
INTRODUCTION

Dr. David J. Sammons, in his capacity as Chair of the External Evaluation Panel for the Global Livestock Collaborative Research Support Program (GL-CRSP), attended the GL-CRSP International Conference during the period March 12 to 19, 2000. The Conference as well as pre-conference activities took place in Autlán de Navarro in Jalisco State, Mexico. Pre-conference activities included visits on March 13 and 14 to nearby sites in which GL-CRSP research activities are occurring. These visits included an overnight stay at the Las Joyas Research Station in the Sierra de Manantlán Biosphere Reserve and a half-day in the village of Zenzontla and vicinity in the Ayuquila River valley.

The formal sessions of the GL-CRSP International Conference met in a Conference Center adjacent to the campus of the host institution, the Centro Universitario de La Costa Sur of the Universidad de Guadalajara, during the period March 15 to March 18, 2000. Nearly 100 individuals were in attendance for the International Conference, including nearly all Principal Investigators from the three regions of the world in which the GL-CRSP is active (East Africa, Central Asia, Latin America), numerous associate scientists from both the United States and the collaborating

host countries, staff from the GL-CRSP Management Entity (ME) at the University of California, Davis, representatives from the U.S. Agency for International Development, invited local partners, graduate students associated with the GL-CRSP, and the seven members of the Program Administrative Council (PAC).

Summarized below are observations and comments based on my participation in the International Conference and significant dialog with the Program Administrative Council. The first part of the report contains my comments that are of a cross-cutting nature and that relate generally to the entire GL-CRSP. The second part of the report contains a series of specific observations about the seven individual projects that together make up the global program. Note that the comments herein are mine only. No other members of the EEP attended the International Conference nor participated in this review process.

Crosscutting Observations

ATTENDANCE

The broadly representative participation in the conference was impressive. Scientists from the three regions in which the global program is present (East Africa, Central Asia, Latin America) attended the meeting. Their presence permitted a significant amount of regional and global interaction to occur, especially during breaks in the formal meetings and over meals. I observed a substantial amount of professional interaction on research themes of common interest, especially during the poster session (see below). The cost of bringing together the entire GL-CRSP “family” was more than repaid by the cross-regional interaction that the gathering permitted; there is no other way to forge a truly global program from a set of regional activities than face-to-face meetings of this sort. The GL-CRSP leadership at the ME is to be commended for designing this event as an opportunity to bring together the scientists from the entire global program.

POSTER SESSION

A poster session presenting the work of GL-CRSP scientists and student trainees was scheduled on the first day of the International Conference. Included in the posters on display

were 13 prepared by GL-CRSP associated students who had competed for travel grants to present their work. In addition, several posters prepared by CRSP senior scientists were displayed. The posters remained on display throughout the week and promoted a significant amount of interaction among conference participants. I believe that the poster session and the opportunity that it afforded for the exchange of ideas and results was a true highlight of the International Conference. In particular, I applaud the inclusion of graduate student work in the poster displays. The participation of graduate students in the conference was truly affirming of their membership in the GL-CRSP, and many of them expressed great pleasure for the opportunity (see below). I recommend that a session of this sort be planned in each annual conference. This was clearly an example of resources wisely and creatively spent.

GRADUATE STUDENT PARTICIPATION

As noted above, I commend the ME for including a sizable group of graduate students in the International Conference through a competitive process that permitted selected individuals to display their work during the poster session. A total of 14 (8 American and 6 international) graduate students from outside

Mexico were in attendance. I arranged to meet with nine of these students towards the end of the conference to talk about their engagement in it and their perceptions of the event. The students were uniformly positive about the opportunity to attend. Their description of the conference included such words as “stimulating,” “valuable,” “exciting,” and “positive.”

It is of interest to note that several students indicated that, prior to the meeting, they had not realized that their individual research was part of a much larger global program. Project PI’s who advise graduate students should be encouraged to acquaint them with the larger context of their work. For most of the students, their research interests just happened to coincide with the opportunity for support through the CRSP, that is, they were in the right place at the right time. All, however, stated that they have career aspirations to work internationally. A number mentioned that the conference helped them to begin to make global connections and cross-disciplinary linkages that otherwise they would not have recognized. Several mentioned that the international contacts that they made as a result of attendance at the conference would be useful to them in the future. One of the students, a former Peace Corps volunteer, made the observation that U.S. researchers, she believes, need to be more sensitive than they appear to be at present about the knowledge that they take from host countries through their research activities. She suggested that U.S. researchers should make every effort to return all such information to these partners for potential future use. The flow of knowledge,

she stated, needs to be in both directions. Finally, it is useful to note that several students told me that they felt more a part of this conference than they do at professional meetings of their own disciplines. This speaks well of the inclusivity of the GL-CRSP and is a value that should be maintained through inclusion of students in future global conferences.

USAID PRESENCE

In addition to Joyce Turk, the AID project officer for the GL-CRSP from USAID/ Washington, two other representatives of USAID attended all or part of the conference. These two individuals, from the USAID Mission in Mexico, were the Mission Director, Paul White, and the AAAS Science Advisor, Heather Huppe. Their presence and contributions to the discussions were a valuable component of the International Conference. Additionally, their presence underscored the fact that the GL-CRSP presence in Mexico is valued as a part of the development portfolio for the country. My one-on-one conversation with each of these individuals leads me to believe that both left with positive impressions of the work of the GL-CRSP not only in Mexico but globally. Inclusion of these two individuals was an important part of the process of building better relations with the Agency. In every instance in which such opportunities arise, USAID officials should be invited to interact with CRSP scientists. The ME and the USAID/ Washington project officer, as well as CRSP PI’s, should all take the responsibility to assure that such invitations are issued in a timely

fashion when meetings of this sort are planned. In addition, project PI's must assure that, when they are in an AID country, contact is made with the Mission. It is imperative to the future of the CRSPs that country Missions know about and appreciate the contributions of the CRSPs to the development agenda.

SITE VISITS

The ME and local PI's in Mexico arranged for site visits as noted in the introduction to this report. Both the visit to the Biosphere Reserve and the visits within the Ayuquila watershed were important additions to the program. In each case, participants were able to see GL-CRSP activity on the ground. This sort of opportunity is stimulating to other researchers with similar interests, and also offers the opportunity for PI's to obtain useful feedback about their work. In addition, it provides everyone the chance to see the contributions of the CRSP in a local, real world context. Finally, it affirms for the host country participants the importance of their work in the context of the global program. Thus, in every respect, these field visits were a valuable part of the international meeting and should be included in future gatherings as a standard component. My only caution is that there is a tendency to over program the visits by trying to include too many stops. Perhaps this is inevitable, given the enthusiasm of the PI's charged with arranging these visits, and was certainly not a significant problem.

PAC ROLE

The presence of the Program Administrative

Council was important to the International Conference. It provided an opportunity for the PAC to review and evaluate progress made in the research activities of the GL-CRSP and to provide essential feedback to the PI's and the ME on a number of research and policy issues affecting the GL-CRSP. I attended all PAC meetings except the one on the last day of the conference that dealt with management issues. My perception of the discussions of the PAC in closed sessions as well as in sessions with the PI's is that the PAC is absolutely committed to maintaining the quality, rigor, and integrity of the GL-CRSP. The discussions were frank, open, and generally fair from my perspective. In every instance, even when comments by PAC members were somewhat harsh, my sense was that the PAC was acting in the very best interests of the GL-CRSP. The PAC is a hard-working body that must be complimented for its good work. My one concern is that the PAC did not have sufficient time with the PI's for a thorough give-and-take discussion. The meetings with the PI's were relatively one-sided (the PAC advising the PI's about concerns and issues). There needs to be more of an opportunity for dialog with the scientists so that the meetings are less like a Ph.D. defense and more collegial in nature. I suggest that at the next conference the PAC set aside an hour with each PI rather than the 30-minute sessions that typified this conference.

SPATIAL WORKSHOP

The ME programmed a workshop focused on GIS use in global livestock development for the last portion of the International Conference. During this workshop, participants were asked

to develop proposals for inclusion of such activities in a crosscutting fashion as part of a future GL-CRSP component. The workshop was preceded by a panel discussion on the topic led by a group of scientists with prior experience and knowledge of the technology and its applications. The conference participants were divided into three working groups that developed and then presented outlines of potential spatial applications for a proposed intra-CRSP activity. I thought that the inclusion of this workshop was a stimulating use of the final portion of the time allotted for the conference, and that some creative ideas surfaced from the small group discussions. An important and meritorious component of the workshop was the opportunity it afforded for inter-regional dialog within the small working groups that were formed. I hope that the ME will be able to provide some resources to support at least some of the ideas that were presented. It is my understanding that the ME intends to announce a competition within the context of the five-year renewal of the GL-CRSP that will insure that a spatial dimension is built into each component project of the CRSP. Ultimately, it is hoped that this spatial component will support the CRSP impact assessment framework currently being developed by Texas A&M University on behalf of the Office of Agriculture and Food Security at USAID/GLOBAL/EGAD.

SCHEDULE

The ME developed a full and comprehensive program for the period that the group met in Mexico. Communication with participants was

very well done during the period leading up to the conference. The time during the conference week was well used both for the field visits and the formal conference. Allowance was made for independent meetings of the PAC although I believe that the PAC would have benefited from more one-on-one time with the PI's as noted above. Evenings were left generally free for social time, rest, and interaction among the conference participants. The hotel, university, and conference venues were outstanding both in terms of comfort and convenience. Arrangements for transport to/from the international airport in Guadalajara were excellent. The written material prepared for the conference was outstanding in every respect. As I have come to expect from the GL-CRSP, the ME left nothing out in the planning. The fiesta arranged for the end of the conference on Saturday night was great fun and a good chance to unwind prior to our return home after a very full week. This CRSP clearly has a large capacity both for work and for fun!

Observations Concerning Individual Program Components

In the section that follows, I have outlined a number of observations from my perspective as EEP Chair. In addition, I concur with the report submitted by Dr. Ahmed Sidahmed on behalf of the Program Administrative Council (PAC). I attended all of the PAC meetings during the Mexico conference and participated in the discussions and deliberations that contributed to the report that has been prepared by Dr. Sidahmed and the PAC. My comments in several instances below are redundant with those of the PAC but I submit them nevertheless as part of the EEP report.

LIVESTOCK-NATURAL RESOURCE INTERFACES AT THE INTERNAL FRONTIER IN LATIN AMERICA (PLAN)

I applaud the significant community involvement that characterizes this project. Community involvement includes both planning and implementation of research activities. In addition, the role of young scientists/ graduate students in this project is commendable. It was apparent to me that there is much affection on the Mexico team for the PI and I sense that this is true also for members of the local teams in Bolivia and Ecuador. The project appears to be heavily process oriented, a laudable focus if the process and results of

the process can be carefully documented. However, a clear research component needs to be part of the overall design if the process itself is to be an outcome of the project.

I am concerned that the livestock activity has insufficient prominence in the work of the team. Certainly this was apparent in Mexico and appears to be the case as well in Bolivia and Ecuador. The PI needs to align the project goals with the central theme of the CRSP, that is livestock as a contributor to the economic status and welfare of rural families. The connection of livestock production to conservation biology and the protection of biodiversity is intuitive but must be made explicit in the project activity given the GL-CRSP mandate. In addition, it is not entirely clear what the connections are among the various components of the PLAN activity. I realize that this project has been short-funded for the past two years but it is important that it be more than a collection of vaguely linked activities in three countries.

I also encourage the PI to continue to assure that written documentation of the work of this project remain a high priority. It is noteworthy that documentation to date has been entirely in Spanish, however some of this must be translated into English in order to reach larger

audiences in the international research and development communities. This visibility is important to the long-term interests of the GL-CRSP as well as this component.

In addition, as is true for the PAC, I would like to see more hard data relative to the results of the first two-year's work. It will be especially important that the data analysis be completed and submitted with the renewal proposal.

With reference to the relationship between this project and USAID, I note that it will be important to integrate as well as possible with the local missions in each of the three countries where the project is operating. I was startled to learn from a conversation with Paul White, Mexico Mission Director, that he was not fully aware of the dimensions of the GL-CRSP activity in Mexico. This is, however, clearly not the fault of the CRSP ME or the PI. The GL-CRSP ME reports to me that all relevant Missions (including Mexico) were contacted when the CRSP was launched. This notification was via an email with a description of the project in their country and general information about other projects in the CRSP. In addition, the ME routinely sends a package of information to missions containing the most recent Annual Report, informational brochures, and other relevant materials. Each Mission is also sent quarterly travel projections and the GL-CRSP newsletter. USAID/Washington identified the specific contact person in each mission to receive these documents. I am also aware that Dr. Moermond is especially good about contacting mission people prior to his trips. I suspect that Mr. White's comment to me is symptomatic of larger issues within the

USAID field missions, including frequent personnel turnover, overworked staff, an overwhelming volume of printed material received in the Mission office, and poor communication internally at the mission. Given the apparent difficulty in communicating with this mission (and, I suspect, other missions), I advise the ME to be even more proactive in efforts to communicate with USAID, perhaps making use of the AFS offices in the Global Bureau as an additional conduit of information to the field missions.

Finally, as noted above, part of the difficulty encountered by this project is related to short funding received during the first phase. I recommend that additional resources be allocated to the project for the next year out of the supplemental \$200,000 that is coming to the total GL-CRSP. At a minimum, it would be appropriate to bring the funding for this project somewhat in line with the amounts that have been allocated to other project activities (\$300,000 to \$350,000).

IMPROVING PASTORAL RISK MANAGEMENT ON EAST AFRICAN RANGELANDS

This project is clearly and heavily committed to commendable development issues of importance to the livestock sector in East Africa. This is necessary, and is certainly congruent with the overall mission of USAID, however, it is important for the PI and his colleagues to recognize that the GL-CRSP has a significant research mandate oriented to solving problems of development. As such, there is an expectation that research outcomes

be based on a testable hypothesis related to the development needs that are addressed. It is not clear that this is the case for this project.

The goals of this activity appear to be focused on the implementation of a process of risk discernment and mitigation. Is the process generalizable? Can significant research outcomes relative to the process be documented? Are the results that have been reported to date linked to research activities? With little data presented by the PI, it is difficult to identify the research design. In sum, the work needs to have more substance relative to a research activity. These are concerns that need to be addressed by the PI.

I note that there has been significant emphasis on workshops that have permitted Kenyan and Ethiopian participants to make important contributions to planning. The workshop in Addis Ababa was important in this regard, but what are the research designs and outcomes linked to the workshop? I also note a commendable commitment to formal education with 23 M.S. students at Egerton University linked to this project. Training is an important component of the CRSPs in general, and this commitment is important.

Technical reports are listed as outcomes, but without viewing them it is difficult for me to assess their technical merit. It would be helpful to the EEP if these documents could be routinely made available to us in the future as part of our review process. I understand from the ME that a technical publications series is currently planned. This series will be internally reviewed by the ME and will serve as a

mechanism to get project results out quickly to stakeholder and other interested audiences. This technical series will not preclude publication in peer reviewed journals.

There are potential spillover possibilities between this project and the LEWS project (see below). I understand that the PI's are talking to each other but I sense that there are philosophical differences in the way each group is approaching its work. Nevertheless, risk management and risk avoidance (via the LEWS project) are clearly linked and there ought to be some appropriate level of communication between the two activities in the region.

In the policy arena to which the PI alludes, I am concerned about the anticipated impact of the risk management program. Have key policy makers been involved to date in the work of this project? If so, in what way? Can the relationship be documented in terms of outcomes? Finally, and this might be a fundamental test of the project, is the activity appropriate to the region? Is risk management something that can apply in this difficult environment or are the risks encountered by pastoral people of such immediate consequence that longer time frames for planning risk management are simply not realistic?

**INTEGRATED MODELING AND ASSESSMENT
FOR BALANCING FOOD SECURITY,
CONSERVATION AND ECOSYSTEM
INTEGRITY IN EAST AFRICA (IMAS)**

This interesting project is developing a complex tool for use in managing ecosystems in East Africa. The research component strikes me as first class, but I am concerned that the group may be developing a tool without a clearly defined audience for its use and application. What is the potential utility of the model, especially given the complexity of it?

I also have questions about the model components, especially those in the socio-economic sector, about which the PAC also had several questions. For example, the human nutrition sub-model is relatively simple in that so few children are assessed. Additionally, I do not completely understand how the model components fit together and how the sub-components support the total model. I am aware, however, that this study has received funding from the National Science Foundation, and conclude from this information that the design is acceptable in terms of meeting the project's goals.

This project is also heavily linked to other non-CRSP projects under the direction of the PI and his colleagues. The linkages are such that it is hard to discern just exactly what the GL-CRSP is supporting and what is supported by other entities. In this regard, it is also especially troublesome that in publicity about this project the PI has failed to credit the GL-CRSP for its contributions to the support of the work. In fact, in some of the publicity that I

saw, the CRSP was not even mentioned. The PI needs to assure that there is better attribution of CRSP support in publicity pieces that are prepared.

The role of this project in policy formulation will be enhanced by a policy workshop that is planned for next year. This is commendable, however, I urge the PI and his colleagues to be sure that the right audience is reached in the delivery of the workshop. The PI noted his intentions to contact policy makers to "show his work." Certainly, there needs to be a more proactive effort to engage these individuals in the use of the project outputs to formulate policy or to study policy options. Given that the policy maker audience seems not to have been significantly engaged in this work to date, there is some question as to the suitability of the model to their needs. Participation of impacted policy makers in project planning, implementation, and delivery should ensure that the model fits better with the needs of the intended recipients.

Finally, I have a concern that the study on wildlife conservation policies and their impact on the Maasai living in the Ngorongoro Conservation Area (NCA) may have been flawed. There was a clear imbalance in the data set collected for those living inside the NCA and those living outside the NCA. This imbalance calls into question the significance of the reported outcomes of this important study. A balance between human welfare and wildlife conservation concerns is a central issue across this whole region and an important focus for study.

**EARLY WARNING SYSTEM FOR
MONITORING LIVESTOCK NUTRITION AND
HEALTH FOR FOOD SECURITY OF HUMANS
IN EAST AFRICA (LEWS)**

This is an outstanding project that is doing quite well in the region. A network of monitoring stations is now established across the region in the principal livestock producing areas, and calibration of the model for the evaluation of data from cattle and goats seems to well established. The LEWS model is filling an important need as a potential tool for regional policy development.

However, there is some reason for concern about the sustainability of the project. Can the model that is under development be fully implemented after the project leadership pulls out? Who are the likely audiences for the model? I agree with the PAC suggestion that the LEWS model might find an institutional home through ASERECA via its link to the FEWS network. In addition, there is a potential for linking the LEWS model to the IMAS project and perhaps also to the risk management project – both part of the GL-CRSP. In each of these scenarios, the linkages would assist the PI's in efforts to regionalize this exciting project.

The PI and his colleagues are making commendable progress on implementation of the monitoring system as noted above. I am especially impressed by their efforts to “Africanize” the NUTBAL program for the livestock sector in the region. Additionally, the project leadership is to be commended for its efforts in capacity development. I note the

problems that they have had with the loss of key individuals whom they have trained, but point out that this can also be viewed as a product of the excellent training that has been done. I also note that, unlike most other component projects of the GL-CRSP, the LEWS project has made a proactive effort to return the benefits of its work to the United States through the implementation of a Texas EWS program. This fulfills one of the important goals of the CRSP and is a mark of excellence of this group.

Finally, it is important to note that the LEWS project has had tremendous success in leveraging additional resources for their work. The documentation that I have seen suggests that the project has leveraged about \$1.46 million for which they deserve to be complemented.

**ROLE OF ANIMAL SOURCE FOODS IN
IMPROVEMENT OF DIET QUALITY AND
GROWTH AND COGNITIVE DEVELOPMENT
IN EAST AFRICAN CHILDREN**

Unlike other components of the GL-CRSP, this project is a large experiment. I am impressed with the quality of the experiment, the design, the complexity of the undertaking, and the potential for very important results to come from it. The PI and her team are to be commended for the effort and energy that has gone into the project. It is also remarkable to note how successful the PI and her team have been at leveraging local resources and building a solid local team. The PI clearly has generated a high level of affection among her Kenyan counterparts, and must be complimented for

this. The admirable teamwork, strong institutional partnerships, shared responsibility, and empowerment of local leaders are signs of a mature and successful activity.

Much data has been generated already and the team must work hard at this point to complete the data entry and analysis. The conclusions to be drawn from the work will only be useful to the extent that energy is put into the completion of the analysis. I am concerned that the data that was presented during the Mexico workshop was rather weak, especially with regard to the marginal differences observed in the contrasting populations. I do not believe that at this point any sound conclusions can be drawn from the data, but I realize that the analysis is incomplete. Furthermore, I am concerned that there may be some confounding effects with regard to infection, family socio-economic status, family structure and so forth that potentially are clouding the interpretation of the results. One key element in this complexity is that there is really not a good control for existing baseline performance of a reference cross section of children.

I also urge caution with respect to the Vitamin A data. It appears to me (based on my conversations with the PAC) that the conclusions relative to Vitamin A deficiency are possibly due to infection loads in the children rather than to actual high-risk Vitamin A deficiency in the population of children under study. I have learned subsequent to the Mexico meeting that the issue of infection relative to Vitamin A deficiency is being addressed by the project and that funding has been secured for additional studies to discern

whether, in fact, the researchers are seeing a real Vitamin A deficiency or an artifact related to heavy infection load in the target group of children in the study.

I note that a policy workshop has been scheduled for April 2000. I support the PAC in their recommendation that the team consider delaying the workshop until the second cohort of data is more complete. My understanding is that this has been done.

Financial shortfalls that have impeded data analysis need to be corrected with additional resources provided perhaps by the ME. This will be helpful to the continuation of the current high level of activity and the realization of the goals of the project.

INTEGRATED TOOLS FOR LIVESTOCK DEVELOPMENT AND RANGELAND CONSERVATION IN CENTRAL ASIA

This project addresses an issue of global significance, namely the existence of a “missing” carbon sink. The design of the study to associate this sink with the rangelands of Central Asia is not only important but also significant to furthering our understanding of global warming problems. Monitoring stations for measuring carbon flux across the region have now been established, and the project leadership is providing for the development of local expertise. Strong local teams have evolved under the leadership of the PI and his colleagues. In addition, it is noteworthy that the PI leveraged funds from ALO to supplement the funds in the core budget from the GL-CRSP and to bring Central Asian

scientists to the United States for advanced study. All of this is commendable and reflects well on the project, particularly given that this is not an easy region of the world to work.

I also applaud the development of the GIS model for the region. In particular, the development of a spatially integrated study of markets in Kazakhstan is commendable. Will policy implications of this study be disseminated in the region? For example, the transportation implications of the spatial study on markets are important and need to get to the individuals responsible for decision-making in the region. One additional important question: To whom will the generalized GIS model be disseminated and for what purposes?

The project is well integrated within the region. The sub-projects make sense as a whole, and the entire project fits together very well. The leadership of this project has made a good faith effort to regionalize in a difficult political environment, and must be commended for this effort.

One important suggestion: Could elements of this project be linked with elements of the other Central Asian project, particularly the sheep breeding portion? Although there are questions about the direction of that work, it is nevertheless a consideration for broadening the base of US scientists on the project.

IMPACTS OF ECONOMIC REFORM ON THE LIVESTOCK SECTOR IN CENTRAL ASIA

This project is contributing useful studies of

change in farming systems in Central Asia with emphasis on Kazakhstan. It would be useful, if resources would permit, to extend the descriptive study into other Central Asian countries to develop a comparative component to the project. Comparison of regional differences in the evolution of agriculture in the post-Cold War period in the region would be helpful in furthering our understanding of the region's economy and assessing various policy alternatives. I also commend the project for the conference in Almaty in January 1999 at which a number of senior government officials were present. This was an important step towards integration of the project with the policy makers in the country.

The survey work mentioned above is largely descriptive. I believe that to the extent that it can be done, a more analytical study should be conducted with more quantitative data generated. One important question that such data might help to answer is: What is the relationship between the dramatic decline in the size of the livestock (sheep) herd in Kazakhstan and (positive?) environmental consequences in grazing lands? Such a study could be linked to the other Central Asian project with respect to carbon sequestration and changes in carbon flux over time.

The survey data also documents changes in the rules governing land tenure in Kazakhstan. Question: Are these rules being implemented? What have been the impacts on production, wealth accumulation, markets, and the economy? Also, it would be useful to consider ways in which the data collected in the surveys could be factored into the generation of

alternative policy outcomes. Could such information be useful to government leaders? What are the policy options implicit in the changing agricultural setting in the country? What impacts might be measured in the outcome of these activities?

I also note that this project looks like two separate projects. The sheep breeding activity appears to be disconnected from the economic studies that are so central to the project. What is the linkage between the two? How are they connected in a logical framework? Is one essential to the other? Is it possible that the emergence of new market opportunities for sheep meat in the Middle East could link the two sub-projects? These questions are in need of clear answers.

Finally, it was noted by the members of the PAC that animal scientists question the introduction of the prolificacy trait in the harsh environment of Central Asia. Is this a wise choice? It is suggested that this trait be closely monitored to make sure that it is a logical choice in the locale where it has been introduced.

Appendices

**GLOBAL LIVESOCK CRSP YEAR 2000 INTERNATIONAL CONFERENCE
MARCH 15 - 18, 2000
AUTLAN DE NAVARRO, MEXICO**

AGENDA

15 March 2000

8:00 – 9:00 am Registration

9:00 – 10:00 am Welcome

Mtro. Salvador Acosta Romero
Rector of the Centro Universitario de la Costa Sur
Universidad de Guadalajara

Mr. Paul E. White, Director
USAID Mission to Mexico

Dr. Montague W. Demment, Director
Global Livestock CRSP
Management Entity, University of California, Davis

10:00 – 11:00 am KEYNOTE: Logistics, Tactics, and Strategies: The Value of Spatial Awareness

Dr. Jerry Stuth
Texas A&M University System
GL-CRSP Livestock Early Warning System Project

11:00 – 12:00 pm GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Livestock –
Natural Resource Interfaces at the Internal Frontier (PLAN)

Dr. Timothy Moermond, University of Wisconsin – Madison
Ms. Sara Baez, Terranueva, Ecuador
Prof. Jorge Ruiz, ZONSIG, Bolivia
Prof. Carlos Vacaflares, PROMETA, Bolivia
Prof. Lazaro Sanchez, IMBECIO, Mexico

12:00 – 12:30 pm Break

12:30 – 12:45 pm The Role of the University of Guadalajara’s Centro Universitario del Costa Sur in Conservation and Environmental Research and Training in Southern Jalisco.

Dr. Salvador Acosta Romero
Rector del Centro Universitario de la Costa Sur
Universidad de Guadalajara

12:45 – 1:00 pm Conservation Management: The Experience of the Sierra de Manantlán Biosphere Reserve

Dr. Sergio Graf, Director
Sierra de Manantlán Biosphere Reserve

1:00 – 1:30 pm The Role of the Manantlán Institute of Ecology and Conservation of Biodiversity in the South Jalisco Region.

Professor Luis Engenio Rivera Cervantes
Chair, Department of Ecology and Natural Resources
Universidad de Guadalajara Centro Universitario de la Costa Sur
Global Livestock CRSP PLAN Project

1:30 – 2:00 pm Conservation and Management of the Ayuquila Watershed

Professor Luis Manuel Martinez
Instituto Manantlan de Ecología y Conservación de la Biodiversidad
Universidad de Guadalajara Centro Universitario de la Costa Sur
Global Livestock CRSP PLAN Project

2:00 – 2:30 pm The Integration of an Academic Institution with a Social Development and Conservation Project.

Professor Enrique Jardel
Instituto Manantlan de Ecología y Conservación de la Biodiversidad
Universidad de Guadalajara Centro Universitario de la Costa Sur
Global Livestock CRSP PLAN Project

External Evaluation Panel Report 1999

2:30 – 3:00 pm Environmental Dimension in Public Policies Generations: Analysis of National Conditions and Local Policies

Ms. Sara Baez
Director of Terra Nueva, Ecuador
Global Livestock CRSP PLAN Project

3:00 – 5:00 pm Lunch

5:00 – 7:00 pm Poster Session
Included in the poster presentations are student authors who successfully competed for travel grants enabling them to attend and present their work at the GL-CRSP conference.

16 March 2000

9:30 – 10:30 am GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Impacts of Economic Reform on the Livestock Sector in Central Asia

Dr. Kenneth Shapiro, University of Wisconsin – Madison
Dr. David Thomas, University of Wisconsin – Madison
Dr. Nurlan Malmakov, Kazakh Institute for Sheep Breeding
Dr. Meruert Abuseitova, Kazakh Institute of Oriental Studies

10:30 – 11:30 am GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Integrated Tools for Livestock Development and Rangeland Conservation in Central Asia

Dr. Emilio Laca, University of California – Davis
Dr. Baktiyor Mardonov, Samarkand University, Uzbekistan
Dr. Valerii Nikolaev, National Institute of Deserts, Flora and Fauna, Turkmenistan
Mr. Alexandr Nikolayenko, Institute of Ecology and Sustainable Development, Kazakhstan

11:30 – 12:30 pm GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Early Warning System for Monitoring Nutrition and Livestock Health for Food Security of Humans in East Africa

Dr. Paul Dyke, Blackland Research Center, TAMUS
Dr. Jerry Stuth, Texas A&M University
Dr. Abdi Jama, Texas A&M University

12:30 – 1:00 pm Break

1:00 – 2:00 pm GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Improving Pastoral Risk Management on East African Rangelands

Dr. Layne Coppock, Utah State University
Dr. Abdillahi Aboud, Egerton University, Kenya
Dr. Solomon Desta, Utah State University

2:00 – 3:00 pm GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Integrated Modeling and Assessment for Balancing Food Security, Conservation and Ecosystem Integrity in East Africa

Dr. Michael Coughenour, Colorado State University
Dr. Randall Boone, Colorado State University
Mr. Ole Kamuaro, Ministry of Environment, Kenya
Prof. E.G. Mtalo, University of Dar es Salaam

17 March 2000

9:30 – 10:30 am GLOBAL LIVESTOCK CRSP PROJECT PRESENTATION: Role of Animal Source Foods to Improve Diet Quality and Growth and Cognitive Development in East African Children

Dr. Charlotte Neumann, University of California – Los Angeles
Dr. Nimrod Bwibo, University of Nairobi, Kenya
Ms. Edith Mukudi, GL-CRSP Child Nutrition Project

10:30 – 11:00 am The Small Ruminant CRSP. Sustaining Agropastoralism on the Bolivian Altiplano: The Case of San Jos? Llanga.

Dr. Layne Coppock, Utah State University

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11:00 – 11:30 am Local Institutions: the Fundamental and Actual Base for the Use and Access to Natural Resources

Dr. Carlos Vacaflores, PROMETA, Bolivia
Global Livestock CRSP PLAN Project

11:30 – 12:00 pm Traditional Coping Mechanisms to Crisis Situations in the Pastoral Areas of the Greater Horn of Africa

Mr. Jean Ndikumana, ILRI
ASARECA-AARNET / Global Livestock CRSP LEWS Project

12:00 – 12:30 pm Spatial consideration of livestock marketing in Kazakhstan

Ms. Mimako Kobayashi, University of California, Davis
GL-CRSP Livestock Development & Rangeland Conservation Tools Project

12:30 – 1:00 pm Break

SPATIAL DIMENSION WORKSHOP

1:00 – 1:15 pm Introduction

Dr. Montague Demment
GL-CRSP Program Director, University of California, Davis

1:15 – 3:00 pm Panel Discussion: GIS Use in Global Livestock CRSP Projects

Pastoral Risk Management Project

Dr. Layne Coppock, Utah State University

Integrated Modeling and Assessment Project

Dr. Randall Boone, Colorado State University

Livestock Early Warning System Project

Dr. Jay Angerer, Texas A&M University

Livestock – Natural Resource Project

Dr. Jorge Ruiz, PROMETA

Dr. Gonzalo Piñeros, CDC

Livestock Development & Rangeland Conservation Tools Project

Dr. Richard Plant, University of California, Davis

3:00 – 4:00 pm Lunch

4:00 – 4:30 pm Group Work Instruction

Dr. Montague Demment
Program Director, GL-CRSP

4:30 Group Work–Division into small working groups

SPATIAL DIMENSION WORKSHOP (CONTINUED)

18 March 2000

9:00 – 10:00 Group Work (continues)

10:00 – 11:00 am Group Reports
Presentations by each group on their discussions and conclusions

11:00 – 11:30 am Discussion

11:30 – 12:30 pm Group Work–Follow-up work by each group

12:30 – 1:30 pm Final Presentations–Workshop working groups

1:30 – 2:00 pm Closing Remarks

Dr. Montague Demment
GL-CRSP Program Director
Management Entity, University of California, Davis

2:00 – 3:00 pm Lunch

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ADMINISTRATIVE MEETINGS

- 3:00 – 5:00 pm Program Administrative Council Meeting
- 3:00 – 4:00 pm Technical Administrative Council Meeting
All project collaborators
- 4:00 – 6:00 pm Team Meetings
- 7:30 PM Gala Fiesta

SCHEDULE OF MEETINGS

16 March 2000

- 8:30 – 9:00 Program Administrative Council Meeting with
PLAN Team Members
Lead PI, Timothy Moermond
- 9:30 – 3:00 Conference
- 4:00 – 4:30 Program Administrative Council Meeting with
LSER Team Members
Lead PI, Kenneth Shapiro

17 March 2000

- 8:00 – 8:30 Program Administrative Council Meeting with
LEWS Team Members
Lead PI, Paul Dyke
- 8:30 – 9:00 Program Administrative Council Meeting with
PRMP Team Members
Lead PI, Layne Coppock
- 9:30 – 3:00 Conference

18 March 2000

- 8:00 – 8:30 Program Administrative Council Meeting with
CNP Team Members
Lead PI, Charlotte Neumann

8:30 – 9:00 Program Administrative Council Meeting with
IMAS Team Members
Lead PI, Michael Coughenour

9:00 – 9:30 Program Administrative Council Meeting with
LDRCT Team Members
Lead PI, Emilio Laca

10:00 – 2:00 pm Workshop

3:00 – 5:00 pm Program Administrative Council Meeting

3:00 – 5:00 pm Technical Committee Meeting

19 March 2000

9:00 – 10:30 am Program Administrative Council Meeting

**GLOBAL LIVESOCK CRSP YEAR 2000 INTERNATIONAL CONFERENCE
MARCH 15 - 18, 2000
AUTLAN DE NAVARRO, MEXICO**

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GLOSSARY

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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
CO₂	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

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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
