is fairly recent. It has been successfully tested on range cattle in the U.S., and wildlife in Australia, so the basic experimental protocol has been developed. In conjunction with the models (NUTBAL – a nutritional decision support tool, and PHYGROW, APEX & EPIC - three forage & crop production tools) the data generated should give adequate advanced warning of livestock production threats. The results from the pastoral coping mechanisms survey documenting current indigenous knowledge and coping mechanisms used, should be very useful for adapting recommendations to the local setting.

- *Role of Animal Source Foods to Improve Diet Quality and Growth and Cognitive Development in East African Children (CNP)*

New Research Results and Progress

The child nutrition project (CNP) has no publications to date and has three abstracts regarding presentations explaining the need for the project. As previously stated in the Workplans and Budget Modifications section of this report, this project is extremely important for providing a justification for continued livestock research. Demonstrating the importance of micronutrients in meat for optimal cognitive development in children will have an impact worldwide. This is a difficult connection to prove, however, and this project needs all the support it can get so they can do it right. Within the U.S. the importance of meat in children's diets is also a controversial topic, making this project very timely.

Quality of Research

This project was designed very carefully and has since additionally benefited from a tremendous amount of feedback and suggestions during the December GL-CRSP conference in Kenya and Tanzania. This feedback was in particular concerned with the health problems of the children that were discovered as a result of the project's initial assessment and continued monitoring. It is a complex project, but they are well organized.

LATIN AMERICA

- *Livestock-Natural Resource Interfaces at the Internal Frontier in Latin America (PLAN)*

New Research Results and Progress

The PLAN project has no publications to date and has one abstract regarding a presentation describing the project. In its current state of funding this project has positioned itself as a community driven outreach activity. The project has, as its only remaining experiment that was not sacrificed due to budget cuts, a very interesting twist on livestock grazing issues. The experiment is designed to investigate the use of forests as "pastures". The experiment tests the advantages and disadvantages of having cattle browse tree leaves as well as graze grass. This is a project that Dan Janzen, a renowned biologist working in Costa Rica, will be pleased to know is being conducted. The study does not simply examine the use of cultivated browse species but also includes intact forest. From a scientific perspective, this question by itself justifies funding this project at some level.

Quality of Research

There are three components to the experiment still being performed, in spite of the drastic budget reductions: a comparison of grazed/ browsed plots to exclosures in the forest where no grazing/browsing occurs; native forage/ browse (trees and shrubs) selection and propagation; and testing to see whether rotational grazing can eliminate the need to cycle livestock through the forest at all. These are all standard procedures for studying forage production but they are not routinely applied to a forested environment, which is what makes this research unique.

CONTRIBUTIONS OF COLLABORATING INSTITUTIONS TO THE GL-CRSP

In Central Asia the CRSP seems to be supplying the bulk of the equipment. Some institutions have been helpful regarding employees and information, but it appears that they do not have much in the way of materials to offer.

In East Africa, some new technology is being provided by the CRSP but space, employees (paid, not always borrowed) and information seems in good supply. Multiple institutions in the region are solid contributors to GL-CRSP activities.

In Latin America, most of the work is being done at the community level, with significant contributions by the host-country collaborating institutions, so the situation is quite different from the other two regions. The communities seem very interested and hospitable.

Balance Between Domestic And Overseas Activities

In general there is a reasonable balance between domestic and overseas activities for most projects. However the EEP notes two exceptions, the livestock early warning system (LEWS) and livestock development and rangeland conservation tools (LDRCT) projects.

For the LDRCT project in Central Asia, the CO_2 data is being processed in the U.S. at this point but programmatically the EEP thinks this should change in the interest of sustainability and host-country development. The data collection process and surveys are being conducted by local people that the U.S. researchers have trained. For the LEWS project in East Africa, the NIRS data is also being processed in the U.S. at this point, but the project leaders say that this will change. And again the data collection process and surveys are being conducted by local people that the U.S. researchers have trained. In addition, the EEP was unable to determine the balance of activity with livestock sector economic reform (LSER) between U.S. and host country collaborators. The one project where integration is complete is the child nutrition project in Kenya. None of the projects are drastically tilted to one side or the other, but it is something all of the projects need to carefully assess to make sure they constitute an appropriate balance of activity by the time the projects are in the third year.

The EEP recommends that all GL-CRSP PIs make every effort to provide opportunities for host-country participants to contribute significantly to research activities. This will assure local competence and sustainability and will contribute to CRSP goals in human capacity development.

Impact of Research Achievements on U.S. Producers and/or Consumers

All of the projects address benefits and applicability of research to the U.S. in their workplans and annual reports. One of the more interesting and unique benefits comes from the CO_2 measurement project in Central Asia. This is in relation to the international attempt to control global warming and treaties that are currently being proposed. In one scenario, each country is allocated a certain number of allowable CO_2 units that it can produce without incurring any penalties. However, the less industrialized countries will probably be producing less CO_2, and not "spend" their allotment. Consequently they will have extra CO_2 credits that they can sell to more industrialized countries, resulting in more cash flow or debt reduction for the less developed country. At this point this is a hypothetical but creative future benefit to the U.S. Most of the other benefits listed are more cut-and-dry, pertaining to research techniques

that will be directly applicable in the U.S. or that will improve markets for the U.S.

The other interesting benefit comes from the child nutrition project (CNP). There is some concern that people who are raising their children as vegetarians in the U.S. may go overboard in their strict application of vegetarian principles and endanger the development of their children. Cases of this have been reported in the news. While these parents may still refuse to feed their child meat, at least this project emphasizes the importance of adequate micronutrient intake, nutrients that are more bio-available in meat but which can be obtained from a carefully planned (and eaten) vegetarian diet.

The principal benefit that the livestock sector economic reform (LSER) project brings back to the U.S. is a better understanding of the democratizing process in Central Asia and the opportunity to assist in a process that will impact our own national security.

Several projects are developing or testing risk management or early warning systems related to agricultural failure. These are the pastoral risk management (PRMP), the integrated modeling and assessment system (IMAS) and the livestock early warning system (LEWS) projects in East Africa. All of these methods are applicable (or have been applied – the IMAS model) to conditions in the U.S. The advantage of developing the systems in Africa is that it is a continent where potential agricultural failures appear more frequently and provide testing opportunities over a shorter period of time.

Even though the Latin America project has been scaled back at this point, they still have learned important lessons in the process of guiding community development. These lessons will be useful in the U.S. as well as by the other CRSP projects as they begin implementing the global aspects of their projects. In addition, the Latin American project has as a projected activity an exchange program between Hispanic farmers in the U.S. and farmers in Latin America.

Year-End Conference Evaluation

The attendance of the EEP at the Year-End Conference was extraordinarily useful in the review and evaluation process. It permitted close interaction with project scientists, the ME, the PAC, and USAID personnel – all of which contributed to EEP tasks.

The PI presentations at the Year-End Conference in general restated and clarified the contents of the Annual Reports which had previously been reviewed by the EEP. This was helpful to the process. In several cases, the presentations expanded on the Annual Reports with additional visual material that the EEP found very useful. Specifically, the IMAS, LEWS, and pastoral risk management project (PRMP) presentations were particularly helpful in clarifying complementarity of project goals for East Africa. The child nutrition project (CNP) presentations provided clear evidence of how successfully one can integrate host-country participants into project activities, a desirable model for other components of the GL-CRSP. The livestock-

natural resources interfaces (PLAN) project presentation (Latin America) clarified the Annual Report which the EEP had found confusing as a stand-alone document. The Central Asian presentations were complete but did not enlarge on the Annual Reports which were reasonably clear in written form. The EEP notes, however, that the oral presentations conveyed more of a sense of regional integration than actually seems to exist based on our subsequent conversations with the Central Asian PIs.

The EEP particularly endorses the utility of a Year-End Conference as a vehicle for globalization and networking. We believe all participants at the Tarangire Conference benefited from the event, and particularly the opportunities for interaction. Work accomplished outside the conference rooms in informal conversations was probably at least as important as the discussion in the formal conference sessions in furthering the common goals of the GL-CRSP. The Year-End Conference also provides a venue for institutionalizing the global components of this CRSP.

RELATIONSHIP WITH EXTERNAL GROUPS

An important source of strength of the Collaborative Research Support Program historically has derived from the degree to which each CRSP has built partnerships with external groups both in the public and the private sector. Such partnerships provide synergistic opportunities to expand the impact and accomplishments of the CRSP, and are of fundamental importance to their success. In an era of diminished resources and heightened expectations from USAID, the formation of strategic partnerships with external groups is of particular importance. For some CRSP projects, indeed, the core funding from USAID must be viewed as little more than "seed money" to initiate activities. The proactive development of strong collaborative partnerships will be essential to any enduring accomplishments. Such partnerships expand opportunities for the CRSPs to be truly "global" activities, provide a mechanism to leverage additional funding support for global activities, assure that the CRSPs avoid redundancy with other international programs, and are an important outreach tool by which research results can be evaluated and applied at the grass roots level both at home and abroad.

Note that many of the GL-CRSP projects cite as examples of external partnerships the contributions of their affiliated U.S. and host-country research institutions, universities, ministries, and similar collaborators. For purposes of this review, partnerships such as those that are intrinsic to the core collaborative nature of the CRSP are minimally discussed since it is understood that in any collaborative research activity both the U.S. and the host-country partners are expected to make significant contributions of personnel, space, and time to the accomplishment of the CRSP goals. Our focus will be on those partnerships that are truly external to the core CRSP collaborators.

The GL-CRSP, although a recently created entity, is making efforts to capture the advantages of strategic partnerships in order to realize the benefits described above. The material provided to the EEP by the ME as well as the information gathered during the research conference in Tanzania underscore the efforts that are being made by several of the GL-CRSP projects in this regard. Details regarding strategic partnerships are summarized below together with our recommendations.

Collaboration and Diversity of Partnerships at the Project Level

The collaborative partnerships that have emerged during the first year of the GL-CRSP are multiple and of uneven character. The most extensive external partnerships to develop appear to be with the IARC system [particularly with the International Livestock Research Institute (ILRI)] which are detailed below. Other partnerships have been forged with a number of NGOs, local governmental agencies, national ministries, existing regional networks, host universities, and federal agencies in the United States. The level of collaboration has varied from that of full working partner to passive recipient of research results. Specific examples illustrating the range and diversity of partnerships that have emerged are cited below by region.

East Africa

The pastoral risk management project (PRMP) has developed an extensive array of NGO partners that currently number 25 in Ethiopia and 27 in Kenya. This network has participated in early phases of the project to identify risk management priorities on which the project will focus. About half of the network organizations work at the grass roots, and thus will be of great importance in outreach activities as the project matures. In fact, a stated goal of this project is to "create an outreach component…that is independent of core funding for applied research, and acts regionally to unite outreach across southern Ethiopia and northern Kenya." The EEP finds this proactive effort exemplary and cites it as an example of what others might do.

The livestock early warning system (LEWS) project has forged a partnership with the crisis mitigation unit of ASARECA that has the potential of providing support for validation of research sites for the LEWS effort. The LEWS project has also identified a number of NGOs, including Heifer Project International, as targets for collaboration, but there is no indication to date of much more than this preliminary step towards partnership. Regrettably, the EEP also finds no evidence that the LEWS project has made little more than a preliminary effort to link with the USAID-funded Famine Early Warning System (FEWS) project, a natural linkage that we urge be made promptly.

The child nutrition project (CNP) has made admirable strides in establishing linkages and partnerships with local government units that reach well beyond the traditional CRSP partnering model. The local government units, including the Kenya Ministries of Health and Education, have provided not only the expected level of support to the research effort but have also provided support far beyond that base level through secundment of personnel to the project for extended periods of time. Additionally, the local government units have provided vehicles, kitchen space and logistical support that have been absolutely essential and without which the project could not go forward.

The integrated modeling and assessment system (IMAS) project does not provide much

evidence of the establishment of significant external partnerships in the material that was submitted in the annual report. The project authors cite working relationships with governmental units in the Ngorongoro Conservation Area Authority and note that computers and the model that is developed will be left for stakeholders in Tanzania. They also note an expressed interest in their work by regional USAID missions. Little else is said about external partnerships with the IMAS project. Consequently, it appears to the EEP that the IMAS project is operating in a conventional research mode without appropriate attention to partnering and development needs in the area in which it is active.

Central Asia

The livestock development and rangeland conservation tools (LDRCT) project has formed collaborative partnerships with conventional government and university partners as expected. The project annual report also makes note of a number of NGOs as "…mid-level end-users and future sources of information" but says very little about their current role. Likewise, a list of contacts that have been made with a variety of agencies and institutions, both in the United States and in Central Asia, is provided but the report includes no commentary on their contributions to the project at this point. Clearly a start has been made in forging external partnerships but much remains to be done to evolve the relationships into real working partnerships.

Similarly, *the livestock sector economic reform (LSER) project* annual report provides scant evidence of the formation of genuine external partnerships beyond those that would be expected in the collaborative mode intrinsic to a CRSP. Additionally the EEP notes with concern that this project has drawn almost half of its collaborators from Russia rather than the Central Asian host countries. This is regrettable given the strategic importance of this region to the global community.

Latin America

The single project operating in this region, *the livestock-natural resources interface (PLAN) project,* is remarkable in the degree to which it has forged partnerships with diverse external groups. Perhaps given the limited core funding support provided to the project, the project PIs have been forced to identify working partners from the start, and they have done this task well. In addition, the community-based mode of operation of this GL-CRSP project has led the collaborators to forge natural partnerships with NGOs operating in the areas that they have targeted. Local groups have supported this project through educational programs, workshops, and other forms of assistance at the grass roots level. The EEP is impressed with the degree to which the project leadership has forged these relationships to permit activity even in the presence of severely limited core funding support. We do NOT recommend trimming budgets to force formation of these partnerships but rather cite the utility of these collaborative partnerships in vastly expanding the ability of a project to operate and make a difference in the targeted areas.

Transfers, Buy-Ins, and Other Leveraged Funding

All of the GL-CRSP projects report varying degrees of success in leveraging external resources, both monetary and in-kind. Total leveraged resources documented in the 1998 annual reports submitted are $683,744 or approximately 27% of the core GL-CRSP budget from USAID. These resources have come from a wide variety of sources. Included among them are government agencies both in the United States and in the target regions, internal university funds, foundations with interests in the activities of specific projects, and international organizations functioning in the regions in which the GL-CRSP has an interest. Details are enumerated in the annual reports submitted by the PIs.

The EEP notes that some of the reported "leveraged external funds" are in the form of required match and as such do not constitute leveraged funding in the way that we understand the term. Other reported leveraged resources are from independently funded activities (some of which predate the GL-CRSP) that parallel in some way the project making the citation but which would nevertheless exist in the absence of the CRSP. For leveraged resources of this sort, the EEP encourages PIs to detail the relationship of these independently funded activities to their CRSP project.

For a CRSP at this early stage of development, the extent of efforts to leverage additional funding support is exemplary. In several instances, the PIs state that proposals for outside funding have been prepared and submitted, thus indicating a continuing and proactive effort to leverage needed resources to supplement core funding.

Clearly, those projects that have experienced difficulties due to core funding shortfalls will need to make more of an effort to secure external leveraged funds to expand their operational capabilities. The EEP is aware of continuing efforts by the GL-CRSP ME to seek additional core funding from USAID for this and all CRSPs but cautions that PIs should not assume that core funding increases will occur any time soon. The EEP recognizes that core funds are limited and recommends that PIs understand the expectation that core funds must be supplemented as a matter of normal operational procedures to accomplish the goals of the GL-CRSP.

Regrettably, the EEP notes that no USAID mission buy-ins are reported to date (although we note that REDSO/ESA has provided funding support for the IMAS project for FY98/99 and the Ecuador activity reports a mission buy-in to a linked non-CRSP project in the region). However, the attendance of GHAI, REDSO/ESA and USAID mission personnel from Ethiopia, Kenya and Tanzania at the Year-End conference in Tanzania is indicative of regional interest in the CRSP which could be leveraged into mission and other USAID buy-ins in this region. Certainly PIs active in this region should also seek opportunities for buy-ins from the Greater Horn of Africa Initiative of USAID. Central Asia PIs report local mission interest in their activities in the region that could also be leveraged for

additional support. It is recommended that all project PIs in all regions work with the GL-CRSP ME to seek opportunities for mission buy-ins. Likewise, it is recommended that the ME accept an obligation to assist the PIs in the identification of additional potential sources of leveraged funding support for the individual projects. This is a reasonable expectation of the ME and was identified as such by a number of the PIs during the Tarangire Conference.

Project Efforts to Establish External Partnerships and Linkages

As noted above, the EEP observes that the GL-CRSP PIs and ME have, to a significant degree, sought out and initiated significant partnerships with an array of external partners. These partners and potential partners include not only the traditional and expected host-country (HC) and U.S. government agencies and the university community but also count in their membership numerous NGOs, several foundations, multilateral development banks, and international institutions with shared interests. The efforts to date have been significant and must continue for reasons noted in the introduction to this section of the EEP report. The GL-CRSP PIs and ME do not and cannot operate in a vacuum independent of other interested entities operating in target regions.

The EEP is aware the ME has made initial contacts with the International Fund for Agricultural Development (IFAD) that may lead to substantial resources for the GL-CRSP projects. The presence of an IFAD scientist, Dr. Ahmed Sidahmed, on the PAC has been instrumental in developing this external relationship. The EEP applauds this and other recent efforts to leverage external resources and develop partnerships for the benefit of the GL-CRSP.

Contributions to International Research and the Development Community

At this point, it is difficult to comment on the specific contributions of the GL-CRSP to international research and development since the status of most of the work is still preliminary. Development must be understood and accepted as a long-term activity if enduring, measurable, and visible results are to be produced. However, as noted in the section of the EEP report that deals with the research program, important progress is being made on a number of fronts with regard to the research agenda as a contributor to development and original research is underway on most projects. The interests of several of the IARCs (see below) in the work of the GL-CRSP is clear (although circumstantial) evidence of the importance and relevance of the work that is planned. Likewise, the contribution through leveraged funds cited above is indicative of a research and development agenda that is on-track from the perspective of other donors operating in similar regions and focusing on similar problems. The EEP applauds the significant achievements to date in the development of a relevant research agenda that

will, we believe, contribute to global development needs in the livestock sector broadly understood (including pertinent environmental constraints, economic concerns, and end-user priorities). We recommend that as the GL-CRSP evolves, the PIs continue to maintain open and frank communication with relevant partners in the international research and development community who are clear stakeholders in the outcomes of this CRSP.

Working Relationships Between GL-CRSP and IARCs

The GL-CRSP has forged a significant, positive, friendly, and apparently enduring relationship with the International Livestock Research Institute (ILRI) which is headquartered in Nairobi. Indeed, the conversation with the Director-General of ILRI, Dr. Hank Fitzhugh, at our meeting during the first day of the review in Nairobi underscores the depth and mutual importance of the relationship. The presence of Dr. Ralph von Kaufmann, ILRI's Director of External Relations, on the PAC of the GL-CRSP is further indication of the close relationship of the two entities. Dr. Hank Fitzhugh describes the relationship between ILRI and the GL-CRSP as "synergistic and symbiotic," a clear and unequivocal indication of the importance of the partnership to both sides. The mission of ILRI to promote smallholder livestock production systems and to protect natural resources as well as to engage in livestock policy analysis is completely consistent with that of the GL-CRSP. ILRI's interdisciplinary approach to its mandate is parallel to that of the GL-CRSP, as is the ILRI partnering mode with NARS, ARIs, and other IARCs. The interest of ILRI in expanding its presence in Central Asia is also consistent with the intentions and current activities of the GL-CRSP. It is clear to the EEP that there is much mutual respect and affection between the GL-CRSP PIs and the scientists active with ILRI. This is particularly the case with respect to the activities in East Africa, but it is noteworthy that there is a potential for GL-CRSP led activities in Central Asia to form a mutually beneficial collaboration with ILRI in that region as well.

The EEP applauds the nature and quality of the current working relationship of the GL-CRSP with ILRI, and encourages the ME and the PIs to do all that they can to support and strengthen the relationship globally. At the same time, we caution that the relationship not be taken for granted. Like any relationship, it requires communication, energy, and effort to work. It is clearly in the interest of both parties that this relationship be preserved, protected, and enhanced in all dimensions, and the EEP recommends that strengthening of this relationship continue to be pursued – including the exploration of new forms of collaboration such as the proposed "Pastoral Systems Initiative". Participation in this initiative would integrate pastoral research and development projects currently operating in the Greater Horn of Africa including ASARECA's Crisis Mitigation project, OAU/IBAR and Tuft University's Community Health Workers project, and the four East Africa GL-CRSP projects.

The EEP encourages the PIs and the ME of the

GL-CRSP to seek similarly synergistic relationships with other member institutions of the IARC system as appropriate and where there are clear overlaps in mission. We note that the Central Asian projects have benefited from an emerging relationship with ICARDA through collaboration in a sheep range project and that GL-CRSP scientists have also contacted ISNAR and ICRAF relative to project activities in East Africa and Central Asia. We encourage and recommend that such contacts be pursued in the interests of enhancement of both the IARC system and the CRSPs. Both are threatened by declining resources and both will benefit from the synergistic possibilities that come with partnering as exemplified by the relationship that has developed with ILRI.

Degree of Collaboration between U.S. and Host Country Scientists

Collaboration in the CRSP mode is understood by the EEP to include full and equal partnership across all research activities that make up a given GL-CRSP project. Collaboration includes work plan development, project implementation, interpretation of research results, technology generation/testing, and dissemination of results to an end-user community. In this broad sense, it may be somewhat early to offer conclusions on the degree of collaboration that exists in the GL-CRSP after barely one year of effort but in general the EEP would like to see more evidence of full integrative collaboration than there seems to be at present, especially in the development of work plans and the reporting of early research activities/results. At a minimum, we would expect acknowledgement of host-country collaborators as co-authors of work plans and annual reports, which is lacking for the most part in the material that was supplied to the EEP. Our conversations with PIs, the review of PI annual reports, and our observations during the Tarangire Conference permit us to offer several specific comments relative to collaboration. We will do this by region:

East Africa

Projects in this region represent a spectrum of collaborative relationships ranging from full integration to relatively modest cooperation with local counterparts. The child nutrition study is outstanding among the projects active at present in this region for its exemplary degree of genuine collaboration. The two PIs (Neumann and Bwibo) are joined by a large team of additional participants whose input, contributions, and level of involvement with the project give new meaning to the term "collaborative." In every sense of the word, the team that has been put together to plan and implement this extraordinarily complex nutrition intervention activity is collaborative. The strength of the collaboration was evident to the EEP in the multiple presentations made at Embu, the visits to the project sites at two schools, and the visit to the food preparation kitchen. The degree of pride evident across all dimensions of the study from cooks to parents to school administrators to regional administrators to staff scientists was simply remarkable. In fact, it is our opinion that the

nutritional intervention study could not have been implemented in any way apart from the fully integrated collaborative partnership that has emerged. Other component projects of the GL-CRSP would do well to model their collaborative relationships after the structure that has been put in place by this team.

Our conversations with the East African collaborators (in a meeting independent from the U.S. PIs) were revealing in this regard. A collaborator on the child nutrition study stated great satisfaction with the relationship that has emerged noting that she felt truly a part of the research team through the openness of the PIs to her role in decision making. The pastoral risk management project (PRMP) has also done a good job of fully vesting their host-country collaborators. In contrast, the other East Africa projects appear to have made only modest efforts to integrate East Africans as true collaborators. One of the East African team members whom we interviewed stated his concern that there be more "openness" in recognition of local strengths and more shared leadership. This individual particularly objected to the use of a non-Tanzanian as site coordinator when there are fully capable local collaborators who are part of the project. Others who commented on the collaborative relationship voiced concern about the perceived lack of attention to institutionalization of research activities and research capacity (especially with reference to training activities), concerns that full collaboration would do much to alleviate. There are also questions at this point with regard to sustainability of research efforts beyond the lifetime of the GL-CRSP. In one instance (LEWS project), there seemed to be confusion with regard to whom the lead agency on the African side is. All of these concerns can, in the opinion of the EEP, be rectified with fuller, more intentional attention to the adoption of the collaborative mode implicit in the CRSP model.

Central Asia

It is difficult for the EEP to discern the degree of collaboration among HC and U.S. scientists working in this region. Certainly, the accomplishments of the two projects in this region in the first year speak to the existence of a network of cooperators, but the degree of collaboration in the fully integrative sense is hard to evaluate. Only one cooperator from the region attended the Tarangire Conference, and this official has more of an administrative role than a scientific role in the project activities. In conversations with this cooperator it was clear he valued the opportunities afforded to his institution through the presence of the GL-CRSP. Nevertheless, the EEP is concerned by the lack of collegiality evident in this region and efforts must be made to bring local partners into a full collaborative relationship that can be documented. Failure to accomplish this will threaten the sustainability of projects in this important region. The EEP recommends that PIs operating in Central Asia make a sustained commitment to the formation of truly collaborative partnerships over the next year of the GL-CRSP activity in the region.

LATIN AMERICA

The principal constraint to fully integrative collaboration in this region is insufficient core funding. Not only have funding shortfalls led to a decline in interest among faculty at the University of Wisconsin, but have also interfered with the ability of the collaborators to communicate amongst themselves. The collaborators present at the Tarangire Conference, nevertheless, voiced a significant degree of affection for each other that convinced the EEP that collaboration in this region has a good chance of growing and strengthening in significant ways as more funds become available. The participatory approach that is at the philosophical heart of this project lends itself very well to building collaborative partnerships that will operate successfully and be sustained over the lifetime of the project. The EEP commends the Latin America project as exemplary in the mode by which it has forged a strong collaborative network in the region.

INFORMATION DISSEMINATION

The recently completed (September 1998) review of the CRSP Guidelines requested by the Board on International Food and Agricultural Development (BIFAD) included commentary on the importance of a proactive effort to disseminate CRSP research results. It was the opinion of the BIFAD Task Force that was appointed to review the CRSP Guidelines that dissemination must be an intentional part of the workplan developed by the component projects of each of the CRSPs. Proactive efforts to disseminate research results are important not only as contributions to the CRSPs' development agenda but also because these efforts will help the CRSPs gain the support and confidence of local institutions and stakeholders. The BIFAD Task Force also noted that dissemination can and probably will take many forms spanning a spectrum that includes formal professional journal articles, popular press articles, newsletters, radio/TV and other electronic media, workshops, and demonstration activities for end-users.

The EEP concurs with this perspective. The GL-CRSP, like all of the CRSPs, has a development mission that is explicit in its structure and function. Research is necessary to the fulfillment of this mission but is alone not sufficient. Dissemination, testing, and utilization of research results gives meaning to and makes relevant the research being done, and is a logical goal for all CRSP activities. Moreover, in this era of accountability and heightened expectations of impact, the dissemination of results to a user community, either at the grass roots level or at the decision-maker (policy) level, MUST be part of the GL-CRSP.

Having stated this, the EEP acknowledges that it is still very early in the lifetime of this CRSP to expect that measurable dissemination of research results has occurred. We do note, however, that only one year into the life of this CRSP the PIs already document some 30 presentations, abstracts, and peer reviewed articles in professional journals as well as a series of technical reports all of which are attributable to the GL-CRSP in whole or in part. The EEP believes that this is a commendable effort but alone is not sufficient for quality dissemination in a development assistance context. Much more remains to be done as the GL-CRSP goes forward.

We confine the majority of this portion of our review to an assessment of efforts to date that GL-CRSP PIs have made to design a dissemination plan and related efforts to assure that research results are put to good use. In addition, we offer suggestions as to how to

improve the dissemination effort that will become increasingly important to the GL-CRSP.

Publications in Peer Reviewed Journals and Dissemination Through Other Media

As noted above, the annual reports prepared by the GL-CRSP PIs document 30 publications, abstracts, and/or presentations to professional audiences in the first year of the GL-CRSP. In addition, the annual report of the pastoral risk management project (PRMP) lists 10 "technical reports" that have been prepared by project scientists to date. Taken as a whole, this is a credible record of productivity for a relatively brief period of time, and certainly underscores the importance that the PIs attach to dissemination of their early research results to professionals working in their disciplines.

However, important as are these sorts of professional outreach efforts, they are alone NOT sufficient to the development agenda and goals of the GL-CRSP. As the GL-CRSP matures, publications must be prepared for print media that will reach audiences in the development community and stakeholders, including livestock producers and policy-makers, at the user level. This could certainly include newsletters targeted at the user community, newspaper and other popular press articles, and other such paraprofessional outlets. The livestock development and rangeland conservation tools (LDRCT) project in Central Asia reports making use of the popular press both in the U.S. and in Central Asia to disseminate research plans, something which the EEP hopes will continue with this and other GL-CRSP projects as part of their outreach efforts.

The EEP also encourages the GL-CRSP PIs to consider alternative outlets for research results such as radio and television or even electronic means where appropriate to the context of the research location and target audiences. To date, there is relatively scant evidence of PI use of such alternative outreach media (except for the web site established by the pastoral risk management project in East Africa) although clearly there is great opportunity for such outlets.

The EEP recommends that efforts be devoted each year to broad dissemination of research results as a part of the work plan. However, the PIs must be certain of the appropriateness of the mechanisms chosen for this dissemination effort in light of the audience that is being targeted.

The EEP also recommends that annual budgets developed by the PIs show commitment to dissemination by allocation of resources to this essential task. Although we recognize that project budgets are tight, the imperative for dissemination must not be neglected.

Established Mechanisms for Dissemination of GL-CRSP Generated Technology

It is important that as the GL-CRSP matures the PIs and ME proactively seek mechanisms that will assure that the research results and resulting technologies are put into the hands of

an end-user community that will benefit from the development implications of the efforts that they are making. These mechanisms can and should take a variety of forms that might include such outlets as print media, radio/ television, workshops, or consultations with decision-makers in the regions where the GL-CRSP is active. The selected mechanism might also engage extension specialists in special training activities or utilize the grass roots contacts and expertise of NGOs with whom the CRSP PIs have formed partnerships.

In addition, it is important that during the life of the GL-CRSP that donors, policy-makers, scientists, educators, and the development community be kept fully informed of CRSP activities and progress. The EEP commends the ME for its newsletter, "Ruminations" published and disseminated quarterly, for contributing to this task.

The EEP notes that early efforts to plan dissemination activities have been modest at best with some projects. Regrettably, some GL-CRSP PIs even question their responsibility for this dimension of the work of the GL-CRSP. Perhaps this is an inevitable consequence of the relative newness of the GL-CRSP and the inexperience of some of the PIs in outreach in a development context.

Nevertheless, some noteworthy dissemination efforts have been made, particularly in East Africa. For example, the pastoral risk management project (PRMP) has organized two workshops that have been designed to set outreach priorities for risk management. This project has also developed a brochure that has been widely distributed in East Africa to acquaint stakeholders with the project. In addition, the project has formed a network of 52 NGOs operating in the region in part to contribute to future outreach efforts and has a stated goal to develop a broad outreach component that will not be dependent on core research dollars. The integrated modeling and assessment system (IMAS) project, likewise, has planned a workshop in the Ngorongoro Conservation Area in early 1999 to demonstrate the IMAS model to target NGOs as well as a workshop to review policy issues of importance to East African pastoral populations. The LEWS project conducted a national livestock early warning workshop in Ethiopia in 1998 for NGOs and government officials, which has resulted in the establishment of a technical committee to support the project activity in the region. This project plans a second workshop for policy makers in East Africa in the near future and indicates plans to draw regional extension workers into their research efforts – something that certainly will lead to outreach opportunities. The LEWS project has also developed an informational brochure highlighting accomplishments and reporting on workshop activities. The child nutrition project (CNP) states that it has plans to initiate outreach activities in year three of the project, but the annual report notes that already key school administrators, doctors, parents, community leaders, and policy-makers are aware of the importance of school-based feeding programs to child well-being. The project has set a goal to make school-based supplementary feeding both affordable and sustainable at the local level. Clearly, this local

support is an example of a dissemination effort worthy of note and commendation.

In Central Asia, as noted above, the livestock development and rangeland conservation tools (LDRCT) project has made good use of the popular press in dissemination activities to date. The PI on this project also noted in the annual report that there is outreach benefit attributable to rural surveys that have been conducted in the start-up phase of the project, and that this survey process has resulted in local stakeholder input into problem discernment and research design. The Central Asian economic reform project (LSER) has a stated outreach target audience of policy makers and sheep producers in the region although relatively few specifics are provided to describe how the process will work in practice.

The sole project in Latin America (PLAN) asserts and documents that outreach is implicit in the community-based participatory approach that is at the core of the project activity. In addition, this project has made good use of local NGOs in the work that it has accomplished to date in Bolivia, Mexico, and Ecuador. A workshop has already been held in Bolivia and one is planned for Ecuador in the near future. Outreach in the United States is scheduled for later in the lifetime of the project. The EEP notes that this is the only GL-CRSP project that has a dissemination plan for the United States. PIs are reminded that the CRSP model is explicit about mutual benefits both in cooperating countries and in the United States. It is important to note that funding shortfalls prevented this project from implementation of an innovative outreach activity which would have been based on an "exchange" of Hispanic farmers in the United States with similar farmers in Latin America to witness the community-based process the project is using. The EEP regrets that this did not occur but commends the idea and urges the PIs to consider ways by which this might be accomplished in the future.

Project Integration Within and Across Research Sites

The greatest opportunities for project integration within the GL-CRSP are in East Africa where four projects have been funded and are operating. Regrettably, it is not apparent to the EEP that a significant effort has been made to integrate projects in this region in which there seem to be obvious opportunities. In particular, it appears to the EEP that the LEWS project and the IMAS project – both of which are working with the development of GIS based models for livestock production in the region – could work more closely than is the case at present. Certainly, there are also opportunities for integration of the pastoral risk management project with the LEWS project since both are concerned with threats to livestock production in East Africa.

In Central Asia, some limited communication seems to exist between the two projects that are currently functioning there, but there could be much better integration than appears to be the case at present. The livestock development and rangeland conservation tools (LDRCT) project has clear policy implications that should be of

interest to the livestock sector economic reform project that is operating in the same countries and, in some cases, with the same institutions. This strikes the EEP as an opportunity that is currently being missed.

Finally, virtually all of the projects make mention of nutrition and health concerns as they relate to animal source foods (ASF). Only one project, the child nutrition project in East Africa, is active in this arena, but it seems to the EEP that the expertise resident in that project could be used in some strategic and synergistic way to strengthen the nutrition and health component of other projects, particularly the livestock development and rangeland conservation tools (LDRCT) project in Central Asia which has completed and documented a nutritional survey. Likewise, several of the GL-CRSP projects make use of GIS applications and certainly ought to engage in more widespread sharing of methodologies than is the case at present.

Attention to Policy Component of GL-CRSP Global Plan

Authors of all of the GL-CRSP annual reports for 1998 are obliged to make note of the policy considerations, components, and implications of their work. The EEP appreciates this serious consideration of the policy component of the work that the GL-CRSP is doing and encourages each project to follow through on the plans that they have made to assure engagement of policy-makers in the utilization of results that will flow from the planned research. Attention to the policy environment and efforts to network with the key policy-makers in each location in which the CRSP is active are essential to implementing the results of the research that is being done. The efforts of several GL-CRSP PIs to date to discern and understand existing policies, laws, and customary relationships that affect livestock production and environmental issues relative to livestock production are commendable and must continue. The next step, and one that is incumbent on the entire GL-CRSP family, is to draw policy makers into discussions relative to the research findings that will flow from the planned global project activities. It is not good enough simply to keep policy makers informed of the work of the GL-CRSP; these individuals must be part of the host-country team in every case. Discussions with host-country decision makers will help to inform the direction of the research and should also insure that the information learned in the CRSP research is factored into key decisions affecting the livestock sector that will be made in the future. There is probably no greater nor more important outreach activity than in the policy arena if the GL-CRSP is to have an enduring impact on the nations and regions in which it is operating.

TRAINING & INSTITUTIONAL DEVELOPMENT

There are two components to the training activities of the GL-CRSP projects both involving issues of sustainability of GL-CRSP research. The first component involves the training of U.S. researchers; the second, host-country researchers. It is clear that at the end of the first year, many of the GL-CRSP projects have been more successful at implementing the first component of the training activities. Of the seven projects, only three stand out for their training of host-country researchers. These three projects are the pastoral risk management project (PRMP), the livestock early warning system (LEWS) project, and the child nutrition project (CNP).

For most projects, it was not possible to assess either the training plans or the quality of the plans from the materials provided. All that the EEP can ascertain is the number of people in training during operating year budget (OYB) 1998 or targeted for training in the 1999 OYB and we have evaluated the projects on this basis.

The EEP emphasizes the importance of institutional development to the long-term impact and sustainability of the GL-CRSP within host countries and regions. The EEP conceptualizes institutional development broadly to include universities, NGOs, and government agencies/departments that are directly involved with GL-CRSP projects. When evaluating institutional development the EEP is concerned with such issues as degree of incorporation of host-country collaborators into the CRSP projects and the breadth of collaboration in addition to the fixed resources and human capacity left with host-country institutions at the end of the project. Here too, there are only a few projects that stand out for their potential impact on host-country institutional development. These projects are the livestock-natural resources interface (PLAN) project, the pastoral risk management project (PRMP), the livestock early warning system (LEWS) project and the child nutrition project (CNP).

The EEP is concerned that no host-country collaborators appear to have been invited by the PIs to the Tarangire Conference from the Central Asian projects. Institutional development is a major component of the GL-CRSP and part of institutional development consists of developing networks beyond individual CRSP projects. The lack of Central Asian team members at Tarangire is an indication of the weaknesses in the training and institutional development components of the Central Asian projects as well as budget constraints. In addition, given the importance

of regional and global planning activities at the Tarangire Conference, regional coordinators should have been in attendance from all the GL-CRSP regions.

EAST AFRICA

In Kenya, *the integrated modeling and assessment system (IMAS) project* is supporting a number of graduate students. Long-term training includes the field studies of a M.S. student from the Department of Botany who is collecting data on the vegetation dynamics at the National Range Research Centre in Keboko. In Tanzania, the field studies of two M.S. students are being supported by this project. One student, from the Department of Architecture and Lands at the University of Dar es Salaam, the other is from the Department of Animal Sciences at Sokoine University. In 1999, two additional M.S. students from the University of Nairobi are to receive partial support for their studies. It is unclear whether this support is for data collection or is to pay for other training activities. There is currently only one host-country collaborator identified for training in the U.S. Ms. Joyce Acen, Management Systems Officer with the Uganda Ministry of Tourism, Wildlife and Antiquities, is to receive full support for her Ph.D. studies in the Department of Ecology at Colorado State University.

At present, there is only one host-country collaborator who has been identified for short-term training by this project. Mr. Allen Kijazi, Chief Manager, Resource and Planning Unite, Ngorongoro Conservation Area Authority (NCAA), is scheduled to attend a shortcourse at ILRI. In addition, Mr. Onyango, a staff member at ILRI, is to receive GIS/modeling training. This training will have a regional impact on the sustainability of this CRSP project's research. However, this is not a substitute for host-country short-term training and more host-country collaborators need to be identified for training if this project is to be sustainable. There are currently plans for a shortcourse on GIS and ecological modeling at ILRI in 1999 and an IMAS training workshop in Tanzania. However, with the exception of Mr. Kijazi from NCAA, no other host-country collaborator has been identified as a participant. It is also unclear if the workshop and shortcourse will occur in 1999. In the 1998 annual report, the PIs note that "we are unable to find the resources to conduct the training workshops."

The IMAS project has done a better job of U.S. researcher training than HC training. The project is currently funding two postdoctoral research associates, one fully supported, the other partially supported, and is also fully supporting a doctoral candidate. In addition, another doctoral student is to receive partial support for fieldwork in 1999.

Currently, the sustainability of the project can be measured in the "user-friendly" GIS model and software that will be left at each study site along with the computers. The EEP is concerned that provisions have not been made to train host-country collaborators in the modeling methods or data collection techniques necessary to update or refine this model. As the project is currently presented,

decision-making tools are being left behind that will quickly become dated without model and data upkeep. It became apparent after EEP discussions with African collaborators that many do not even know if they will be left copies of the data they have collected for this project. It is very important that the PIs let their host-country collaborators know exactly what will remain when the project ends and that the host-country collaborators be prepared appropriately to take leadership on this research activity after the GL-CRSP ends. The current lack of integration of the IMAS project with host-country institutions lessens the potential for project sustainability if the CRSP moves or terminates. The concern of the EEP is that host-country institutions are currently being used for data collection activities and are not fully vested in the project.

The pastoral risk management project (PRMP) is strong in both its training and institutional development components. There has been full or partial support (including support for special studies projects) for the training of fourteen undergraduate and graduate students in the United States, Norway, and Kenya. Institutionally, the project has provided extensive support for the development of a master's-level training program in the Department of Natural Resources at Egerton University in Kenya. The project also has brought together NGOs and other host-country outreach groups, which, from the start, are fully incorporated into this project. It is also clear that the PIs have seriously integrated training into their project, beginning with their Preliminary Research Planning Workshop on Risk Mapping and Associated Field Topics for their post-doctoral associate, Kevin Smith.

In addition to the Preliminary Research Planning Workshop, workshops were held at Egerton University in June, ILRI's Addis Ababa campus in August, and scheduled for ILRI's Nairobi campus in December. The Egerton University workshop, the First Project Planning Workshop, included key administrators, faculty, staff and prospective graduate students as part of the review of the proposed master's-level training program. The two ILRI workshops were outreach workshops for Ethiopia and Kenya respectively.
This project should be commended for its inclusion of host-country participants from year one. This inclusion gives host-country institutions a vested interest in the project and goes a long way toward ensuring sustainability. The development of a master's-level training program in the Natural Resources Department at Egerton University also supports sustainability of the CRSP research.

The livestock early warning system (LEWS) project is also strong in its training and institutional development components, particularly within the host-country. LEWS has identified two Ph.D. candidates, Mr. Stephen Byenkya, an animal scientist from Uganda who is to do his degree at Makerere University, and Mr. Angello Mwilawa from Tanzania who is to do his coursework at TAMU, and a M.S. student, Mr. Dawit Negassa of Ethiopia. These three students are doing their graduate work under the collaborative supervision of U.S. and host-country faculty. In addition, Sarah Ossiya, a range scientist from Uganda, is currently a

Ph.D. student at TAMU. From the materials provided, it does not appear that any U.S. graduate students are being trained by the project at this time.

The livestock early warning system (LEWS) project has also been active in short-term training of host-country scientists, government and NGO personnel, and collaborators. Three types of workshops have been held to date: (1) a workshop to train scientists in the design and implementation of the early warning system which was attended by twenty-five scientists from five countries; (2) two workshops to provide hands-on training on the Almanac Characterization Tool in Uganda and Ethiopia; and (3) an information workshop on early warning systems for non-government organizations, the regional and national governments of Ethiopia.

Host-country institutional development by LEWS includes the establishment of NIRS laboratories within each country, the provision of computer equipment and software to in-country teams, the involvement of local extension officers, the upgrading of research facilities at collection sites, and the training of in-country personnel in the techniques of implementing the early warning system. In addition, Ugandan children attending local grade schools are being involved through science projects designed by Dr. Ebong, the in-country coordinator. At this time, the first NIRS laboratory has been established at ILRI-Debre Zeit, Ethiopia. Other laboratories will be established in the following four project years.

It is clear from the training and institutional development work done to date that the LEWS project has a strong chance of being sustainable if this CRSP project moves or is terminated. Every effort is being made from the start to include host-country personnel from policymakers to schoolchildren in the project.

The child nutrition project (CNP) also has been particularly good at host-country training and institutional development. Most of the components of training are currently centered on the controlled study of school children. Two Ph.D. students are currently being trained by the project at the University of California at Davis. It appears that both of these students are from the U.S. An additional three Ph.D. in-country collaborators have been identified for possible Ph.D. work at either the University of Nairobi, UC Davis, or Wageningen University (Netherlands) and a fourth has been identified for a Masters degree. In addition, over fifty people, mostly women, have been trained in various methodologies related to the data collection activities of the project. This training has provided these women with marketable skills that can be utilized in future research/evaluation projects and in provincial and national ministries.

At this time, the project is still in its experimental research stage with no research activities that need to be sustained beyond the second year of the project. In short, this project does not require the perpetual collection of data to ensure its success. Rather, the data collected and analyzed during the first two years is to be extended in the second phase to a sustainable community-based school

feeding program in the district that participated in the study. The project's first stage also does not lend itself to a full evaluation of its impact on host-country institutions, although it is very important to note that all data is being simultaneously transmitted to UC Davis and the University of Nairobi. This is an important component in developing sustainable CRSP research. It is also apparent from the EEP review that the research results from the project will be taken into consideration by in-country officials in the planning and implementation of school feeding and other nutritional programs. The number of government personnel who devoted a Saturday to the project site review was impressive. The PIs have done an excellent job of identifying key government officials and getting them actively involved in this project. The depth of this involvement includes the willingness to secund staff to the project as well as providing equipment and other assistance. The EEP is also impressed with the integration of host-country collaborators in the project. During our meeting with all the East African collaborators attending the Tarangire Conference, it was made clear that this was the most integrated project in the region. All African collaborators felt fully vested in the project. The extent of this integration can be noted in the appointment of the field coordinator, Dr. Edith Mukudi, as a post-doctoral scholar at UCLA in addition to her coordinator appointment at Embu.

Central Asia

The livestock development and rangeland conservation (LDRCT) project has been quite good at the training of U.S. personnel. There are currently M.S. students at UC Davis who are being trained by this project. Currently, there are no Uzbekistan, Turkmenistan, or Kazakhstan students in training. The project has done a better job at short-term training. Workshops have been held on participatory rural survey methods, human nutrition survey methods, farmer-to-farmer communication, range condition assessment methods, and the use of global positioning systems. In addition, Dr. Nasyrov of Uzbekistan was trained by staff at the USDA-ARS Forage and Range Research Laboratory, Logan, Utah and the U.S. Sheep Experiment Station, Dubois, Idaho, in the installation, operation, maintenance, and trouble-shooting of Bowen ratio equipment. Dr. Saliendra (USDA-ARS) and Dr. Nasyrov then provided on-site training on equipment operation and data processing to collaborating scientists in Kazakhstan and Turkmenistan.

Host-country institutions in Uzbekistan, Kazakhstan and Turkmenistan have, however, benefited from the receipt of Bowen ratio equipment and computers. It is unclear if these host institutions are anything more than data collection facilities. The EEP is concerned that no host-country personnel have been identified for graduate training in the U.S. It is also unclear how the data collected is being disseminated in collaborating countries. Without active host-country collaborator involvement, the long-term sustainability of this CRSP project is weak.

The livestock sector economic reform project (LSER), whose PIs have broadened the definition of host-country to include

collaborators from Russia as well as Kazakhstan, has a very narrow training component. There is no long-term training and short-term training has consisted of two weeks of training in the U.S. of a research institute staff member in transcervical and intrauterine artificial insemination of sheep and a U.S. veterinarian, Dr. Mary Gessert, travelling to Kazakhstan to train cooperative farm and research institute staff in lamb necropsy techniques and the management of preparturient ewes and newborn lambs. There has been no identification of either U.S. or host-country students for graduate training, although the Graduate School and the College of Agriculture at the University of Wisconsin have contributed three half-time graduate Research Assistants to the project.

The EEP is concerned that most of the training is to take place through contact with U.S. scientists. The PIs state in the 1998 annual project report that "[o]ur socioeconomic regional collaborators are accomplished senior scholars. However, they have limited exposure to western research methods. Thus there is an element of ongoing training as we work closely with them on design of the questionnaire and analysis of the data." The same appears true for institutional building. Exposure to western policies, methods, and techniques are the extent of this component of the project. The EEP would certainly like to see less passive efforts in training and institutional development.

LATIN AMERICA

The livestock-natural resource interface (PLAN) project has been quite successful in its training and institutional development, particularly given the hefty cut of two-thirds of their budget in 1998. What is impressive about this project is the degree of institutional development within the region among the host-country collaborators. The EEP is especially pleased to note the PIs' priority on training and institutional development under severe budget constraints. Planning for the regional and global GL-CRSP activities is made more sustainable with the attendance of host-country coordinators at the Tarangire Conference.

Six students have been participating in long-term training at the University of Wisconsin-Madison. It is unclear how many of these students are from project host-countries. There is an additional student receiving project support for his B.S. degree at the University of Guadalajara, Mexico.

Due to the severe budget cutbacks there was only one short-term training workshop during 1998. This workshop, organized by the projects Bolivian partner, CIEC, was convened to delineate an explicit educational strategy for the Bolivian site.

GENDER ISSUES

There are three distinct issues that the EEP addressed under gender. One, the inclusion of gender as a component of the research project. Here the task is to assess the degree to which each project incorporates into their research design an awareness of the potential socioeconomic differences between men and women in their study population and to ensure that women are not negatively affected by the project. The second issue is the long-term (graduate and undergraduate) and short-term (workshops, short courses, etc.) training of U.S. and host-country women. Third, is the inclusion of U.S. and host-country women scientists on the research teams.

It is clear from this EEP review that projects addressed gender issues in numerous ways during project design and implementation. For some projects, gender issues were limited to training and participation issues. In other cases, gender issues were limited to the project's impact on women and children in the population under study. Of the seven GL-CRSP projects, three, the pastoral risk management project (PRMP), the child nutrition project (CNP), and the livestock-natural resources interface (PLAN) project, broadly addressed gender issues during the design and implementation of the project.

Women Scientists

Here the record of the projects is spotty with some projects doing an excellent job of including U.S. and host-country women on the team, while other projects have no women scientists. The ME should be commended for their incorporation of U.S. professional women in the GL-CRSP program. Women are well represented on both the EEP and PAC. There is greater variation in the incorporation of U.S. professional women in the projects. Out of seven projects, two have women as co-PIs (the child nutrition and integrated modeling and assessment system (IMAS) projects). U.S. professional women collaborators range from none (the livestock sector economic reform (LSER) and livestock early warning system (LEWS) projects) to six (the integrated modeling and assessment system (IMAS) project). There is definitely room for improvement here. A concerted effort needs to be made by <u>all</u> projects to include U.S. professional women as collaborators actively participating in project and year-end workshops.

There is also a great variation in the incorporation of host-country professional women in the projects. Host-country collaborators range from none (the pastoral risk

management project) to nine (the livestock-natural resources interface (PLAN) project). There are also host-country professional women participating in other aspects of the project. These professional women include interpreters and liaisons (the livestock development and rangeland conservation (LDRCT) project) and the senior field staff resident at Embu (child nutrition project).

Training of Women

There is only one project, the livestock sector economic reform (LSER) project, which has failed to identify women for either short-term or long-term training. The remaining six projects have done an acceptable job of identifying women for long-term training. Of these projects, only two, the integrated modeling and assessment system (IMAS) and the child nutrition projects have identified both U.S. and host-country women for short-term training. Four of the projects, the integrated modeling and assessment system (IMAS) project, the livestock early warning system (LEWS) project, the livestock development and rangeland conservation (LDRCT) project, and the livestock-natural resources interface (PLAN) project, failed to identify whether U.S. or host-country women participated in short-term training. The remaining two projects, the pastoral risk management and child nutrition projects, provided short-term training for outreach organizations and field workers, respectively.

Research Incorporation and Project Participation at the Producer Level

With the exception of one project, the GL-CRSP program and its funded projects have done an adequate job of incorporating producer level women in the research design. All of the projects in some manner identified women and their households as end-users. In addition, the livestock development and rangeland conservation tools (LDRCT) project, the integrated modeling and assessment system (IMAS) project, and the pastoral risk management project (PRMP) have all included women end-users in their data collection activities. These activities range from a survey of nutritional status of women and children in the integrated modeling and assessment system (IMAS) and livestock development and rangeland conservation tools (LDRCT) projects to the mapping of women's risk in the pastoral risk management project (PRMP). The Ugandan portion of the child nutrition project is the only project that has women participating at the producer level. These women will be raising rabbits for household consumption. In years three and four of the child nutrition project, Embu mothers will be included in the project to establish a sustainable, community-based school-feeding program. The livestock sector economic reform (LSER) project, on the other hand, made no attempt to address gender issues either in the policy analysis or in the household surveys.

RESPONSE TO EEP STRATEGIC RECOMMENDATIONS 1996/1997

The EEP has reviewed the strategic recommendations made in the 1996 – 1997 EEP report and notes that many of the issues have been addressed elsewhere in the present report. Those recommendations not addressed elsewhere are considered here:

Institutional Partners, Collaboration and Cross-Disciplinary Teams

1996/1997 Recommendation: The GL-CRSP must continue to explore opportunities for interCRSP linkages in line with USAID priorities.

The GL-CRSP has or is pursuing linkages with the SANREM and BASIS CRSP and the EEP applauds this as a means of extending resources and reducing redundancy.

Small Grants

1996/1997 Recommendation: The intent of the small grant component needs further clarification and justification.

The EEP remains concerned that the purpose for the small grant component has not been clarified. No justification could be found in any material available to the EEP for this component. The EEP has learned that small grants were made to the Latin American (PLAN) project in 1997/98 and for some poultry research in Indonesia but only limited information about this aspect of the GL-CRSP is known to the EEP. The EEP believes there is merit in a small grants program to provide some contingency resources for urgent needs as they occur. A clear and transparent process for allocation of these resources should be known to all PIs, and standard reporting mechanisms should be mandated as well.

Program Administration and Management

1996/1997 Recommendation: The EEP notes that no process is in place to bring in new participants. Based on the success of the reengineering process used by the SR/GL-CRSP, the EEP recommends that this process be used in the future as a mechanism to bring in new regions and/or new problem models. The EEP applauds the process by which current projects were brought together to form the GL-CRSP in the reengineering phase.

The EEP reiterates its praise for the process by

which the current projects were brought together to form the GL-CRSP in the reengineering phase. However, the EEP remains concerned about the process to bring in new participants in the future if funds become available. It is noted that full funding of the grant renewal included projects in Mongolia, Indonesia, and the Russian Federation. The ME and PAC should have in place the process by which new participants will be identified if the higher budget allocations become a reality.

1996/1997 Recommendation: The EEP recommends that some sort of presence be continued in Kenya and Bolivia, and that efforts be initiated to move back into Indonesia (for example with a small grant), if this is at all possible. Perhaps the Global Bureau at USAID/Washington or the cognizant REDSO office can be drawn into these discussions in an advocacy role.

The reengineering process was open and fair, and we commend the GL-CRSP leadership for this process. Both Kenya and Bolivia have a presence and a small grant was made in 1997/98 for work in Indonesia. We do disagree, however, with USAID Washington on the low priority given to a GL-CRSP presence in Latin America. The Latin American project should be supported and every effort made to increase the funding of this project to its requested amount.

1996/1997 Recommendation: When the grant is extended, the amount of management input and support resources available in the ME office needs to be reassessed. It is recommended that there be at least 1.75 FTE in the Director and Assistant Director positions and an appropriate level of support staff.

The EEP notes the current grant renewal for 1998-2003 includes 1.8 FTE for the Director and Assistant Director. The EEP is concerned, however, that the support staff is overextended at this time. Given the EEP's recommendation that the ME take on the responsibilities of identifying additional funding sources for the GL-CRSP, it is important that the ME have the support necessary to carry out these activities. The work of the support staff is exemplary, but the EEP is concerned that burnout could occur.

1996/1997 Recommendation: Transaction costs in terms of reporting and program policies should be kept to a minimum.

The sum of the following line items [TC, PAC, EEP, Grant Extension] which appear to be transaction costs for this CRSP total $228,725 or less than 8% of the total 1997/98 budget. This does not appear to be excessive.

1996/1997 Recommendation: The definition and role of the Advisory Panel and EEP needs to be clarified.

The EEP and PAC met at the Tarangire Conference and discussed their roles in the GL-CRSP. The PAC will take primary responsibility for directing/critiquing the

technical direction of the projects. The EEP members will provide evaluations in each member's area of expertise and for overall program management, structure, and operations. Together, the EEP and PAC will provide technical oversight of the GL-CRSP.

1996/1997 Recommendation: For maximizing efficiency, the October fiscal year is awkward. For example, in Central Asia, this coincides with the beginning of winter. With the expansion of SR/GL-CRSP out of the tropics, an earlier fiscal year is more appropriate.

The EEP encourages the ME to work with PIs to determine the appropriate fiscal year for the best interest of the projects and GL-CRSP.

STRATEGIC RECOMMENDATIONS

PROGRAM OPERATIONS

- The EEP reiterates the importance of the participation of all U.S. and host-country collaborators in the preparation of the annual report and yearly workplans. These participatory activities strengthen the multidisciplinary and collaborative relationships component in all the GL-CRSP projects.

- The EEP recommends that the East African projects be used as a model for regionalization in other areas of the world in which the GL-CRSP is active. The EEP also recommends that under current budget constraints a regionalization model needs to be developed that is circumscribed in scope but expansive in the integration of regional activities. The Latin American project provides another model for regionalization in spite of limited funds.

- The EEP is concerned about the willingness of individual PIs to regionalize. Without a strong investment in regionalization within the individual projects, this activity is most likely to become no more than a discussion at the annual conference rather than an active component of each project. The EEP recommends the identification of a coordinator for each region and suggests that the regional coordinator NOT be one of the project PIs.

- The EEP recommends that clear implementation steps be delineated by the ME for the regionalization and globalization activities now that the regional research strategies have been formulated and an action plan composed for the East African and Latin American regions. The EEP also recommends the identification of additional funds for these activities. There is also a need to get the Central Asian projects to formulate a regional action plan. The EEP is concerned about the lack of coordination between the two Central Asian projects.

- The EEP recognizes the importance of workshops as an effective means of using scarce funds to train project workers and improve human capacity and suggests the continued use of this training component.

- In order to increase regionalization and globalization efforts, the EEP recommends the cross-participation of project personnel in other projects' workshops in the region and where appropriate, such as the GIS Training Workshop, that an invitation be extended to all projects in the GL-CRSP.

- The EEP notes that the projects did not plan their research activities in direct relation to Mission priorities and recommends that PIs make a greater effort to align their project activities with the Missions SOs in order to attract potential buy-ins. The EEP recognizes the difficulties encountered in obtaining Mission SOs and suggests the ME and USAID Washington (through the Office of Agriculture and Food Security) assist the PIs in obtaining this information in the future.

Management of Research

- In order to further regionalize and globalize, the EEP recommends that host countries and regional co-leaders, as well as the U.S. PIs, play an active role in the Technical Committee deliberations. This participation would also contribute to project sustainability goals.

- The EEP suggests that for ease of review for both PIs and evaluators, the workplans should include a table with "goals" on the left-hand side and "comments" on the right-hand side. Examples of comments would be: "done", "in progress", removed/changed because..." Also for ease of review, the PIs should list the duties of each collaborator, both the U.S. researchers and the host-country collaborators, as was done by the pastoral risk management project (PRMP) in workplan.

- The EEP recommends that all projects should be careful to split duties and obligations evenly between the U.S. and the host countries. The projects should use the host-country capacities to their fullest for improved sustainability over time.

RELATIONSHIP OF GL-CRSP WITH EXTERNAL GROUPS

- The EEP is impressed with the partnership network with NGOs which has been developed by the pastoral risk management project (PRMP) and the livestock-natural resources interface (PLAN) project. The proactive effort of these projects to develop networks is exemplary, and the EEP cites them as examples of what other projects might do to improve their effectiveness in research and technology transfer.

- The numerous efforts of GL-CRSP projects to leverage outside funding is exemplary. The EEP notes that several projects cite leveraged external funds from independently funded activities (some of which predate the GL-CRSP) that parallel in some way the project making the citation but which would nevertheless exist in the absence of the CRSP. For leveraged resources in this category, the EEP encourages PIs to detail the relationship of such activities to those of their GL-CRSP projects in their annual report.

- Those projects that have experienced difficulties due to core funding shortfalls need to make more of an effort to leverage external funds to supplement their budgets and expand their operational capabilities. The EEP recommends that PIs understand the expectation that core funds must be supplemented as a matter of normal operational procedures to accomplish the goals of the GL-CRSP.

- The EEP notes with regret that no USAID mission or regional buy-ins are reported to date. PIs should seek opportunities for buy-ins where possible. To do so will require assistance from the ME to make appropriate introductions to mission personnel. It is especially noted that good buy-in opportunities exist in the East Africa Region.

- The EEP applauds the initial contacts with IFAD that may lead to substantial funding opportunities for GL-CRSP projects, especially in East Africa and Central Asia.

- The EEP recommends that as the GL-CRSP evolves, the PIs continue to maintain open and frank communication with relevant partners in the international research and development community who are clear stakeholders in the outcome of this CRSP.

- The EEP encourages the ME and the PIs to do all they can to support and strengthen global relations with the IARC system. Particularly strong opportunities already exist with ILRI. The EEP encourages the GL-CRSP to seek similarly synergistic relationships with other IARC institutions – especially targeting ICARDA, ISNAR, and ICRAF – and exploring other opportunities with IARC institutions where there are potential overlaps in mission with the GL-CRSP.

- The EEP expects to see more evidence of fully integrated collaboration in the future, especially in the development of workplans and the reporting of research activities and early results.

Dissemination of Research Results

- The EEP believes that dissemination must be an intentional part of the workplan developed each year by component projects of each of the CRSPs. This is especially important in this era of accountability and heightened expectations of impact in a user community or at the decision-maker (policy) level. The EEP regrets that early efforts to plan dissemination activities have been modest at best.

- Dissemination of results generated by CRSP research must be targeted at an array of audiences including scientific peers, the development community, policy makers, and user-level populations. Dissemination of results can and should take many forms spanning a spectrum that includes formal professional journal articles, popular press articles, newsletters, radio/TV and other electronic media, workshops, and demonstration activities for end-users.

- The EEP recommends that efforts be devoted each year to broad dissemination of research results as a part of the workplan. Furthermore, the EEP recommends that annual budgets developed by project PIs demonstrate commitment to dissemination by allocation of resources to this task via a line item on the project budget.

- The EEP reminds GL-CRSP PIs that the CRSP model is explicit about mutual benefits both in cooperating host countries and in the United States. The EEP recommends that PIs consider ways by which CRSP benefits might come back to the US and actively pursue this “reverse flow” of technology.

- The EEP appreciates the serious consideration of the policy component of the work that the GL-CRSP is doing and encourages each project to follow through on plans to assure the engagement of policy-makers in the utilization of results that flow from the planned research. It is especially important that the PIs draw policy makers into discussions relative to the research findings. There is probably no greater nor more important outreach activity than in the policy arena if the GL-CRSP is to hone an enduring impact on the nation and region in which it is operating.

- The EEP commends the ME for its inclusion of USAID Mission, Regional and Washington personnel at the Tarangire Conference. The EEP recommends that USAID personnel be included at all subsequent conferences. In addition, it is important that the Mission and Regional personnel be kept informed of the activities of GL-CRSP projects in their countries and regions. The EEP recommends the dissemination of country/region-specific project and program updates at appropriate intervals.

Training and Institutional Development

- The EEP notes that of the seven projects, only three (pastoral risk management, livestock early warning system and child nutrition projects) stand out for their training of host-country researchers and recommends a concerted effort by the remaining four projects to identify host-country collaborators for training. More host-country collaborators need to be identified for training if this project is to be sustainable.

- The EEP is concerned that provisions have not been made to train host-country collaborators in the modeling methods or data collection techniques necessary to update or refine the models being developed by several projects (IMAS, LDRCT, LEWS). This current lack of integration of modeling into the training component lessens the potential for project sustainability if the CRSP moves or terminates.

- The EEP is concerned that only four projects (PLAN, PRMP, LEWS, and CNP) stand out for the potential impact on host-country institutional development. Again, the EEP recommends that all projects identify and implement an institutional development component to their projects.

GENDER

- The EEP recommends that every effort be made to identify and incorporate host-country and U.S. women scientists in the projects. The effort to date has been very uneven.

PROJECT SPECIFIC RECOMMENDATIONS

CENTRAL ASIA

- The EEP notes that there is potential for GL-CRSP led activities in Central Asia to form mutually beneficial collaborative relationships with ILRI and urges that discussions proceed towards this end.

- The EEP is concerned about the apparent lack of collegiality evident in this region; efforts must be made to bring local partners into a full collaborative partnership and to document it in the next year.

- The EEP recommends that the livestock development and rangeland conservation tools (LDRCT) project perform a more detailed survey/monitoring of the diets consumed in the southern region of Kazakhstan to determine the cause of the anemia found there. They should also address the issue of whether it is feasible to take CO_2 measurements from various areas with a given country.

- The EEP notes that the livestock development and rangeland conservation tools (LDRCT) project has taken some steps towards forging partnerships with NGOs but recommends that much more be done to evolve the tentative relationship into genuine working partnerships.

- The EEP notes that the livestock sector economic reform (LSER) project has forged substantial partnerships with Russian collaborators rather than collaborators from Central Asian countries in which the project is active. The EEP is concerned that these partnering relationships may damage or inhibit collaborative opportunities in Central Asian countries.

- The EEP feels the livestock sector economic reform (LSER) project needs to practice a more open policy regarding its research and research methods. There is

also a need for the Central Asian projects to formulate a regional action plan. The EEP is concerned about the lack of coordination between the two Central Asian projects.

- The EEP recommends that the livestock sector economic reform (LSER) project immediately identify women for both short-term and long-term training and incorporate producer level women in the research design.

EAST AFRICA

- The EEP commends the proactive effort of the pastoral risk management project (PRMP) to develop an extensive array of NGO partners, and the stated intention of the project leadership to create an outreach component using this partnership network. Other GL-CRSP projects are urged to study this model as an example of what might be done in other regions to improve the effectiveness of dissemination.

- The pastoral risk management project (PRMP) itself has suggested the need to monitor environmental conditions around the refugee feeding centers, the EEP agrees that this would be useful.

- The EEP commends the pastoral risk management project (PRMP) for its detailed accounting of their research activities to date. The EEP recommends that other project PIs follow this pattern in their annual reports.

- The integrated modeling and assessment system (IMAS) project needs to clarify how they are providing for project sustainability. The fact that they will be "leaving" Tanzania to focus on Kenya this coming year gives them the opportunity to keep track of activities in Arusha and make sure the monitoring continues to make what the project started there sustainable.

- The integrated modeling and assessment system (IMAS) project appears to the EEP to be operating in a conventional research mode without appropriate attention to partnering and development needs in the area in which it is active. The EEP recommends that project leaders integrate East Africans into the project as true collaborators and fuller, more intentional attention be given to the adoption of the collaborative mode implicit in the CRSP model.

- The livestock early warning system (LEWS) project has given a general outline of how they will make their project sustainable, however the EEP would like to see evidence of exactly how this will happen, including efforts to link to the FEWS network (see next recommendation).

- The EEP recommends that the livestock early warning system (LEWS) project seek out linkage opportunities with the USAID-funded FEWS which is also active in the region.

- The child nutrition project (CNP) seems to be on track but the EEP feels it could not tolerate any further funding cuts. Given the importance of providing justification for continued livestock research in general, the child nutrition project in Kenya may need additional funding to help it cover the costs of treating the children who are found to be suffering from high parasite loads and illnesses.

- The EEP cites the child nutrition project for its exemplary degree of genuine collaboration and integration with host-country partners. Other component projects of the GL-CRSP would do well to model their collaborative relationship after the structure that has been put in place by this project team.

LATIN AMERICA

- The EEP commends the livestock-natural resources interface (PLAN) project for the remarkable array of community-based partnerships which it has developed. These are key to sustainability and important across the region. Furthermore, the EEP commends this project as exemplary in the mode by which it has forged a strong collaborative network in the region.

- The livestock-natural resources interface (PLAN) project has been creative with what small amount of funding it currently has and the EEP would like to see it funded at the same level as the other projects in the program.

APPENDICES

GLOBAL LIVESTOCK CRSP EXTERNAL EVALUATION PANEL REVIEW
USAID SCOPE OF WORK, SEPTEMBER 1998

Program Operations

- How effective, managerially and technically, is the regional research design?
- Describe the value of project workshops and the strength of regional host country linkages.
- How well do research activities meet or integrate with the Global Bureau's and other USAID Missions' strategic objectives and intermediate results?

Management of Research Program

Evaluate and comment on the:
- degree of host country partner participation
- usefulness of the Technical Committee
- effectiveness of workplans
- evidence of modifications to workplans and budgets when required
- responsiveness of subgrantees to reporting requirements
- progress toward reaching goals and objectives since last EEP review

Research Program

- evaluate complementarity of current research program and proposed research with priorities of regional institutions (such as ASARECA)
- evaluate progress in response to last EEP
- describe any new research results
- determine impact of research achievements on US and HC producers and/or consumers
- describe progress relative to objectives listed in workplans and to similar research worldwide
- cite reasons for deviation from workplans
- describe the quality of the research
- evaluate quality of subgrant management by subgrantee institutions
- determine degree of collaboration between US and HC scientists
- assess contributions of collaborating institutions
- indicate evidence of host country institutionalization (how have research methodologies and technologies been incorporated into host country institutions?)
- assess balance between domestic and overseas activities with respect to program objectives
- comment on the working relationship between the SR-CRSP and IARCs
- assess level of diversity of partnerships at project level

Characterize Relationship and Degree of Interaction with NGOs, PVOs, IARCs, other donors and private sector in terms of:

- level of collaboration
- OYB transfers, buy-ins, or other leveraged funding
- pro-activity of subgrantees in establishing linkages and consequences of such linkages
- contributions to wider international research and development community

Dissemination of Research Results:

Determine quality of:
- publications in peer reviewed journals and other publications by US and HC scientists
- mechanism for dissemination of technology transfer participatory research process for effectively promoting access to and exchange of research results
- integration of projects within and across research sites

Training and Institutional Development:

Determine:
- impact on host country institutions
- impact on sustainability of CRSP research
- quality of training plans, development and management by PIs

Impact on end-users, host country institutional partners, communities where research is being conducted, and on US agriculture:

- demonstrate evidence that host country programs will evolve and develop sustainability if CRSP moves or terminates
- evaluate developmental relevance on a global basis and for specific host countries
- assess regional impacts of research

Gender

- How were gender issues taken into account during project design and implementation?
- Has a gender component been incorporated into all activities? If not, why not?
- How have U.S. professional women been incorporated into the CRSP program?
- What are the contributions of each research project in supporting participation by US and host country women at the scientist, training and producer levels?

Buy-ins

- Give examples of US institution proactivity in seeking buy-ins and indicate levels of university support.

SMALL RUMINANT/GLOBAL LIVESTOCK CRSP
DIRECTOR'S APPROVED BUDGET
YEAR 19 - 1997/98

Subgrants	Principal Investigator	Region	Amount
Utah State University	Layne Coppock	East Africa	$325,000.00
University of Wisconsin	Kenneth H. Shapiro	Central Asia	$350,000.00
UC Davis	Emilio Laca	Central Asia	$350,000.00
University of Wisconsin	Tim Moermond	Latin America	$100,000.00
UCLA	Charlotte Neumann	East Africa	$325,000.00
Texas A&M University	P. T. Dyke	East Africa	$325,000.00
Colorado State University	Michael Coughenour	East Africa	$325,000.00
Subtotal New Programs			$2,100,000.00
Program Enhancement			$0.00
Management Entity			$399,733.00
Student Fellowship			$18,000.00
Research Support			
Workshops & Conferences			$25,100.00
Meetings-Other			$12,550.00
Technical Committee			$37,650.00
Small Grants			$32,000.00
Publications			$12,550.00
Program Administrative Council			$37,650.00
EEP			$42,875.00
Conferences			$62,750.00
Russia Project			$85,905.00
Grant Extension			$110,550.00
Subtotal Research Support			$459,580.00
Total			**$2,977,313.00**

GL-CRSP / ILRI MEETING
FRIDAY, DECEMBER 4, 1998

8:45 - 9:00 AM	Arrival of Guests – Conference Room	
	OPENING SESSION	
9:00 - 9:20 AM	Welcome:	Dr. Hank Fitzhugh, Director General International Livestock Research Institute
9:25 - 10:40 AM	PRESENTATIONS	
	CONSERVING BIODIVERSITY IN SPATIALLY EXTENSIVE PASTORAL ECOSYSTEMS OF EAST AFRICA.	
	Speaker:	Dr. Robin Reid Senior Ecologist, Socioeconomics Unit
	ILRI's collaborators in the other three CRSP Projects are based in Ethiopia so they will not be present at this meeting. Ralph von Kaufmann, Robin Reid and Jean Ndikumana will respond to any questions on behalf of their colleagues.	
	ASARECA CRISIS MITIGATION PROJECT	
	Speaker:	Dr. Jean Ndikumana ASARECA - AARNET Coordinator
	COMMUNITY-BASED ANIMAL HEALTH DELIVERY PROJECT	
	Speaker:	Dr. Chip Stem Tufts University
	RESEARCH FOR DEVELOPMENT OF PASTORAL SYSTEMS OF THE GREATER HORN OF AFRICA	
	Speaker:	Dr. Ralph von Kaufmann Director, External Relations
	Administrative arrangements for CRSP and ILRI	
	Speaker:	Dr. Hugh Murphy Financial Officer
10:40 - 11:00 AM	*Coffee Break*	
11:00 - 11:45 AM	ROUNDTABLE DISCUSSION	
12:00 - 1:00 PM	TOUR OF FACILITIES (time permitting)	
1:00 - 2:00 PM	*Luncheon at ILRI*	
2:00 PM	Departure for Embu	

CHILD NUTRITION PROJECT
GLOBAL LIVESTOCK CRSP
FRIDAY, DECEMBER 4, 1998

4:00 - 6:00 PM	Arrival at Izaak Walton Hotel, Embu
6:00 - 7:00 PM	Informal Reception and Discussion
7:00 - 9:00 PM	Dinner Izaak Walton Hotel

SATURDAY, DECEMBER 5, 1998

PRESENTATIONS - *Izaak Walton Conference Room*

8:45 - 9:15 AM	Introduction & Welcome:	Dr. Nimrod Bwibo Dr. Charlotte Neumann Co-Principal Investigators GL-CRSP Child Nutrition Project
9:15 - 9:30 AM	HISTORY OF NUTRITION PROBLEMS - EMBU DISTRICT Speaker:	R. Ngaruro, BS
9:30 - 9:45 AM	NUTRITION AND HEALTH PROBLEMS AND PROGRAMS FOR SCHOOL CHILDREN Speaker:	C. Nyaga, Ministry of Education
9:45 - 10:00 AM	BACKGROUND OF PROJECT AND PROJECT DESIGN Speaker:	C. Neumann, MD
10:00 - 10:20 AM	FEEDING INTERVENTION AND FOOD INTAKE MEASUREMENTS Speaker:	C. Gewa, MSc.
10:20 - 10:30 AM	*Coffee Break*	

10:30 - 10:50 AM	COGNITIVE MEASURES: CLASSROOM AND PLAYGROUND OBSERVATION, SCHOOL PERFORMANCE, AND ATTENDANCE	
	Speaker:	M. Kamore, MA
10:50 - 11:10 AM	NUTRITIONAL ASSESSMENT: ANTHROPOMETRY, BIOCHEMISTRY MORBIDITY, SOCIOECONOMIC STATUS	
	Speaker:	M. Grillenburger, MSc.
11:10 - 11:30AM	DATA MANAGEMENT	
	Speaker:	E. Mukudi, Ph.D.
11:30 - 11:45 AM	QUESTIONS & ANSWERS	
12:00 - 2:30 PM	FIELD SITE VISIT: *Kyeni South* Visit will include food preparation area, schools and taste test of Githeri	
2:30 PM	Departure for Nairobi	

GLOBAL LIVESTOCK CRSP YEAR-END CONFERENCE
TARANGIRE NATIONAL PARK
TANZANIA

SUNDAY, DECEMBER 6, 1998

5:00 PM — Arrival at Tarangire National Park, Tanzania

6:00 – 7:00 PM — CONFERENCE REGISTRATION

8:00 – 9:30 PM — RECEPTION

MONDAY, DECEMBER 7, 1998

8:15 - 8:45 AM — CONFERENCE REGISTRATION

OPENING PLENARY

9:00 - 9:30 AM — Overview: Dr. Montague Demment, Program Director, Global Livestock CRSP, University of California, Davis

9:30 - 10:30 AM — Keynote Speaker: Dr. Jim Ellis, Natural Resource Laboratory

"EXTENSIVE GRAZING SYSTEMS: PERSISTENCE UNDER POLITICAL STRESS AND ENVIRONMENTAL RISK"

10:30 - 11:00 AM — BREAK

PRESENTATIONS: GL-CRSP ANNUAL REPORTS

11:00 - 11:40 AM — *INTEGRATED MODELING AND ASSESSMENT FOR BALANCING FOOD SECURITY, CONSERVATION, AND ECOSYSTEMS INTEGRITY*

Primary Speaker: Dr. Michael Coughenour, Colorado State University

11:40 – 12:20 PM — *EARLY WARNING SYSTEM FOR MONITORING LIVESTOCK NUTRITION AND HEALTH FOR FOOD SECURITY OF HUMANS IN EAST AFRICA*

Primary Speaker: Dr. Paul Dyke, Texas A&M University System

12:20 – 2:00 PM LUNCH

2:00 – 2:40 PM *IMPROVING PASTORAL RISK MANAGEMENT ON EAST AFRICAN RANGELANDS*
Primary Speaker: Dr. Layne Coppock
Utah State University

2:40 – 3:20 PM *ROLE OF ANIMAL SOURCE FOODS TO IMPROVE DIET QUALITY, GROWTH AND COGNITIVE DEVELOPMENT IN EAST AFRICAN CHILDREN*
Primary Speaker: Dr. Charlotte Neumann
University of California, Los Angeles

3:20 – 3:30 PM BREAK

3:30 – 4:00 PM REGIONAL PRESENTATIONS
DEVELOPING A REGIONAL PLAN FOR THE EAST AFRICA GL-CRSP TEAMS
Speakers: Dr. Paul Dyke
Chair, GL-CRSP Technical Committee

4:00 – 4:30 PM *A-AARNET AND GL-CRSP PARTNERSHIP: IMPLEMENTING THE ASARECA LIVESTOCK COLLABORATIVE RESEARCH AGENDA*
Speaker: Dr. Jean Ndikumana
International Livestock Research Institute
Coordinator, A-AARNET

4:30 – 5:15 PM ADMINISTRATIVE MEETINGS
Meeting 1: EEP & East Africa Principal Investigators
Meeting 2: PAC Meeting

5:00 - 7:00 PM WILDLIFE VIEWING TOURS

7:00 – 8:00 PM TEAM MEETINGS
Team 1: LEWS Lead PI: P. Dyke
Team 2: Child Nutrition Lead PI: C. Neumann

TUESDAY, DECEMBER 8, 1998

6:00 - 8:30 AM WILDLIFE VIEWING TOURS

9:00 - 9:40 AM PRESENTATIONS: GL-CRSP ANNUAL REPORTS

IMPACTS OF ECONOMIC REFORM ON THE LIVESTOCK SECTOR IN CENTRAL ASIA

Speakers: Drs. Kenneth Shapiro & Anatoly Khazanov
University of Wisconsin - Madison

9:40 - 10:20 AM *INTEGRATED TOOLS FOR LIVESTOCK DEVELOPMENT AND RANGELAND CONSERVATION IN CENTRAL ASIA*

Speaker: Dr. Emilio Laca
University of California, Davis

10:20 - 10:40 AM REGIONAL PRESENTATION

DEVELOPING A REGIONAL PLAN FOR THE CENTRAL ASIA GL-CRSP TEAMS

Speaker: Dr. Kenneth Shapiro

10:40 - 11:00 AM BREAK

11:00 - 11:40 AM *LIVESTOCK-NATURAL RESOURCE INTERFACES AT THE INTERNAL FRONTIER*

Primary Speaker: Dr. Michel Wattiaux
University of Wisconsin - Madison

11:40 – 12:00 PM PLENARY SESSION

ALIGNING THE GL-CRSP WITH USAID'S STRATEGIC OBJECTIVES

Conclusions: Dr. Montague Demment, Program Director
Global Livestock CRSP

12:00 – 1:30 PM LUNCH

USAID PRESENTATIONS

1:30 – 2:30 PM Speakers: Margaret Brown
USAID Mission to Ethiopia

Dennis Weller
USAID Mission to Kenya

Dennis McCarthy
REDSO

Joel Strauss
USAID Mission to Tanzania

REGIONAL MEETINGS

2:30 – 3:30 PM ROUNDTABLE DISCUSSION East Africa Project Leaders
East Africa Governmental Leaders
REDSO
USAID Missions

2:30 – 3:30 PM ROUNDTABLE DISCUSSION Latin America Project Leaders

2:30 – 3:30 PM ROUNDTABLE DISCUSSION Central Asia Project Leaders
Central Asia Governmental Leaders

3:30 – 4:00 PM ADMINISTRATIVE MEETINGS
EEP & USAID personnel --Game Room

3:30 - 6:00 PM WILDLIFE TOURS

7:00 - 8:00 PM TEAM MEETINGS
Team 1: IMAS --GAME ROOM Lead PI: M. Coughenour
Team 2: PRMP Lead PI: L. Coppock

ADMINISTRATIVE MEETINGS
EEP & Latin America Principal Investigators -- Dining Room

WEDNESDAY, DECEMBER 9, 1998

6:00 – 11:30 AM WALKING TOURS OF TARANGIRE

12:00 - 1:30 PM LUNCH

PRESENTATIONS

1:30 - 2:00 PM *PRODUCTIVITY, STABILITY AND DIVERSITY IN EXTENSIVE PASTORAL ECOSYSTEMS: A MODELING APPROACH*

Speaker: Dr. Norman Owen Smith
University Wits, South Africa

2:00 - 2:30 PM *ANALYSIS OF WILDLIFE DISTRIBUTION AND LAND UTILIZATION IN THE TARANGIRE ECOSYSTEM AS A CONTRIBUTION TO A SUSTAINABLE MANAGEMENT OF THE AREA*

Speaker: Drs. Rosella Rossi[1] & Guido Tosi[2]
[1]Progetto Oikos, Milan, Italy
[2]University of Insubria, Varese, Italy

2:30 - 2:45 PM BREAK

2:45 - 3:15 PM *APPROPRIATE AND EFFECTIVE WAYS TO EVALUATE THE IMPACT OF RESEARCH*

Speaker: Dr. Jerry Stuth
SANREM CRSP/Texas A&M University

3:15 - 3:45 PM *POLICY AND DESIGNING AN EFFECTIVE PROJECT*

Speaker: Drs. Don Brown & Isaac Minde
ECAPAPA - ASARECA

DEMONSTRATION

3:45 -4:15 PM *NIRS TECHNOLOGY*

Presenter: Dr. Jerry Stuth

4:15 - 4:45 PM *ALMANAC CHARACTERIZATION TOOLS*

Presenter: Dr. John Corbett

4:45 - 6:00 PM ILRI /GL-CRSP MEETING

PASTORAL SYSTEMS INITIATIVE

Drs. Ralph von Kaufmann & Jean Ndikumana
East Africa Principal Investigators

SLIDE PRESENTATION

7:00 - 8:00 PM Joyce Turk, USAID Program Officer

"WILDLIFE IN AFRICA: AN ARTIST'S PERSPECTIVE"

8:00 - 9:00 PM DINNER

THURSDAY, DECEMBER 10, 1998

6:00 – 8:30 AM WILDLIFE TOURS

OPENING PLENARY

9:00 – 9:30 AM *THE VALUE OF A GLOBAL PLAN: A USAID PERSPECTIVE*

Speaker: Mr. Tracy Atwood
USAID, Global Bureau

DEVELOPING A GLOBAL PLAN AND GLOBAL LOGICAL FRAMEWORK

Speaker: Dr. Montague Demment, Program Director
Global Livestock CRSP

GROUP BREAKOUT SESSIONS

DEVELOPING GLOBAL OBJECTIVES

9:30 - 11:30 AM Group 1: Environment
Group 2: Economic Growth
Group 3: Human Nutrition
Group 4: Policy

PLENARY SESSION

11:30 – 12:10 PM Synthesis of Work Group discussions
(10 min. each group)

	GROUP BREAKOUT SESSIONS
1:15 – 3:15 PM	IMPACT STATEMENTS & DEVELOPING AN IMPLEMENTATION PLAN
	Group 1: Environment
	Group 2: Economic Growth
	Group 3: Human Nutrition
	Group 4: Policy
3:15 – 3:30 PM	BREAK
	PLENARY SESSION - CONCLUSIONS AND RECOMMENDATIONS
3:30 – 5:30 PM	Global Plan Presentations by Working Groups (30 minutes each)
	Group 1: Environment
	Group 2: Economic Growth
	Group 3: Human Nutrition
	Group 4: Policy
5:00 – 7:00 PM	WILDLIFE VIEWING TOURS

FRIDAY, DECEMBER 11, 1998

6:00 – 8:30 AM	WILDLIFE VIEWING TOURS
	ADMINISTRATIVE MEETINGS
8:00 – 10:00 AM	External Evaluation Panel & Program Administrative Council
	Room 40
8:00 – 9:00 AM	East Africa PIs/ILRI/Tag -- Game Room
9:00 – 10:00 AM	Technical Committee Meeting -- Game Room
	Principal Investigators
	Regional Scientists

	GROUP BREAKOUT SESSION
	REGIONAL CONTRIBUTIONS TO GLOBAL PLAN &
	DEVELOPING A FUNDING STRATEGY FOR THE REGIONAL PLAN
10:00 – 12:30 PM	Group 1: Latin America -- Room 36
	Group 2: Central Asia -- Room 40
	Group 3: East Africa -- Main Conference ROOM
12:30 – 1:30 PM	LUNCH
	PLENARY SESSION - CONCLUSIONS AND RECOMMENDATIONS
1:30 – 3:00 PM	Presentation of Regional Plans (30 min each group)
	Group 1: Latin America
	Group 2: Central Asia
	Group 3: East Africa
	ADMINISTRATIVE MEETINGS
3:00 – 3:30 PM	PAC Meeting with TC -- Game Room
	EEP Meeting with Tag -- Pool
3:30 – 4:30 PM	PAC Meeting -- Game Room
3:00 – 6:00 PM	WILDLIFE VIEWING TOUR

SATURDAY, DECEMBER 12, 1998

6:00 – 8:30 AM	WILDLIFE VIEWING TOUR
9:00 AM	Departure from Tarangire National Park
	(buses to Kenya & buses to Arusha)

GLOBAL LIVESTOCK CRSP YEAR-END CONFERENCE
TARANGIRE NATIONAL PARK, TANZANIA
DECEMBER 6 - 12, 1998

PARTICIPANT LIST

Aboud, Abdillahi	Egerton University
Atwood, Tracy	USAID
Banyikwa, Feetham	University of Dar es Salaam
Bitende, Stella	Selian Agricultural Research Institute
Brown, Don	ECAPAPA-ASARECA
Brown, Margaret	USAID - Ethiopia
Bwibo, Nimrod	University of Nairobi
Conklin-Brittain, Nancy	Harvard University
Coppock, Layne	Utah State University
Corbett, John	Texas A&M University
Coughenour, Michael	Colorado State University
Demment, Tag	Global Livestock CRSP
Desta, Solomon	Utah State University
Dodd, Jerrold	North Dakota State University
Dyke, Paul T.	Texas A&M University
Ellis, Jim	Colorado State University
Else, Jim	Ministry of Tourism, Wildlife & Antiquities
Garcia, Letty	Global Livestock CRSP
Haki, Jeremia	Selian Agricultural Research Institute
Johnson, Susan	Global Livestock CRSP
Khazanov, Anatoly	University of Wisconsin - Madison
Kidunda, Rashidi	Sokoine University of Agriculture
Kijazi, Allan	NCAA Headquarters
Kikula, Idris	University of Dar es Salaam
Kingamkono, Margaret	Selian Agricultural Research Institute
Kohi, Yado	Ministry of Science, Tech. & Higher Education
Laca, Emilio A.	University of California, Davis
Larrea, Fernando	Heifer Project International
Lucas, Kimberley	USAID
McCarthy, Dennis	USAID - REDSO
Minde, Isaac	ECAPAPA - ASARECA
Mlowe, Geoffrey	African Wildlife Foundation

(GL-CRSP Year-End Conference 1998, Participant List Continued)

Mnene, William	Kenya Agricultural Research Institute
Moehlman, Patricia	Serengeti Wildlife Research Institute
Mpiri, David	Ministry of Agriculture
Mukudi, Edith	GL - CRSP Child Nutrition Project
Mundogo, Jonas	Ministry of Agriculture
Musser, Jeffrey	USAID/ENR
Mwilawa, Angello	Mpwapwa Livestock Research Institute
Ndikumana, Jean	ILRI
Nestel, Penny	Nutritionist
Neumann, Charlotte	University of California, Los Angeles
Nikundiwe, Alfeo	University Dar es Salaam
Ogwang, Patricia	USAID/REDSO
Owen-Smith, Norman	University of Witwatersrand
Price, Ed	Texas A&M University
Reid, Robin	ILRI
Rossi, Rosella	Progetto Oikos
Said, Mohammed	Dept. of Resource Surveys and Remote Sensing
Sammons, David	Purdue University
Sanchez, Lazaro	IMECBIO
Satybaldin, Azimkhan	National Acad. Centre for Agrarian Research
Scott, Jim	Global Livestock CRSP
Severre, Emmanuel	Ministry of Natural Resources and Tourism
Shapiro, Kenneth	University of Wisconsin - Madison
Shey, Jane	Agriculture and Trade Consultant
Shomet, Francis	LOSADEI
Sidahmed, Ahmed	IFAD
Sidelnikova, Sofia	Global Livestock CRSP
Sileshi, Zinash	Ethiopian Agricultural Research Organization
Strauss, Joel	USAID - Tanzania
Stuth, Jerry	Texas A&M University
Thompson, Susan	Dartmouth College
Tosi, Guido	University of Insubria, Italy (Varese branch)
Turk, Joyce	USAID
Urio, Ndelilio	Sokoine University of Agriculture
von Kaufmann, Ralph	ILRI
Wattiaux, Michel	University of Wisconsin - Madison
Weller, Dennis	USAID-Kenya
Wilson, Cathy ILRI	

MATERIALS DISTRIBUTED TO EEP FOR 1998 REVIEW

Annual Report 1997
Annual Report 1998 (Draft)

Project Workplans and Budgets Year 18
Project Workplans and Budgets Year 19
Project Workplans and Budgets Year 20

External Evaluation Panel Report 1996-97

Project Trip Reports 1997-1998

"Ruminations", Global Livestock CRSP Newsletter, Winter 1997 – Fall 1998 editions

Small Ruminant/Global Livestock CRSP Grant Renewal 1998 – 2003

Central Asia Regional Livestock Assessment Workshop Proceedings
Sheep and Goat Production Handbook for Southeast Asia

Glossary

A-AARNET	ASARECA - Animal Agricultural Research Network
AFS	Agriculture and Food Security Office, Global Bureau, USAID/Washington
AID	Agency for International Development, Washington D.C., USA
AMREF	African Medical Research Education Foundation
AP	Advisory Panel
APEX	Agricultural Policy Environment Extender
ARI	Agricultural Research Institutes
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASF	Animal Source Foods
AT	Assessment Team
BASIS CRSP	Broadening Access and Strengthening Market Input Systems CRSP
BIFAD	Board for International Food and Agriculture Development
CIEC	Centro Interdisciplinario de Estudios Comunitarios
CO_2	Carbon Dioxide
CNP	Child Nutrition Project
CRSP	Collaborative Research Support Program
CSU	Colorado State University
DSS	Decision Support System
EEP	External Evaluation Panel
EGAD	Center for Economic Growth and Agricultural Development, USAID
ENV/ENR	Environment Division of USAID
EPIC	Erosion Productivity Import Calculator
FAO	Food and Agriculture Organization, United Nations
FEWS	Famine Early Warning System
GL-CRSP	Global Livestock CRSP

GIS	Geographic Information System
GHAI	Greater Horn of Africa Initiative
HC	Host Country
IARC	International Agricultural Research Center
IBAR	Inter-African Bureau for Animal Resources of OAU
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRAF	International Centre for Research on Agroforestry
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IICA	Interamerican Institute for Cooperation in Agriculture
ILRI	International Livestock Research Institute
IMAS	Integrated Modeling and Assessment System
ISNAR	International Service for National Agricultural Research
KWS	Kenya Wildlife Service
LDRCT	Livestock Development and Rangeland Conservation Tools project
LEWS	Livestock Early Warning System
LSER	Livestock Sector Economic Reform project
ME	Management Entity
MA	Master of Art
MS	Master of Science
NARS	National Agricultural Research System
NCAA	Ngorongoro Conservation Area Authority
NCRSP	Nutrition Collaborative Research Support Program
NGO	Non-Governmental Organization
NIRS	Near Infrared Reflectance Spectroscopy
NREL	Natural Resource Ecology Laboratory
NUTBAL	Nutritional Balance Model
OAU	Organization of African Unity

OYB	Operating Yearly Budget
PAC	Program Administrative Council
PHYGROW	Plant/Hydrology/Yield/Growth Simulation Model
PI	Principal Investigator
PLAN	Planificacion Local Agropecuaria y de la Naturaleza (Livestock-Natural Resource Interfaces at the Internal Frontier project, Lead PI: Tim Moermond, University of Wisconsin-Madison)
PM	Problem Model
PRMP	Pastoral Risk Management Project
PVO	Public Volunteer Organization
REDSO/ESA	Regional Economic Development Services Office for East and Southern Africa
SANREM	Sustainable Agriculture and Natural Resource Management CRSP
SARI	Selian Agricultural Research Institute
SCT	Spatial Characterization Tool
SO	Strategic Objective
SR-CRSP	Small Ruminant Collaborative Research Support Program
TAMU	Texas A&M University
TC	Technical Committee
UC	University of California
UCD	University of California, Davis
UCLA	University of California, Los Angeles
US	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USU	Utah State University
UW	University of Wisconsin

UNIVERSITY OF WISCONSIN CENTRAL ASIA PROJECT

REPLY TO THE 1998 EEP REPORT

Principal Investigator: Kenneth Shapiro, University of Wisconsin-Madison

The EEP report devotes much of its discussion of the Wisconsin Central Asia project to the collaboration with our colleagues from the region. Accordingly, we begin our response with that topic. We also address the EEP's comments regarding training, gender issues, dissemination, regionalization, country coverage, publications, AID missions, and the review process.

REGIONAL COLLABORATION

The EEP raises questions about our Russian collaborators, the degree of collaboration, collegiality, and the lack of collaborators at Tarangire. Each is discussed in turn below.

Russian Collaborators. — The EEP is concerned that we have included among our collaborators two Russian researchers (pp. 25, 56). First, it is important to note that we have 16 active collaborators in the region (see details below), and only two are from Russia. Thus the EEP report is quite incorrect to state that we have drawn "almost half" our collaborators from Russia (p.25). Second, there were very good reasons for selecting these two Russian scholars. Dr. Sergei Klyashtornyi, was selected because he is one of Russia's leading social scientists, and he has devoted the 30-plus years of his career to studying Central Asia. He specializes in Kyrgyzstan, where he is held in especially high regard by scholars and government officials. Dr. Klyashtornyi has formed a team with four junior scholars who are benefitting from the experience that he can pass on. This seems to us a better model than one often sees in CRSP survey projects, i.e., American graduate students leading local enumerators. Dr. Olga Naumova was selected because she has become an expert on the northwestern part of Kazakhstan, an area in which it is very difficult to work and for which there are very few experts. Dr. Naumova has joined a Kazakh scholar as co-leader of the survey in this region. Our Central Asian collaborators were enthusiastic about Drs. Klyashtornyi and Naumova joining the team.

Degree of Collaboration. — For the GL CRSP as a whole, the EEP has general concerns about "full integrative collaboration... especially in the development of workplans and the reporting or early research activities/results" (p.28). We believe that this is an area in which our project excels. The key to the socioeconomic survey workplan - the core questionnaire - was drafted by one of our collaborators, Dr. Masanov, and was modified for each region by the other collaborators. The

US researchers, Khazanov and Shapiro, took a much secondary role in this process. Furthermore, we relied primarily on our regional collaborators to select the areas for the surveys. The field surveys in Kazakhstan and Kyrgyzstan are conducted solely by our regional colleagues. The first draft of the workplan for the sheep research was developed by Malmnakov (Kazakh). Thomas (US) made revisions for the second draft. Medeubekov (Kazakh) wrote the final draft. The day-to-day management of the sheep research is totally in the hands of our Kazakh colleagues.

Early analysis and reporting of research results has been done almost entirely by the regional collaborators. The three survey teams and the sheep researchers submitted detailed internal reports on the first year's research. These reports were the basis for the first annual report. Extracts from the reports of the survey team leaders are quoted at length in our 1998 annual report (pp. 7 - 15), and their authorship is fully identified. The first year's work was also the basis for five papers written and presented solely by five of the regional collaborators at the January, 1999, Almaty conference. A sixth paper was co-authored with one of the US researchers. Two other collaborators, who function primarily as consultants, also delivered papers we commissioned from them on related aspects of the situation. We intentionally structured this conference and the first one, in May 1997, as forums for the regional collaborators to interact with other regional scientists and with government officials.

Collegiality. — The EEP raises concerns, evidently for both Central Asian projects, about "lack of collegiality" (p.30). We are not sure what this means beyond the above issue of degree of collaboration. As noted above, our regional collaborators are certainly full partners in developing workplans, in analyzing results, and in reporting. In addition, we should note that we have particularly close relations with several of the collaborators, some of which predate the CRSP. We have been guests for meals at each others' homes, we carry back and forth items of special interest, and on free days we have joined our collaborators as tourists in the US and in Central Asia. As with US colleagues, we have developed a strong set of relationships that are in part professional and in part social.

Collaborators at the Tarangire Conference. — The EEP seems to feel that the lack of Central Asian collaborators at the annual conference in Tarangire indicates lack of collegiality. This was not true in our case, but there were other reasons why we did not impose on our colleagues. First, the 7 to 10 days away from other obligations and the hardship of traveling from Central Asia to East Africa must be justified by significant benefits. Second, our collaborators were busy preparing for our January conference, less than a month after Tarangire. Thus the trip would have been even more costly to them and would have meant a second extended period (in addition to the week of our conference and workshop) away from their other duties. Third, the objectives of the conference were not clear in advance (at least to us). Even ex-post, we are not sure that the meeting's benefits would have justified the trip's costs for those not working in Africa. Fourth, when we did invite Masanov to the first annual meeting at Davis, we did so in part because his presence in the US

allowed us concentrated time in Madison to collaborate on the workplan. The ME might consider this last factor when selecting the venue for upcoming annual meetings. (Please note that the one Central Asian representative at Tarangire was invited by the ME, not by our project.)

We have two suggestions for the annual meetings. First, they should have a major focus on project evaluation. The PIs should be informed that their presentations will be an important part of the evaluation process. The EEP should come to the conference having completed its review of written material and prepared to discuss the strengths and weaknesses it sees in each team's progress (see comments below on review process). Second, large blocks of time should be set aside for team meetings. If the US and regional researchers are together for a week, they should be able to take advantage of the time for planning, assessing prior work, and so forth.

Regional Collaborators. — A complete list of our regional collaborators and their roles follows:.

M. Abuseutova, Director, Kazakh Institute of Oriental Studies, local coordinator for all operations

K. Medeubekov, Kazakhstan Technological Institute of Sheepbreeding, lead investigator in sheep breeding component

N. Malmakov, Kazakhstan Technological Institute of Sheepbreeding, co-investigator in sheep breeding component

K. Kasymov, Kazakhstan Technological Institute of Sheepbreeding, co-investigator in sheep breeding component

N. Masanov, Kazakh Institute of Oriental Studies, drafted original core questionnaire for all surveys, drafted revisions for second year, drafted structure for in-depth study of successful farmers, leader of the southern Kazakh survey team

A. Kalyshev, Kazakhstan State University, co-investigator with Masanov in southern Kazakhstan,

O. Naumova, Russian Institute of Ethnology and Anthropology, co -leader of the northern Kazakhstan survey team

S. Sagnayeva, Western Kazakhstan University of the Humanities, co-leader of the northern Kazakhstan survey team

S. Klyashtornyi, Russian Institute of Oriental Studies, leader of the Kyrgyz survey team

K. Kokombaev, Bishkek (Kyrgyzstan) Humanities Institute, member of the Kyrgyz survey team

A. Zhaparov, Department of Ethnography at the Kyrgyzstan Institute of History, member of the Kyrgyz survey team

S. Berdikulov, Department of Sociology and Political Sciences , Oshkii (Kyrgyzstan) State University, member of the Kyrgyz survey team

E. Suleimanov, Department of Kyrgyz History, Oshkii (Kyrgyzstan) State University, member of the Kyrgyz survey team

N. Babakulov, Samarkand (Uzbekistan) Karakul Sheep Institute, member of the Uzbek survey team (leader was a US postdoc with experience in Uzbekistan)

I. Alimayev, Deputy Director, Kazakhstan Institute of Fodder Production and Pastures, has written

two commissioned papers for us, has provided consultation on rangelands in different ecological zones

Z. Zhambakin, General Director, KazAgro (Kazakhstan) Institute of Economics and Organization of the Agro-Industrial Complex, has written two commissioned papers, has provided consultation on the privatization process in agriculture, is reviewing reports by survey teams, is scheduled to come to UW this spring.

TRAINING

The EEP states that it is "concerned that most of the training is to take place through contact with U.S. scientists." We suspect they mean something other than that, since we are unaware that conveying information personally is now in disrepute, even in the computer age. Perhaps the EEP is expressing a preference for formal, classroom-style training rather than informal workshops and joint planning meetings

We are dealing primarily with well educated, senior scientists who are our partners, not our pupils. They do not sit in an inferior position to us. Thus the "training" they receive from us is not in a classroom but takes place when we come together to discuss workplans and to analyze results. We learn from them about the local situation and their methods and they learn from us about western research methodology. In effect, these meetings are research methodology workshops.

For special biological techniques, the sheep experts came here for special training. Because lamb mortality was an issue (see proposal), we sent a veterinarian to Kazakhstan to assess the situation and to offer training to practitioners.

During our planning grant year, we interviewed many Central Asian scientists and, for the most part, were impressed with the level of their training. The priority and methods of training by the CRSP in this region may be different from those in other regions.

The University of Wisconsin is fully funding three research assistantships for this project. Three US citizens have been awarded these positions. The work these students are doing for three years on the project will give them the basis for further work in the region.

GENDER

The EEP states that we have "failed to identify women for short-term or long-term training" (p. 46) and it implies that we have not included women producers in the research (p. 57). Three of our regional collaborators are women, the two who lead the northern Kazakhstan survey team and the regional coordinator. The veterinarian who did the lamb mortality study and conducted related training is a woman. The two survey researchers participate in all the short-term training that the male survey researchers do.

The three UW-funded research assistantships were advertised widely on campus and the three best candidates were awarded the positions. They are all male. One female applied and seemed a strong candidate, but she subsequently received another offer that she found more attractive.

With regard to female producers: 26 of the 114 producer-respondents in the southern Kazakhstan survey were women, 3 of 91 in northern Kazakhstan, 6 of 72 in the Uzbekistan survey, and 4 of 60 in the Kyrgyzstan survey. This a region where female-headed households are not common and where the pattern of male migration to cities has not yet become a widespread phenomenon.

DISSEMINATION

The end users of the sheep information will be farmers. We can not promote the widespread use of prolific breeds until the results of the project are in. However, in 1999 we will attempt to distribute some prolific breed semen and some _ prolific breed rams to other farms to gather more information on the value of these breeds in commercial situations. This will start to increase the number of farms gaining information on these breeds.

The Kazakhstan Technological Institute of Sheepbreeding has had a system for getting improved animals out to farmers. This was recounted in our proposal. Large and small farmers come to the Institute for seminars and demonstrations. The Institute signs contracts with farms that are interested in introducing new technologies. Contracts are to reflect the cost of the work and services and often were specified at 25% to 30% of increased profits. The Institute also worked directly with large farms. Undoubtedly this system has been undergoing changes, however, we will explore whether it can offer another basis for disseminating the improved sheep.

In addition, the surveys are identifying farms that will be good candidates for receiving improved animals. In part this will be based on the farms' past success in the new economic environment. Also, the second year surveys will have questions keyed directly at the farm's ability to support a greater incidence of twinning and also the marketing channels available for selling animals and meat. Finally, the UC Davis project will be providing range and pasture information that will help us locate areas where the improved animals are likely to succeed.

For the socioeconomic work, in these early phases before we have any results and recommendations to offer, our objective is to keep the issues of agricultural privatization as visible as possible among the research community and among policy makers. Toward this end we have organized two conferences and have published proceedings in Russian and distributed them widely. The first conference was in June, 1997, and included representatives from all five countries. The second conference was in January, 1999, and focused on Kazakhstan. (Proceedings for this conference are now at the printer.)

We believe that the second conference, especially, has gone a far way toward raising the

visibility of privatization issues in Kazakhstan. It was opened by the Kazakh Minister of Science, and among the Kazakh attendees were the Deputy Minister of Agriculture, the Head of the Department of Animal husbandry in the Ministry of Agriculture, members (including two Directors) of 6 research institutes, university professors and others. The conference received national coverage on Kazakh TV, radio, and newspapers. TV reporters videotaped the proceedings and interviews with the CRSP team, and radio reporters taped interviews with the CRSP team. The translation of one lengthy newspaper article is enclosed.

We have had two private meeting with Dr. Shkolnik, the Kazakh Minister of Science and Higher Education, to discuss the research. We are planning a visit to high officials in the Ministry of Agriculture this August.

We have enlisted the services of Dr. Zhambakin, Director General of KazAgro, the Kazakh organization of private farms. In that role he is actively engaged with government officials in recommending policies to assist private farmers. Dr. Zhambakin has served as a consultant for us since the start of the planning grant, he is now reviewing our team's internal reports, and he will come to Wisconsin this spring to learn about US cooperatives and to discuss strategies for making our research results useful to government policy makers.

We intend to start a publication series in Russian and English as another route for dissemination.

We need to be careful about our dissemination strategy. AID/Almaty has decided not to support agriculture (see discussion below of AID mission) and we have been warned not to give the perception of undercutting the mission's position.

REGIONALIZATION

Preliminary discussions between the two Central Asian projects before the Tarangire conference identified the development of sheep production systems for Central Asia as a possible collaborative effort that could benefit from information from our two projects. UC-Davis could provide information on nutrition available from ranges, and UW could provide information on needs of various types of sheep. However, we do not have anyone trained in the modeling of sheep production systems. This is where the recommendation of the EEP that a non-PI should be assigned to each region to assist in the coordination of the projects of that region may be valuable. We can think of two possible coordinators for the CA projects: l) one or two scientists, from ICARDA (e.g. a small ruminant person (Iniguez) and/or a range person with a strong background in modeling of production systems), or 2) Dr. Harvey Blackburn. He is currently the director of the USDA/ARS U.S. Sheep Experiment Stations Dubois, Idaho and is trained in the modeling of sheep production systems. He was on the staff of Texas A&M and a part of their SR-CRSP team that developed the "Sheep and Goat Model", and between jobs at Texas A&M and Dubois, Idaho, he was on the staff of USAID-Washington, He has had (may still have) a small project in Uzbekistan, and he occasionally

calls UW's David Thomas for updates on our activities in Central Asia.

While integration such as that proposed above can be valuable, it should also be recognized that projects can operate independently, avoid duplication, and develop complementary information that adds up to improved understanding of regional issues. While the aforementioned integration of the sheep and range research certainly is advantageous, the separate but complementary components of the two Central Asian projects also have potential to add up to improved understanding of the region.

COUNTRY COVERAGE

The original proposal states that we will conduct surveys "in Kazakhstan, Kyrgyzstan, and Uzbekistan in year one, expanding to Tajikistan and Turkmenistan in later years." The first workplan states that in year one we will conduct "initial field surveys - two in Kazakhstan, one in Kyrgyzstan, and one in Uzbekistan." That is what we did. All three countries used the same survey, with local adaptation. The EEP is incorrect in stating that Uzbekistan is not integrated with the other surveys.

We have decided not to continue in Uzbekistan because our first survey confirmed that there has not been significant reform in the main pastoral zone. Likewise, we are not expanding to Turkmenistan, because of insignificant reform. These two decisions helped us to absorb the budget cut, but that cut means we also will not be able to expand to Tajikistan.

PUBLICATIONS

The EEP overlooks the fact that we published a 240-page book with 19 papers presented by scholars from all five Central Asian countries and the US at our June, 1997 conference (Annual Report, 1998, p. 31):

> Khazanov, Anatoly, Vitali Naumkin, and Kenneth Shapiro (editors). 1997. Pastoralism in Central Asia, Moscow: Russian Center for Strategic Research and International Studies.

AID MISSIONS

The EEP seems to believe that the AID missions for Central Asia are a potential source for additional funding. We have contacted the missions on every visit to the region, and we have had meetings whenever these were granted. One consistent message has come through: AID in Central Asia is not interested in agriculture. Democratization, environment, and petroleum seem to be at the top of their list. Although we have pointed out the connection between our research on privatization

and AID's interest in democratization, this has not had any effect. We will continue to keep the mission informed of our work.

THE REVIEW PROCESS

As our comments above make clear, we have several differences of opinion with the EEP. This is not too surprising. We are more concerned about misinterpretations and factual inaccuracies in the EEP report. We appreciate the ME's prompt action in deleting some of the more serious inaccuracies which, unfortunately, were circulated in the first draft. To avoid similar problems in the future, we suggest a review process that allows the EEP to get feedback from the researchers before the report is distributed.

The Tarangire conference provided an ideal opportunity for the EEP to inform the teams of areas of concern and to request any needed factual corrections. Unfortunately, the EEP did not take advantage of this opportunity. Contrary to what the EEP states about "extended meetings with U.S. and regional PIs" at Tarangire (p.3), the EEP limited its interaction with us to one lunch meeting, shared with both Central Asian teams. Furthermore, the discussion at that meeting focused primarily on our relationship with the ME and with AID. There was absolutely no mention of the main criticisms that appear in the EEP report. When we recounted the content of our meeting to the CRSP Director at Tarangire, he expressed surprise that our research was not discussed. However, no follow-up meetings were arranged to rectify this. As discussed above, we suggest that the annual conferences have an explicit focus on evaluation and that those meetings be the occasion for the EEP to discuss their concerns with the research teams prior to production of the report.

On a related matter, if the EEP is having difficulty evaluating aspects of the work, they should request additional materials. For example, their report asks that in the future we provide them with copies of the questionnaires (p. 16). They did not ask for these to aid in the current evaluation. If asked, we would have sent them, as we have in response to their recent request.

The separate evaluation roles of the EEP and the PAC are not clear. In addition, the EEP states that it will enlist the assistance of outside experts when needed. If this is done, the names and roles of the outside experts should be listed. Finally, the titles, not just the institutional affiliations, of all concerned with the evaluation should be listed.

Translation of Kazakhstan Newspaper Article about the January, 1999, Almaty Conference

Panorama

15 January 1999

At the Academy of Sciences, An International Conference on the Condition of Livestock Raising in the Republic

On January 12-13, at the Academy of Sciences RK [Republic of Kazakhstan], an international conference devoted to "The Current Condition of Pastoralism and Animal Husbandry in Kazakhstan and the Prospects for its Development" took place. The organizers were the University of Wisconsin-Madison (USA), Ministry of Science-Academy of Sciences RK and the Russian Center of Strategic and International Research. Scientists from the USA, Kazakhstan, Russia, Israel, and also Kyrgyzstan and Uzbekistan participated in the work of the conference.

For our republic, this issue is extraordinarily important today. The development of this branch of the economy is one of the main priorities to the state, where historically the special relationship toward it took shape. Today we are confronted with large problems. However, as the Minister of Science **Vladimir SHKOL'NIK** noted in his presentation, in the conditions of the objective difficulties, it is necessary to study and revive the experience of the nomadic ancestors. He emphasized the acuteness and importance of the project presented at the conference, its social-economic and ideological sides.

It was also noted by other scientists, that this project will have great significance for the "fate of the states of Central Asia," which today are living through a transition period. At the conference, the results of the first year of work on the joint project of research on the condition and potential of livestock raising and animal husbandry in Kazakhstan were discussed.

University of California at Davis professor, director of the international research program on livestock raising **Montague DEMMENT** said that the CRSP (joint research on small ruminants and global livestock) program is conducted by the Agency for International Development USA (USAID), American land-grant universities, and American and foreign agricultural organizations. Professor Demment reported, that the Universities of Wisconsin and of California are the best in the USA among those having land grants, and successfully cooperate with farmers. The University of Wisconsin is the leader of one of two CRSP projects in Central Asia. In 1996, in Tashkent, the first similar conference for the determination of priorities took place. The project in Kazakhstan has as its goal to study how our [Kazakh] farmers react to the changes taking place in the state. It is necessary to understand which projects will work here, and which will not. It will assist in making correct decisions in the future.

Member of the British Academy and professor of the University of Wisconsin **Anatoly KHAZANOV** spoke about the project in more detail. Together with his colleagues, professors David Thomas and Kenneth Shapiro, he leads this multifaceted project. Their goals are to assist in identifying the problems in animal husbandry and to develop measures on overcoming them. For this, it is necessary to study the diversity of new forms of agriculture and the processes, which caused their appearance, the reasons for the insufficient development of marketing and credit, the disparity between the government legislation on privatization and its implementation at the local level, and the transformation of sheep raising to production of meat.

Very much significance is given to the survey of farmers and local authorities. A bulk of the research is done by our [Kazakh] scholars. In the plans for this year is the continuation of field research in Kazakhstan and Kyrgyzstan, including the survey of a new group of people, the development of additional questions, the conducting of a detailed study of successfully functioning farms, the continuation of improvements to the Kazakh fine-wool breed of sheep and the increase of its reproductive capacity.

In the report of the Deputy Minister of Agriculture RK **Kadyrkhan OTAROV** and the Head of the Department of Animal Husbandry of the Ministry of Agriculture **Soviet SATIGULOV,** an evaluation of the condition of animal husbandry in the republic was conveyed. Among all the changes taking place in the agricultural sphere, the situation with this branch of the economy remains very difficult. A reduction in the number of livestock and lowering of the volume of production of animal husbandry products is taking place. Today in Kazakhstan, there are about 4 million head of cattle (altogether in the world there are about 2 billion head of cattle), 9 million sheep, 1 million pigs, some 900 thousand camels and horses, and 900 million of poultry. The reduction in the number of livestock is occurring on account of the fact that animals are used as a means of payment in the mutual settlement for services rendered, in exchange for fuel and lubricants, and the like. However, several tendencies of the slowing of the tempo of the lowering of the number of livestock are noted.

A negative role is also played by the deficiencies in food processing because of the lack of capital and raw materials (reduction in the number of head), by the sale of livestock through various channels without the participation of food processing enterprises, and by the lack of investors. Today our [Kazakh] food processing industry uses only 10-15% of its productive capacity. These enterprises already have amassed almost 2.5 billion tenge of debt. Experts in the Ministry of Agriculture consider that in order to improve the situation one should encourage cooperation and integration, restore a procedure of bankruptcy, and encourage investors. In remote regions, it is necessary to expand the system of collection and processing of raw materials.

Today the participation of scientists in the process of rehabilitation of animal husbandry in the republic is indisputable. So, at the present time in Kazakhstan work is being done on the creation of four selection-genetics centers.

It is expected that the results of the conference, which took place in Almaty, also will exert a positive influence on this process.