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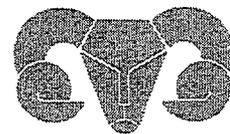
External Evaluation Panel

1994-1995 Report



Small Ruminant CRSP

EXTERNAL
EVALUATION
PANEL
REPORT
1994 - 1995



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INTRODUCTION

The last External Evaluation Panel (E.E.P.) Report for the Small Ruminant CRSP was submitted at the end of 1993 after Panel visits to several U.S. participating institutions and the countries of Indonesia and Bolivia. Severe fiscal restraints placed upon the SR-CRSP during 1994 did not allow for subsequent visitations. For this reason, no report could be prepared. During 1994 a total of \$800,000 was allocated for phase down and continuing research activities.

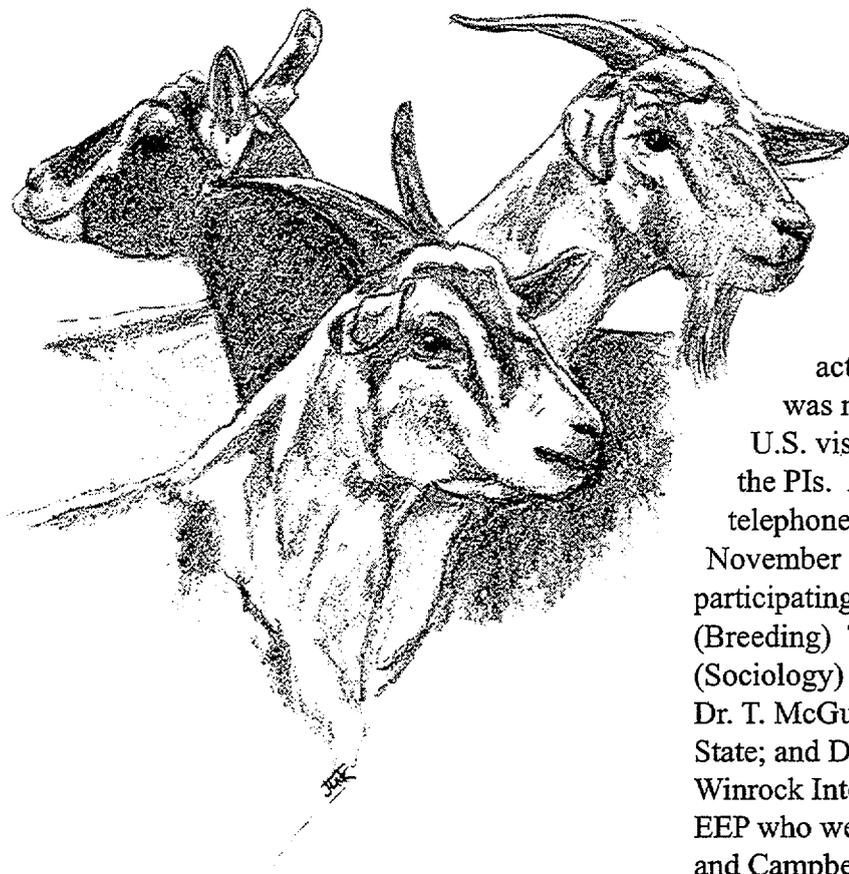
Late in 1994 a new Program Director, Montague W. Demment, was appointed. There was a resurgence of interest in the SR-CRSP, and in the possibility of extending, continuing, renewing and reforming it for the future. To that end, an Advisory Panel was formed, meetings were held, and plans were formulated during 1995. The Chair of the E.E.P. was invited to participate in these meetings on behalf of the Panel. To assist the planning process, the E.E.P. was asked to visit Kenya, carry out a review of the programs there, and to conduct a "paper review" of the programs in Indonesia and Bolivia.

Due to the shortage of time available and the urgency of the matter, a conventional review including visits to both a U.S. and an overseas institution (as outlined in previous reports) could not be undertaken. Instead, a telephone conference was held with the U.S. Principal Investigators (PI) involved with Kenya, followed by a 7-day visit to Kenya in November. For Indonesia and Bolivia, we

based our report on papers and reports submitted by the P.I.s and the Management Entity (ME). The Panel was informed that there was considerable interest in both Kenya and East Africa as a site for the "new CRSP". We also received slightly-modified scopes of work from the Program Director (see Appendix A), as well as a scope of work from USAID (see Appendix B). The Panel made every attempt to comply with these within the allotted time frame.

For this report the composition of the E.E.P. was unchanged. Thadis Box, Glen Vollmar and Gordon Campbell visited Kenya, while Edna McBreen and Hudson Glimp participated in the "paper review". Dr. Glimp graciously hosted the Panel during the writing of this report at his home institution, the University of Nevada. The work of the Panel was greatly facilitated by many colleagues, notably Joyce Turk, Tag Demment, and Jim Scott. Susan Johnson is to be highly commended for her patience, expertise and skill in transcribing and polishing this report, and Patterson Semenyé did his usual superlative job of guiding us around Kenya — all of Kenya! Thank you all. We trust that this report will be both a constructive critique of past work, as well as a useful tool for crafting the "new global livestock CRSP".

KENYA REVIEW



U.S. PARTICIPANTS REVIEW

A very short period of time elapsed between the request for an EEP review of Kenya and the actual departure. For this reason, it was not possible to carry out both a U.S. visit and an extensive preview with the PIs. At the request of the PIs, a telephone conference was held on Friday, November 3rd in lieu of a visit. Those participating in the call were: Dr. J. Taylor (Breeding) Texas A&M; Dr. C. Valdivia (Sociology) University of Missouri, Columbia; Dr. T. McGuire (Animal Health) Washington State; and Dr. W. Getz (Production Systems) Winrock International. The members of the EEP who were going to Kenya; Box, Vollmar and Campbell, also participated. Each of the above-mentioned representatives made brief presentations describing the major changes made in projects and personnel since the last review in 1993, and answered questions from the Panel. A universal concern was expressed by the Kenya investigators regarding the prolonged period (April 1994-July 1995) during which funds for the Kenya project were cut and later deleted for a year, and that funding had only recently been restored (July 1995). While some bridging funding had been found, the lack of CRSP funds was a crucial consideration in the evaluation process. Duly noted!

HOST COUNTRY REVIEW

Introduction

Three members of the EEP — Drs. Box, Campbell and Vollmar — visited Kenya from Wednesday, November 8th until Tuesday, November 14th, 1995 and carried out a review of the Small Ruminant CRSP activities there. Dr. Patterson Semenyne made excellent arrangements for the itinerary, which was extensive and exhaustive. It is included as Appendix C.

ANIMAL HEALTH

Introduction

In evaluating the SR-CRSP progress since the 1993 review, it is important to note that “The funding levels for the animal health component continued to drop from 1992. The immediate effect of both declining and unpredictable funding levels is to be found on disruption of the original timeframe for the project. It is important that a review of the progress made by this project should be taken vis-à-vis the project expected budget and the actual funding remitted. The funding situation deteriorated when all funding ceased in September 1994. This unexpected turn of events drastically hindered our progress on various research fronts. With the recent (October 1, 1995) resumption of funding, work on the multivalent virus-vectored vaccine has gone at full scale” (Small Ruminant CRSP Kenya - 1995 Achievements and Impacts). It must be stated at the onset that, due to recent budgetary cuts making bridging and discretionary funds virtually non-existent, cessation of funding for a period of one year would, normally, have resulted in complete cessation of that activity in most domestic and foreign universities. The animal health Principal Investigators are, therefore, to be commended for keeping this

component alive in Kenya, and their progress must be considered within this context.

There are several components of the animal health component thus:

A. Multivalent virus-vectored vaccine for sheep and goats.

The production, testing and use of such a vaccine has been a major goal of the animal health component since its inception. The current concept involves the production of suitable, thermostable, bivalent vaccines (sheep and goat pox containing another component, hence bivalent). Once these bivalent components are produced and tested, “cocktails” of bivalent vaccines can be formulated for regional diseases. At the time of writing, a bivalent recombinant, capripox containing Rift Valley Fever is the first of these. It is ready and approved for testing in mice; a process, which should begin prior to the end of 1995. At least two other potential bivalent vaccines are presently in progress: one for Nairobi sheep disease, and the other for Haemonchus. “It is anticipated that at least 2

more years will be required to accomplish all the crucial aspects of the development, testing in animals, formulation, and technology transfer of the multivalent vaccine” (Small Ruminant CRSP Kenya - 1995 Achievements and Impacts).

B. Improved diagnosis of sheep and goat disease.

The search for suitable candidate antigens, the availability of a modern biotechnology lab and trained personnel in Kenya, as well as considerable networking amongst scientists, has helped in the important development of highly-sensitive and specific reagents for the detection of important small ruminant diseases including: C.C.P.P. (contagious caprine pleuropneumonia), heartwater and anaplasmosis. The current resident scientists: Drs. Rwambo and Shampole, have developed a considerable interest in this area, and are capable of providing a unique and useful diagnostic service for the region.

C. Diagnosis of lentivirus infections.

Since the last report, the maedi virus has been isolated from sheep in the Laikipia district.

D. Sustainable community-based animal health.

During the past two years, in support of the distribution of the KDPG, attention has been paid to providing a suitable program for health management in the various zones of Kenya. This was in response to the considerable morbidity and mortality rates experienced thus:

Kid mortality rate Ol'Magogo	15%
Adult mortality reported after transportation from Ol'Magogo to coast	50%
Adult mortality rate reported in new locations at coast	50%

The cost effectiveness of the community-based health programs is also being analyzed.

The Impact of Research Achievements

The basis for the establishment and maintenance of animal health is in general terms:

1. “Fit” stock
2. Optimal nutrition and husbandry
3. Accurate enumeration and diagnosis of disease
4. Efficient and effective prevention/control of disease.

Over the past 15 years, the SR-CRSP has done much to provide “fit” stock — the KDPG for East Africa, and to see that the animals are well fed and husbanded. It must continue to carefully and accurately record the morbidity and mortality rates, and try to reduce them. The current efforts at accurate diagnosis are essential for Kenya and the region. The provision of custom-made, multivalent vaccines has incredible potential for both Kenya and the region, as does the Haemonchus component, for the world. This, despite the fact that the payoff for the Haemonchus work is still a long way off.

Institutional Development and Training

The presence of the SR-CRSP has contributed most substantially to the establishment of a first-class animal biotechnology research team at Kabete. The present unit, though modest in size and equipment, is capable and engaged in the deployment of up-to-date biotechnological techniques in the service of animal health, diagnosis, research, and the prevention of

disease. The present researchers are in daily contact with the rest of the global scientific community, as well as their American colleagues in Washington and Colorado. They share equipment and ideas with fellow scientists at ILRI. The development of this unit is a great credit to the SR-CRSP, notably Drs. McGuire and Rurangira, Dr. Sam Chema and KARI Director Dr. Cyrus Ndirutu. Present plans are to amalgamate the unit in the near future with the plant biotechnologists under KARI. The presence of, and the significant contributions made by, this unit are testimony to the cautionary thought that "the CRSP process (of research and training) might well be more significant (in terms of people and institute building) than other (perhaps more tangible) products."

Objectives, progress and funding

The primary objective of the animal health component has, for a decade, been the multivalent vaccine. While this has not yet come to fruition, the project has produced many "side" benefits in terms of basic research on sheep and goats, experience for U.S. scientists, graduate students, and veterinary students otherwise unavailable in the U.S.A., a viable animal biotechnology research lab in Kenya run by Kenyans, practical veterinary care for Kenyan conditions, world-class research on ruminants both in Kenya and the U.S.A. and a novel approach to custom-built vaccines for global health constraints in ruminants.

Because good scientists can always be expected to pursue promising leads, and the fact that defined, finite projects are absolutely necessary for graduate training (theses projects); deviations made from the mainstream project, based upon the laudable pursuit of said leads, grist for theses, and

simple necessity (lack of SR-CRSP funding), have already produced useful spin-offs; e.g., the heritability of *Haemonchus* resistance, the presence of maedi in Kenyan sheep (and its vertical transmission), and the improved diagnosis of infectious diseases in East Africa.

Evaluation of the progress relative to funding stability

Given the declination and absence of SR-CRSP funding as noted above, it is surprising to the EEP and commendable for the PIs that the animal health component survived to see the dawn of 1996!!

Biological/Social Sciences Integration

It is clear that KARI has made successful efforts to incorporate socioeconomics into various aspects of its work; research management, priority setting, gender issues, etc. Plans have been made to include socioeconomics with the animal health component in the use of the CCPV vaccine and the provision of veterinary services and advice for KDPG producers.

Funding/fiscal management since the last EEP review

As noted above, there have been considerable problems associated with decreased and non-existent SR-CRSP funds for this program, and remarkable efforts were undertaken to keep it operational. The administrations of Washington State University, KARI, and IAC are to be commended on their responsible and cooperative attitude in this dilemma.

A change was made in the administrative hierarchy when the new director, Dr. Tag Demment, appointed Dr. Patterson Semenyé as host country site representative. This change

was most welcome in the halls of KARI where it was found to be a step towards improved all-round communications. It would appear to have been a less welcome change in the eyes of some of the scientists, where it was viewed, reportedly, as extra invigilation and an abridgement of their responsibility and authority. The change brought some additional angst to all concerned due to some misunderstanding of the Project Director's actual intent.

Buy-ins and other funding

There would appear to be an opportunity, once the first bivalent vaccine is developed and tested, of interesting several major drug companies in its further development.

Institutional responsiveness

All the institutions involved in the Animal Health component, KARI, WSU, CSU, etc. have been most flexible and responsive to the needs of the actual program, having moved resources, personnel, etc. around to ensure that the work goes on despite the exigencies of funding. Both ILRI and WSU have been particularly supportive of the SR-CRSP work at KABETE.

Evaluation of current status

A. The training program undertaken by WSU for the most part has been responsible for the establishment of a free-standing, world-class animal biotechnology lab in Nairobi — no mean task and huge credit to WSU, Dr. McGuire and the SR-CRSP

B,C. The collaboration and cooperation among all units and institutions involved in this program have been superb.

Evidence of institutionalization in host countries

The scientists involved in the animal health component are world-class. They work with the best of collaborators in the USA, the UK, Europe and Australia and publish in first-class, refereed journals.

The integration of this program with other East African programs; e.g., in Kenya, Tanzania and Uganda, is very promising and it clearly has the full and enthusiastic support of the KARI upper-level administrators.

Appropriateness, Balance and Changes

The Animal Health component is currently subdivided into six components (see SR-CRSP Kenya, 1995, Achievements and Impacts).

1. Inactivated CCPP vaccine
2. The multivalent virus vectored vaccine
3. Improved disease diagnosis
4. Lentivirus infections
5. Sustainable animal health

to this might be added

6. Haemonchus resistance.

The above represent a huge spectrum of activities, well beyond the scope of present CRSP funding. With the possibility of a future CRSP, it would seem appropriate for the current scientists to reconsider their options, the country's (region's) priorities and the global plan to focus the activities in the future.

RECOMMENDATIONS

The EEP would recommend consideration of the following:

1. Inactivated CCPP vaccine and the lentivirus infection components terminate and be incorporated as minor components of the Sustainable Animal Health component since pneumonias are thought to be an important cause of morbidity and mortality in East Africa.
2. The multivalent vaccine, allow two years of further funding to “accomplish all the crucial aspects of the development, testing, formulation and technology transfer.”
3. Improved disease diagnosis should be continued and expanded in accordance with the region’s needs and the interests of the resident scientists. This would allow the exploitation of 10 years of work and recognize that diagnosis is the cornerstone of sustainable animal health.
4. Continuing and expanding sustainable animal health activities has been a constant recommendation of the EEP in Kenya (and in Indonesia and Bolivia). It is ludicrous to place animals on the farms and accept 50% mortality rates during transportation and acclimatization. This component should utilize some of Kenya’s trained and currently unemployed veterinarians.
5. Haemonchus (endoparasite) resistance. This is a major project of global dimensions and significance. It should be reconsidered by the CRSP as a freestanding, separate, multidisciplinary, large, decade-long program with a high level of priority. It requires a good site, a multidisciplinary approach and the inclusion of several card carrying parasitologists.

The EEP further recommends that the future program include Uganda and Tanzania because of major similarities in disease prevalence, mutual interest and the clear advantages of symbiosis. The EEP further indicates that the multivalent vaccine, improved disease diagnosis, haemonchus resistance and the animal health planning for small farms all have global application and significance.

PRODUCTION SYSTEMS

Introduction

Since the last EEP visit, there have been substantial changes in the Production Systems Project which at that time, 1993, and for the previous decade, had focussed on work at the Maseno station and the surrounding countryside in Western Kenya. Research work has ceased at that station. Following PAC recommendations in 1993, the project moved to Eastern Kenya on the coast where on-farm testing commenced in August 1994 with the introduction of the "true" KDPG (i.e., the 4-way cross). The objectives of this were to carry out an impact study on the effect of the KDPG on farms in a new region and to use the findings of the study to solicit continued support for the SR-CRSP.

The new research study consists of 100 smallholder farms divided into 5 groups of 20 from 5 villages, Kitanga, Kimtwa, Vuga, Matuga and Kakanjuni with 10 KDPGs distributed per village.

Research Results

In a general way, this project highlighted what is necessary for transferring these goats and this technology to a new site with the appropriate feed, management and health advice. This work is now well underway with the following results.

Mortality rates of does and kids were high (see table 1), particularly on translocated does. The growth rates of kids on farms were good (see table 2) and the milk off-take and productivity indices calculated (see tables 3 and 4) (All tables taken from Preliminary Report on the Kenya Dual-Purpose Goat Impact Study by P. Semenyé, submitted to the EEP, November 2, 1995.)

Impact of this research

The primary significance of this research was to clearly indicate that the KDPG animals can be relocated successfully with farmers and

Table 1: *Mortalities of does and kids on-farm*

Village	Does			Kids		
	Out of 1)	Dead #	Rate %	Out of 2)	Dead #	Rate %
Kitanga	10	4	40	17	3	18
Kimtwa	11	5	45	25	8	32
Vuga	10	3	30	19	2	11
Matuga HPI	12	8	67	9	4	44
Kakanjuni	10	2	20	9	1	11
Overall	53	22	42	79	18	23

Table 2: Liveweight of KDPGs on-farm (kg)

Village	Sex	Birth Wt.	4 months	12 months	over 36 months
Kitanga	F	3.0 SD 1.0 (10)	16.0 SD 4.0 (3)	28.5 SD 6.6 (4)	36.0 SD 6.9 (6)
	M	2.8 SD 0.4 (2)	22.0 SD 0.0 (1)	34.0 SD 0.0 (1)	
Kimtwa	F	2.1 SD 0.4 (12)	15.5 SD 0.96 (3)	19.2 SD 5.4 (5)	35.4 SD 4.8 (5)
	M	2.9 SD 0.6 (11)	16.8 SD 2.6 (8)	27.3 SD 4.8 (6)	49.0 SD 0.0 (1)
Vuga	F	2.6 SD 0.2 (9)	7.0 SD 0.0 (1)		36.1 SD 4.5 (7)
	M	2.8 SD 0.4 (14)	13.7 SD 7.6 (3)		
Matuga HPI	F	3.5 SD 0.0 (1)			37.8 SD 4.6 (4)
	M	3.0 SD 0.0 (1)	21.0 SD 0.0 (1)		
Kakanjuni	F	3.0 SD 0.0 (1)	16.5 SD 0.7 (2)		38.0 SD 6.2 (2)
	M	2.9 SD 0.8 (4)	18.0 SD 0.0 (2)		50.0 SD 0.0 (2)
Overall	F	2.6 SD 0.7 (33)	14.8 SD 3.6 (9)	23.7 SD 7.9 (8)	36.6 SD 5.2 (28)
	M	2.8 SD 0.5 (32)	16.9 SD 4.3 (14)	27.8 SD 5.3 (6)	49.7 SD 0.6 (3)
On-station	F	2.6 SD 0.6 (30)	12.7 SD 2.1 (20)	29.3 SD 6.0 (10)	43.5 SD 6.8 (20)
	M	2.8 SD 0.5 (27)	14.8 SD 2.7 (15)	31.8 SD 5.6 (6)	55.0 SD 7.0 (3)

() Number of KDPGs

Table 3: Milk off-take of KDPGs on-farm

Village	N	Milk off-take			
		Lactation length (days)	AM (ml)	PM (ml)	Lactation Yields (kg) (1)
Kitanga	6	48 SD 72	500 SD 130	470 SD 185	46 SD 17
Kimtwa	6	90 SD 37	370 SD 170	330 SD 155	63 SD 29
Vuga	10	85 SD 68	560 SD 210	380 SD 125	80 SD 28
Matuga HPI	1	49 SD 0.0	320 SD 100	-----	16 SD 0.0
Kakanjuni	3	111 SD 13	740 SD 170	-----	82 SD 19
Overall	26	79 SD 59	480 SD 210	380 SD 177	68 SD 30
On-station	25	110 SD 87	600 SD 230	-----	66 SD 25

Table 4: Productivity coefficients and indices of KDPGs on-farm

Productivity Parameters	<u>Kitanga</u>	<u>Kimtwa</u>	<u>Vuga</u>	<u>Matuga HPI</u>	<u>Kakanjuni</u>
Doe Survival (%)	60	55	70	33	90
Kidding (%)	85	85	85	85	90
Kid Survival (%)	82	68	89	56	90
Kid Wt. at 1 yr. (kg)	32	23	26	26	25
Lactation Milk off-take (kg)	46	63	80	16	84
Average doe wt. (kg)	36	35	36	37	38
Productivity doe/year (kg)	16	9	19	5	25
% of the doe live-weight	44	26	52	14	65

The doe productivity index is computed as the product of doe viability % x kidding % x kid viability % x kid weight at 1 year (kg) + doe viability x kidding % x lactation milk off-take kg x 0.1025.

extension agents educated in their management. While there were considerable losses in transport and upon relocation, this can be expected to improve with experience, investigation of cause(s) and fine tuning. In addition and importantly, the goats were welcomed with great enthusiasm and a high level of farmer cooperation.

The production researchers have also noted the following people impacts:

1. A significant positive contribution from and role for grandfathers and grandmothers in those families with KDPG's.
2. A major farm-asset increase from the KDPG.
3. A contribution of goat manure to the farms.
4. Premium prices received by the farms for weaned kids.
5. A positive gross margin of KSH 1307.00 per doe/kid unit.

While these are early results, there is no doubt that this coastal project was very welcome and is a very useful add-on for the farmers, extension agents and the regional research stations involved.

It should be noted that from March 1994 until June 1995, Dr. Semenye was paid by the National Agricultural Research Program (NARPII) through the MidAmerica International Agricultural Consortium (MIAC) and SR-CRSP met most of his operational expenses. He reports that "Without the assistance of MIAC and approval of KARI to utilize funds from NARPII (these) achievements would not have been possible".

Evidence of biological/social sciences integration

The production systems project highlights once more that trained personnel can quickly transfer technology to new sites and train new people to carry on successfully and that good collaboration between countries, institutions and personnel works wonders in terms of results even under very adverse circumstances.

The production systems evolved under Drs. Getz, Semenye and Onim can be transferred, after suitable adaptation to other locations (we believe it has already been transferred with modifications to Tanzania). This project can be handled very well at other sites by Kenyans with a minimum of U.S. involvement.

RECOMMENDATIONS

1. It is the view of the EEP that production systems and any other animal production project must have a sustainable Animal Health program associated with it.
2. The Production System research program in Maseno is an excellent Farming Systems research and training program involving a strong multi-disciplinary team. We strongly encourage the documentation of the essential elements of this program.

BREEDING

Introduction

The breeding component of the Kenya SR-CRSP has concentrated on the development of a Kenya Dual Purpose Goat (KDPG) since the last EEP evaluation. This synthetic breed is composed of a 4-way cross of East African, Galla, Toggenberg, and Anglo-Nubian goats. Although new leads have developed for breeding a Haemonchus resistant strain within the synthetic breed, the breeders are following research techniques and a breeding protocol established early in the project.

The project now has 1278 goats, of which 450 are KDPGs, 569 are 4-way crosses, and the remainder F1 animals of various crosses. A little over half the animals are females. Most are kept at KARI facilities in Ol'Magago. A breed association for KDPGs has been established.

Purebred goats have been placed with model farmers in villages in the Machakos District and in two locations on the Coast. The demand for goats at the village level appears to be high. The placement of goats in villages is done in cooperation with Extension personnel and offers ready access to farmers to improve the whole farming system.

Plans call for using private breeders to help multiply and distribute the improved goats in Kenya. Several breeders have been identified who are interested in multiplication breeding. The potential breeder visited by EEP has an established record of breeding improved goats, already provides bucks to surrounding farmers,

and knows the problems of maintaining a breeding herd.

Improved goats are in great demand and the KDPG has served well to increase the awareness of improved goats in Kenya and in KARI. The placement of improved goats offers good extension opportunities to improve the production system. We noted good cooperation between components in SR-CRSP, between CRSP and Government of Kenya agencies, and between research and extension personnel.

It is difficult to tell how much of the demand for improved goats is due to SR-CRSP and how much due to earlier projects by international organizations and bilateral donors.

Although the KDPG is purported to be an improved goat, there are no scientific comparisons of KDPGs with other crosses and breeds which demonstrate the claimed superiority. We were shown no data where KDPGs were compared with other goats under the same management. Empirical data and visual observations indicate the KDPG managed by KARI is superior to native goats under traditional management. One paper on lactation curves, using very low numbers shows 4-way cross goats peak in lactation later than other goats and give more total milk. True KDPGs were not in the study .

The training program has produced competent and dedicated breeders in Kenya. Government of Kenya breeders are in contact with U.S. personnel through email and the internet. Cooperation between PIs and host country personnel appears positive and productive.

The dedication of Kenya personnel and PIs can be demonstrated by the innovative and creative ways they kept the project alive during the funding hiatus by CRSP. Working overtime, using a variety of funding sources, and close cooperation with other projects allowed the breeders to keep the KDPG herd intact, increase its numbers, and make plans for distribution of the goats to farmers.

Social scientists in KARI, as well as extension social scientists, were used in evaluating and selecting the villages and model farmers where KDPGs were placed. Social scientists plan to follow up on the impact of improved goats and management at the village level.

The project is to be commended for continuing in spite of uncertain funding and a long term hiatus in receiving funds. Some farm help was not paid for months. Travel was difficult.

Currently the breeding project is healthy and the personnel optimistic. There is good collaboration between U.S. and Government of Kenya personnel. The KARI director is aware of the problems and highly supportive of the project. The AID Mission representative is generally supportive of the breeding program, but he has not been on the ground at many of the locations nor is he intimately familiar with the needs of the project.

Future work includes making more KDPGs available through the use of private breeders and the development of a Haemonchus resistant strain of the KDPG. The use of the

private sector for increasing numbers is to be commended. Distribution to the private sector will begin as soon as the plan is approved.

H. contortus is a world-wide parasite (worm) that infects millions of sheep and goats. Genetic resistance to parasites has long been reported in the scientific literature. If a resistant strain of KDPGs could be developed, it would have impacts worldwide.

However, it is our opinion that the breeding of a Haemonchus resistant strain of goat should be approached as a separate project. We believe that the danger of confounding the current breeding project is great if the resistant strain research is conducted within the current project.

A total of 12 manuscripts have been accepted or published in peer reviewed journals during the last 2 years. All have received funding or support from SR-CRSP. Most are basic science papers dealing with genetic markers.

Relationship between research workers is good and lines of communication open. PIs deal directly with Government of Kenya personnel. KARI administrators are aware of and appreciate the breeding work. Most of this goes on without the need of the Management Entity. USAID Mission personnel are not directly involved in the work either. The system appears to work and creativity is high.

RECOMMENDATIONS

1. The Kenya Dual Purpose Goat (KDPG) is now a reality. The following points should be emphasized:

a. We should be careful about the certainty with which we call the KDPG a breed. Geneticists throughout the world would insist on 3-5 generations (i.e., F_3 to F_5 generations) of intensive selection before breed stabilization.

b. For the reasons discussed above, we strongly recommend a continued effort by KARI scientists and breeding research in the breed development process.

c. Good basic comparisons of the KDPG with local Galla and East African Goats for meat and milk production are important to document the genetic progress that has been achieved. These comparisons should be made at the smallholder farmer level.

2. Continued KDGP breed development and dissemination.

a. Kenya research and extension specialists should work with the breed association and individual breeders to assure that performance-based standards are used as registry criteria.

b. Breed multiplication can proceed in a variety of approaches, through continued KARI research breeding herds, private large-scale breeding herds, and continued upgrading from two-way crosses to the 4-breed synthetic. Breeders must apply and herds must be certified by the registry in this process.

c. Surplus males should be disseminated to the maximum extent possible to individual farmers and former groups.

3. The research on the Haemonchus resistant strain is laudable, but it must be re-emphasized (see previous EEP reports) that this is not the primary objective of the KDPG research and should in no way interfere with the development of the Dual Purpose Goat.

4. There is international interest in the Kenya DPG. As a word of caution, security of animal health concerns almost dictates export via semen beyond the East African region.

5. The CRSP researchers and PI's should be commended for their innovation in keeping the DPG project activities moving during the year of no DPG CRSP budget.

SOCIOLOGY AND ECONOMICS

A Socioeconomics group has been established in KARI. An integrative structure is in place at the KARI Research Centers that allows the interaction and collaboration of socio-economists and biological scientists. During the year that SR-CRSP funds were not available, Dr. Mbabu and his staff filled in and attempted to keep the DPG base-line study active. Dr. Mbabu accepted the role of resident scientist in the absence of a CRSP resident scientist. Relatively new hires include SR-CRSP Socioeconomics Resident Scientist Dr. Lutta Muhammad and Mr. Njoroge. During the year that CRSP funding was not available priority was given to training, keeping the DPG project alive and monitoring the project.

Base line data for cooperating farms has been collected. Cooperating farms are monitored and data is collected on a continuous basis. Mixed results are reported in keeping the data collection current. The objective is to compare impacts on production systems, families and communities where there are DPG model farms with farms that don't have DP goats. Also, involved is the role of women in farming including DPG production and in farm, household and community decision making. Since a community group approach is in use for distributing DPG's and the training of farmers with improved practices, there are implications in regard to community interaction and development.

Research has been done in regard to establishing a range of market prices for DPG does and bucks. KARI socioeconomists at the KARI research centers have assisted with the SR DPG project but their time is limited since each of them is assigned to as many as 10 KARI projects.

Animal health data are collected by socioeconomists to find out the interest, understanding and exposure of the farmers to animal health problems. Information regarding farmers' strategies to work with the health problems is also being collected. DPG model farmers will be compared with control farmers in regard to animal health understanding and management.

During the 12 to 18 months of uncertainty and reduced funding; the resident scientists, KARI scientists and the PI's were resourceful in keeping the Kenya SR-CRSP project viable. The NARP II funds made available to the DPG Project and KARI's interests in the project were important contributions.

Research was completed and reported in regard to the integration of the CCPP Vaccine into Kenya's animal health delivery system.

Two Socioeconomists continue in training at the University of Missouri. One, a PhD student, Dekha Sheikh, is experienced with the DPG project in farming systems.

The Kenya project has had an excellent record of high quality social science well integrated with biological science research. With a new CRSP social science team in Kenya as well as new KARI economists in the field, it is essential that the CRSP begin anew the process of team building to insure that a strong social science team is developed and is well integrated with the biological sciences. KARI's approach to integrating the new economists into biological research efforts is an excellent approach that the CRSP can work with and build upon.

RECOMMENDATIONS

1. KARI's model of integrating economics into biological research efforts should be examined as a possible model for such efforts throughout the CRSP (host country and U.S.).
2. With the development of a new CRSP, it is important to carefully consider the qualifications needed in the U.S. institutions and personnel to be involved in collaborative social science research in Kenya. A strong U.S. team is essential for successful collaboration and team development in Kenya.
3. The Kenya resident SR-CRSP social science team, in addition to needing assistance in team building and research planning, also requires assistance in establishing a basic research infrastructure (computers, transportation and communication) for strong collaboration and research progress.
4. We commend both the biological and social science teams in Kenya for their progress in collecting field data and strongly recommend that this be a sustained priority effort to continue into the new CRSP.
5. KARI's collaboration between research and extension in Kenya is commendable. The EEP suggests that the CRSP build upon this important relationship in future technology transfer efforts.

EEP STRATEGIC RECOMMENDATIONS FOR KENYA

The EEP recommends continuation and regionalization of the Kenya Production Systems project. The EEP also strongly recommends that the Production Systems and any other animal production project must have a sustainable animal health program associated with it.

The EEP recommends the development and dissemination of the KDPG throughout the region including a multidisciplinary team effort necessary to facilitate healthy goat management.

The EEP strongly recommends Animal Health continue as a freestanding program recognizing it as a much needed basic science project with global potential and significance.

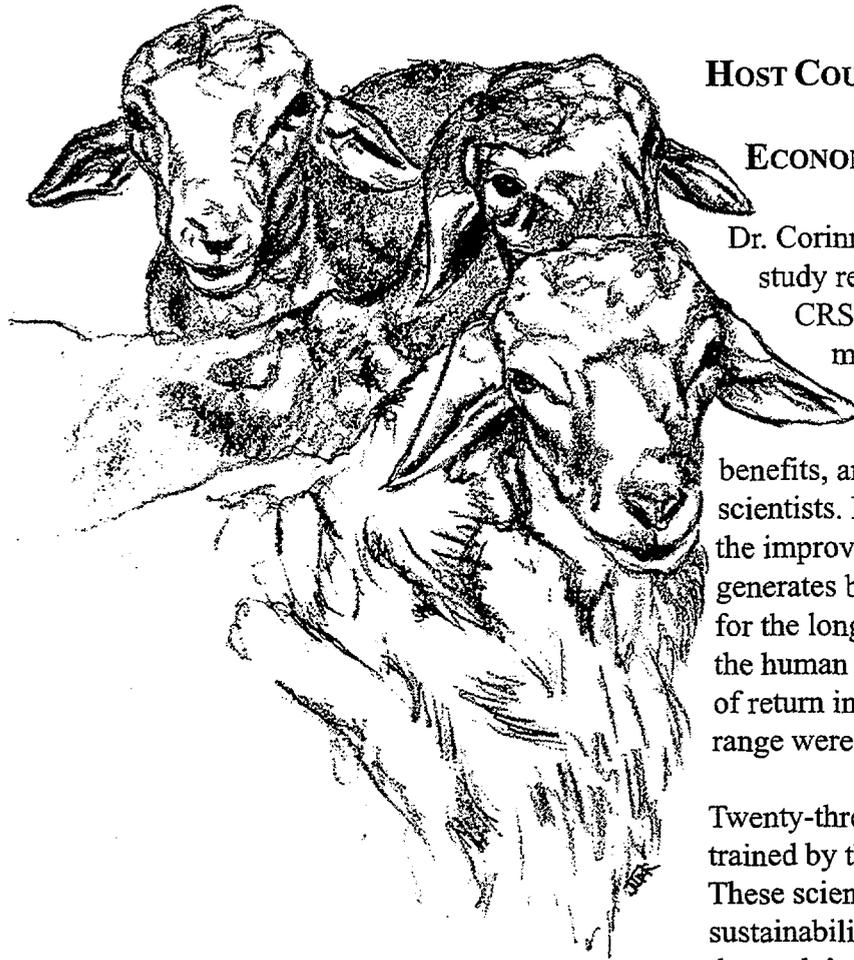
The involvement of the private sector in DPG multiplication should be expanded as rapidly as is feasible.

The SR-CRSP should give priority to a regional approach in East Africa with Kenya as the primary site and involving at least Tanzania and Uganda.

The EEP in its 1992 report recognized the evolution of the DPG Production System research program in Maseno as a world class Farming Systems research and training program involving a strong multi-disciplinary team. It was recommended at that time that a team of Kenyan and U.S. PI's representing the full spectrum of disciplines document this success. The EEP found no evidence that this superior model of Farming Systems has been documented. The EEP strongly recommends that the essential elements of this program be written up and made available globally.

The EEP recognized the importance of a site representative and strongly endorses the selection be conducted with input from local personnel.

INDONESIA REVIEW



HOST COUNTRY REVIEW

ECONOMICS

Dr. Corinne Valdivia reported the results of a study regarding the impacts of the SR-CRSP program with small ruminant management, nutrition and production in West Java. The study evaluated project costs, benefits, and the impacts of program trained scientists. Preliminary results indicated that the improved sheep management package generates benefits whereby it alone can pay for the long-term sheep breeding research and the human capital development. Internal rates of return in the 17.4 percent to 19.7 percent range were reported.

Twenty-three graduate degree scientists were trained by the SR-CRSP in four disciplines. These scientists provide a long-term sustainability dimension to the project. One of the study's implications is that an effective extension technology program is important in getting technology and management practices adopted by farmers.

The management practices related to nutrition and grazing sheep under rubber trees in the Sungei Putih area have important ecological and sustainability implications. The sheep reduce chemical applications that were used to control brush and weeds under the rubber trees. The sheep generate income and therefore, contribute to the local economy.

The Indonesian socioeconomists working with small ruminants have the training and capability to continue research and technology transfer including the areas of farming systems, the economics of production, and marketing.

A continued SR-CRSP presence in Indonesia

and modest budget primarily for networking and training would contribute to continued research and development of the southeastern Asia small ruminant industry. The networking should involve a continued linkage with U.S. universities.

BREEDING

The breeding project in North Sumatra has as its goals the development of a productive strain of hair sheep with superior genetic potential for resistance to internal parasites that is well-adapted to the climate, forage resources and management systems of the humid and sub-humid tropics. The focus of the genetics component has been a comparison of the performance of the local Sumatra strain and three introduced breeds of hair sheep: the St. Croix from the U.S. Virgin Islands; the Barbados Blackbelly from Barbados; and the East Java Fat Tail.

Earlier research demonstrated that St. Croix and Barbados Blackbelly crosses produced faster growing and larger lambs than the Sumatra or Fat Tail crosses. There were no significant differences among the four groups in reproductive efficiency. An overall ewe productivity index showed that there was some improvement of the Javanese Fat Tail crosses over Sumatra ewes, and the greatest improvement with the St. Croix crosses (31% increase) and the Barbados Blackbelly crosses (47% increase). In 1993 and 1994, the St. Croix X Sumatra crosses and the Barbados Blackbelly crosses were mated to produce the Sei Putih Hair Sheep, with 50% Sumatra, 25% St. Croix and 25% Barbados Blackbelly

breeding. Initial releases of these sheep were very popular with local breeders.

In 1994 the team decided to develop a 4-breed composite that incorporated 25% of each of the four breeds previously mentioned. The first ewes from this composite lambed in August and September of 1995, and the major improvements in ewe production continue to be apparent. The logic for a 4-breed composite included the following:

- Heterosis retention increases with the number of breeds involved.
- Smallholder farmers preferred inclusion of all 4 breeds.
- Selection within a single composite population will be much easier to manage than a program that maintains several breeds for use in a structured crossbreeding program.

The breeding flock is also used as a part of internal parasite and forage management studies.

Efforts of the project for 1995-96, in addition to continued selection and development of the

composite breed, are to emphasize the continuation of the project after SR-CRSP. The PI is optimistic that this will happen for the following reasons:

- Increasing meat production from sheep is an official national policy.
- AID, Bogor and the local Ministry of Agriculture all support commercialization of the breeding project.
- The local staff is becoming increasingly capable of managing the sheep flock.
- Sumatran farmers and PTP's are interested in and supportive of the project. One farmer has already been provided 40 ewes and rams as the first designated private multiplier breeding flock.

Dr. Eric Bradford, in discussions with the EEP, added the following recommendations in considering the long-term future of the Sei Putih breeding project:

- One additional year on site for the project coordinator, Roger Merkel, would greatly enhance the likelihood of success of the breeding project.
- The breeding flock at Sei Putih provides an excellent opportunity for a breeding research project on genetic resistance to internal parasites.
- Some effort must be made to continue support for the breed multiplication program through farmers and PTP's.

PRODUCTION SYSTEMS

The successful integration of genetically improved sheep into rubber tree plantation systems requires that adequate nutrition is provided. Sheep are integrated into farming systems of smallholders that may either work on a rubber plantation and be permitted to graze certain areas or may be a smallholder landowner that has a small rubber plantation as part of his farming system. Sheep are often cared for by women and children (after school) in the family. Management systems vary from limited grazing to total confinement with cut and carry feeding. Seasonal variation in forage supplies and the need for nutrient supplementation at critical production stages have been major research efforts. Some of the research findings that are being incorporated into production systems include:

- Shade tolerant forage species that have a longer productive life in new growth rubber plantations have been identified and are being used by PTP's and farmers.
- The use of tree legumes as a source of protein for growing lambs has significantly improved lamb growth rates. Tree legume species evaluated as good supplements include *Gliricidia sepium*, *Paraserianthes falctaria* and *Calliandra calothyrsus*. Other tree legume species including *Leucanea*, *Sesbania*, *Craytlea*, *Albizia* and *Flemingia* continue to be evaluated.
- Research has shown that grazing ewes select a much higher percentage of le-

gumes in their diet than the forage typically provided in cut and carry confinement systems. Farmers are now either providing increased grazing time or increasingly using tree legume clippings to increase protein intake.

- Research has also shown that agro-industrial by-products can be used as supplementary feeds for sheep. These include palm oil mill effluents (POME), palm kernel cake (PKC), molasses, cassava meal and coconut meal. Cost and feeding value have been obtained to evaluate the economics of various supplements. *Ex decanter* solid waste of POME is produced in high volume in North Sumatra, currently has no competing uses and has high feeding value for sheep.
- One of the major benefits of tree plantation grazing has been the reduced use of herbicides, which has both economic and environmental significance. Sheep grazing under tree crops also improve nutrient cycling and reduce soil erosion.
- Sheep production in North Sumatran farming systems provides critically needed smallholder income, improved nutrient recycling from both grazing and confinement production systems, and more fully employs available family labor.
- In companion studies on hair breeds of sheep at North Carolina State University, it has been shown that these breeds are well adapted to our more humid climates. Several U.S. cattle and sheep farmers in the region are now using hair sheep.

The Principal Investigator has both concern and hope for the future of this project. Farmers have been rapid and willing adapters of new technology and management practices. Continued extension education programs will be required for the government's desired expansion of sheep production in North Sumatra. Although substantial progress has been made by the feed resources and nutrition research program additional knowledge on forage management and culture practices is needed. It would be very beneficial if some support could be identified for continued mentoring of Simon Ginting once he completes his Ph.D. and is responsible for nutrition and forage research on site.

EEP STRATEGIC RECOMMENDATIONS FOR INDONESIA

The EEP recommends that Site Coordinator, Dr. Roger Merkel be extended one more year. During this year, he should facilitate the smooth transfer of operations to the Indonesian scientists and mentor the transition to commercialization, networking and tie in with the region.

The EEP recommends the ME investigate the current status of SRUPEN. Maintenance of this newsletter and exploration of more efficient methods of dispersing information are highly recommended.

Regionalization of the SR-CRSP in southeast Asia should be explored.

The SR-CRSP and USAID should make every effort to assure the completion of the degree programs of all trainees supported by the project.

It would appear that a small amount of funds for continued mentoring of resident host country scientists and projects by the PI's would be a good investment.

The USAID, SR-CRSP and the PI's should make every effort to assist host countries in planning for the future of programs that merit continuation after the SR-CRSP departure. This may include assistance in identifying sources of continued financial support and assistance in grant writing, and continued communication and networking with host country scientists.

There are a number of areas in which commercialization of the North Sumatra sheep project should be of interest to the government of Indonesia and USAID:

- a. Foundation livestock producers. Initial stock producers should be strategically located in Sumatra and be from cooperating producers in the project. The PTP's may also be prime candidates as breed multipliers.
- b. Forage crop producers. Nursery and seed stocks for tree legumes and recommended forages could be a potentially profitable enterprise.
- c. Supplies. There appears to be a need for sources of supplies such as anthelmintics, feed supplements, small equipment for sheep management, etc.
- d. Marketing. Although local demand and logistics preclude organized market structures at this time, expansions in product will eventually develop a need for new markets.

BOLIVIA REVIEW



HOST COUNTRY REVIEW

SOCIOLOGY

The sociology component of the SR-CRSP in Bolivia has contributed significantly to the greater understanding of family systems, gender based social and work delineations, and production systems related to pastoral communities in the altiplano.

Publication of research results has occurred primarily as IBTA technical publications. The audience for these publications is unclear. However, they appear to provide the host country with the research results for their future incorporation into biological and social science research and production efforts. With the closeout of the Bolivia project these publications will be an important source of information maintained in Bolivia and focusing on the following areas:

- Land tenure and control at the village level
- Livestock production, consumption and marketing systems
- Consumption of llama meat
- Adoption of technology
- Environmental and production sustainability
- Impacts of commercial livestock activities on household economies

The majority of publications and presentations over the last few years (1993-1995) have been in Spanish. There is a clear need to increase disseminations in English language journals

thus increasing access to the information not only in the U.S. but also worldwide.

Without the early and continued presence/assignment of long-term host country counterparts on the Bolivian Project in either the social science or biological science areas, it is difficult to anticipate the sustained impact of this greater level of understanding in Bolivia. Similarly, because the biological research program in Bolivia was not initiated until after social science efforts had begun and less progress was made in these areas; there has been a limited amount of integration among components. It is therefore unclear what, if any direct impact will occur of social science understanding on biological science research.

Social Science training activities during this time period have continued to focus primarily on undergraduate thesis research by students in Bolivia. There have been some Masters degree candidates in the U.S. and Bolivia who have worked with the CRSP (levels of support ranging from a "volunteer" relationship allowing a U.S. Master's candidate to work in Bolivia accessing CRSP developed networks to funding in more traditional U.S. or Bolivian-based programs). However, there is no sense of having assisted to build a small ruminant research team in Bolivia which will remain intact beyond CRSP funding.

RANGE MANAGEMENT

Since the last review in 1993, the Bolivia Range Management component has wound down the project, finished student theses, and prepared for termination of activities in Bolivia. The resident scientist and the PI have resigned and a new PI has taken over. No new research has been initiated, although field work and analysis of student projects has continued. Two active Ph.D. candidates are nearing completion of their programs.

We cannot easily assess the impact of range management research in Bolivia on small ruminant production from materials furnished the EEP. Most of the work was presented in student theses, internal seminars, and professional meetings. Although some research results are available to other researchers, it is unclear how much is available at the producer level. Student theses are being

rewritten to make them more usable and synthesis volumes are to be prepared, but to date there is little evidence that research is used beyond the villages in which the work was done.

The political situation in Bolivia caused rapid turnover of administrative personnel in IBTA, and to some extent people at the research level changed jobs. This, coupled with a high turnover in PIs from America, leaves little commitment among remaining institutions to distribute and promote research that was done.

All original PIs stepped aside since the last review, leaving the transition and termination procedures to newly appointed leaders. Soon after the last EEP review, the Bolivian project was scheduled for termination by the SR-CRSP. Reduced, wind-down funding was later

approved, but changes in personnel and uncertainty of the future of the project put the new leaders in the position of running a salvage operation rather than implementing new research.

Student theses, the proposed integration volume, and other reported activities show a close relationship between social and biological sciences. A high percentage of the research workers, both Bolivians and Americans, were women. We noted in an earlier report that having women on the research teams changed the attitude of village people to the education of females.

As stated in the last review, the major contribution of the Bolivia/Range Management component has been training of personnel.

Two students, a Bolivian male and a U.S. female, are currently finishing Ph.D. degrees in range management at Utah State University.

The SR-CRSP office in La Paz was scheduled to close at the end of November. One USU doctoral candidate will remain alone in Bolivia to complete her field work. She hopes to return to the U.S. by July 1996.

As earlier EEP reports pointed out, the selection of Bolivia as a site and different signals from the SR-CRSP Board, ME, AID, and PIs put the project in jeopardy from the start. Since the last review, the uncertainty of support from the Board, reduced funding by AID, change of Bolivian political support, and resignation of American PIs all contributed to the ultimate closing of the project.

GENERAL RECOMMENDATIONS

THE USAID MISSIONS

We believe it is true that USAID missions around the world have, for the most part, been hesitant to take the SR-CRSP into their collective hearts and bosoms. For various reasons, such as the independence of the SR-CRSP, this is less than surprising. However, in light of the success of the CRSP format and the reality that the SR-CRSP is certainly a jewel in USAID's crown, the time has now arrived for Washington and the missions to re-evaluate their posture.

In instances where the USAID missions have taken a real interest in the CRSP, made themselves familiar with the projects, and actually visited them in the field — and Kenya is an example, — the SR-CRSP has been more likely to succeed because of that interest. While positive mission involvement is not sufficient to insure the success of the CRSP, it is an important element in achieving that success. Where this has not been the case, the CRSP has encountered difficulties. The EEP recognizes that a positive endorsement of the SR-CRSP program, by both USAID Washington, and the mission is quintessential to success.

RESEARCH

Overall, the EEP suggests that the CRSP research approach place greater focus on more specific research problems, with multi-disciplinary teams working in a collaborative manner.

Social science elements must be integrated with biological sciences. This has not usually occurred—research has been conducted in parallel environments with minimal collaboration and cross fertilization between, and among, content areas. We believe the problem focus described above would help in moving toward greater integration.

It is important for the new CRSP to include a focus on the dual role of grazing animals: beyond providing food and an important quality element in the human diet, they also serve as a means to improve environmental quality. The latter role is less researched and areas such as weed and brush control, as well as solid waste management could

be addressed. Such a focus would have important impacts in both the U.S. and the host countries.

The EEP recommends the inclusion of land tenure policy as an important area of research. Issues related to grazing on public lands are not limited to the U.S., with 61% of the world's land not actually tenured. It is essential that policy and decision-makers have greater understanding of both the issues at hand, and the social and biological impacts of decisions regarding "public" lands. The need for this information is particularly urgent in light of worldwide privatization trends.

There is little evidence that budgetary allocations in the SR-CRSP are linked in any way to research success, progress, or opportunities. It is important that the new CRSP have a system in place allowing for critical, independent (third-party) evaluation of research and correlated with the resulting allocation of funds.

The EEP once again recommends that consideration be given to the global and U.S. significance of research in arid lands. Because over 65% of the world's sheep and goats are kept in such an environment, it is essential that the SR-CRSP, when determining future projects, give the most serious consideration to work in arid lands, as well as to livestock and wildlife interaction.

STRATEGIC RECOMMENDATIONS

The somewhat inconsistent decisions of AID regarding funding for the SR-CRSP, as well as other CRSPs, has been enormously expensive and disruptive. The way these decisions have been made, and their communication and implementation, represent, at best, "poor-faith" bargaining on the part of AID. In the view of the EEP, the disruptive and personal angst caused overseas by disruption of funding cannot be overemphasized. The scientists and staff of the SR-CRSP should be commended for keeping things going during a very difficult time. The EEP strongly feels any future program sustainability is dependent on the stability of funding.

Strong consideration should be given to the importance of future research projects in relation to the needs of the U.S. private sector. Every effort should be made to obtain input concerning the needs of the U.S. private sector in future projects.

Further, any future livestock CRSP must include a significant component of its program efforts in those ecoregions where transhumant and other extensive livestock production systems are predominant, and must address the issues of rangelands management, land tenure and other serious ecological concerns.

There are many possibilities for the SR-CRSP to cooperate with other CRSPs on cross-CRSP activities, especially as broader concepts of livestock research are incorporated into the program. The EEP encourages these activities.

The EEP believes priority should be given to actual U.S. and host country needs and values, as determined by the affected people and communities. This includes inputs by host country scientists, as well as local producers.

The host country site coordinator should be a representative of the host country. He/she should coordinate and collaborate on an equal basis with the U.S. Principal Investigators in developing research and training plans, as well as budgets. While it may be impossible to identify this individual immediately, every effort must be made to move in this direction as quickly as possible.

The EEP feels the composition of the SR-CRSP Board of Directors should be completely independent of the ME and the PI's. Furthermore, the EEP finds it unnecessary to have both an Administrative Council and a Board of Directors. The SR-CRSP could adequately be led by one body, composed of experts with no vested interest in the CRSP.

The EEP commends the CRSP for its inclusion of host country representatives on the TC and Administrative Council; this is crucial if host countries are to be true collaborators in the CRSP. In the new CRSP it will be important to continue to allow host country collaborators a strong, equal role in all facets of the CRSP, including budgetary and management decisions.

The EEP supports the SR-CRSP's opening of the bidding process for the new CRSP, including the ME, in an attempt to attract the best U.S. institutions and scientists available.

The EEP suggests that as U.S. Principal Investigators leave the CRSP, projects (which are not the "property" of the U.S. university) should be subject to bids from other universities. We suggest adopting a similar approach any time new initiatives are added to the CRSP. In either case, it is important that a team of scientists, unconnected to the CRSP, be assembled to review proposals.

The EEP recommends the following projects be regionalized and extended to new areas:

Farming Systems — Tanzania and Uganda.
Animal Health — globally

Training has been an important part of the SR-CRSP and one that has developed high quality, multi-disciplinary research teams, and capability in both the U.S. and abroad. In its renewal, high priority should be given to the training program for both host country nationals, and U.S. students. In addition, the EEP recommends that, in the new CRSP, the following be required of projects: an analysis of training needs (U.S. and H.C.) and the development of training plans, including short and long-term opportunities. It is recommended that short-term internships be implemented to facilitate greater involvement of U.S. students. Simultaneously, the CRSP must begin to report more comprehensively on training investments and returns, gender specialization and degree levels, and tracking of graduates.

Use of modern technology has vastly improved communication abroad. It is the recommendation of the EEP that at any new site, priority be given to the establishment of the necessary global communication technology.

The EEP strongly endorses moving forward with the development of a global livestock CRSP, bearing in mind the positive and negative experiences of the last 17 years. We further realize there must be focus based on the research priorities of overseas countries, as well as the U.S. livestock industry.

MODEL FARMER

*Tabitha's
bare feet defy
thorns
 cacti
 and bush vermin
as she takes us to her goats
her little toes have no nails
 feet scarred from
 chasing seven children
 carrying water from the creek
 walking home after dark
from her job at the market
she has no man
 just a mother-in-law
 who watches goats
cuts firewood with a panga
she needs
 five hundred dollars a year
 school fees for her kids
she makes
 fifty dollars a month
 at the market
nine people live a year
on about a hundred dollars
 and what they can raise
 on a barren patch
 of dry
 red earth
goats
 give milk for the children
 make them healthy
 only one has died
Tabitha is a model farmer
 thorns would not dare
 pierce her feet*

*November 1995
Thad Box*

APPENDIX A

SCOPE OF WORK - PROGRAM DIRECTOR

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

SMALL RUMINANT
COLLABORATIVE RESEARCH SUPPORT PROGRAM
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TO: S. Gordon Campbell
Chair, SR CRSP EEP

FM: Montague W. Demment
Program Director

A handwritten signature in dark ink, appearing to read "Montague W. Demment".

RE: EEP Review - 1995

The attached Scope of Work for this year's EEP review reflects USAID's interests as perceived by the Program Manager, Joyce Turk. While I am interested in all of this information, my focus now is more toward the future than the past. I especially look forward to the EEP's views on which projects/activities should be regionalized or extended to new geographic areas and/or modified to meet challenges that were not recognized five or more years ago. Also of considerable interest to me is the Panel's view of how the existing SR CRSP organizational structure and operating procedures has facilitated or impeded intellectual creativity, research, development and technical transfer. How can the SR CRSP more effectively capitalize on the available talent in the US universities interested in international development? What are the Panel's recommendations for maximizing the benefits to the US, particularly beyond the university community, while maintaining a strong development orientation? Since collaboration is a fundamental element of the CRSP, I am interested in the EEP's assessment of and suggestions for the SR CRSP using "bottom up" project definition, design and implementation.

About the time I was appointed Program Director, USAID notified the University of California that the Small Ruminant CRSP was being terminated as of September 1995 and the budget was reduced from \$2.7 million to \$800,000 (later increased to \$900,000). We succeeded in getting that decision reversed but it took nearly a year. Severe adjustments in Program were necessary just to keep the SR CRSP from collapsing. The Management Entity went from 4.7 Full Time Equivalent employees to 2.29; the Bolivia site was phased down with total closure set for November 30, 1995; as of 1 March 1995 all of the expatriate employees were recalled from Indonesia and the Kenya site concentrated primarily on maintaining the flocks. I am especially interested in the Panel's assessment of and recommendations on the multiplication work in Indonesia and Kenya. During your visit to Kenya, I would like the Panel to take a close look at the DPG multiplication project.

USAID notified us in May 1995 that we were being extended an additional year, until September 1996 and we were allocated \$2.2 million for the period 15 May 1995 through 30 September 1996. We needed \$216,000 to carry us to 1 October 1995, leaving \$1,984,000 for the final year commencing 1 October 1995. While we were notified in May 1995 that we were getting the \$2.2 million, we did not receive the funds until the July 23, 1995.

After the funding was received in July 1995, we recruited Roger Merkel to serve as the Site Coordinator at Sei Putih to oversee the research through the final year and handle the administrative functions for the SR CRSP. The USAID/I Mission has yet to approve the travel for Roger and his family and provide the necessary documents for the Merckels' long-term visas. The USAID-Indonesia Mission has made it very clear that the Mission does not plan to cooperate and assist the SR CRSP. I might point out that the Mission's quarrel is more with USAID/W than with the SR CRSP but unfortunately we are victims of the dispute.

It would also be very helpful if the Panel would calculate the cost of the funding interruption and the effect of uncertainty on the Program.

I wanted to let you know some of my particular interests and offer a few facts that might help you put some of your observations in perspective when you review the program. I look forward to your report. Please let me or Jim Scott know if there is any additional information that you need or if we can help you with your arrangements.

APPENDIX B

SCOPE OF WORK - PROGRAM MANAGER

EEP Scope of Work - 1995

- I. Evaluate SR CRSP progress since the 1993 EEP review
 - A. Evaluate specific research contributions since the last review.
 - 1. New research results
 - a. Improved technologies, methods, systems
 - b. How new research findings address the needs of small scale producers and women or other beneficiaries
 - 2. Impact of research achievements
 - a. On production of small ruminants
 - b. On technology needs/constraints facing small scale producers
 - c. On the developing and developed world
 - B. Evaluate institutional development and training
 - 1. Personnel changes
 - 2. Status of training program
 - C. Evaluate progress relative to objectives stated in workplans
 - 1. U.S.
 - 2. Host Countries
 - 3. Length of time project has been engaged in research addressing the objectives
 - a. Progress relative to log frame
 - b. Reasons for any deviation
 - 4. Relationship of project research to any other research
 - 5. Likely contribution of research to the U.S. and to the amelioration of global constraints.
 - D. Evaluate the progress relative to funding stability and level
 - E. Evidence of biological/social sciences integration
 - 1. Identification of and attention to socio-economic and WID-related constraints
 - 2. Specific inputs into research by social scientists since 1993 EEP review in addressing WID-related constraints
 - F. Quality of baseline data

II Evaluate funding/fiscal management since the last EEP review.

- A. Problems regarding funding, budgeting, release of funds, procurement, and other — in U.S. and host countries
- B. Adequacy of fiscal management, policies and procedures
- C. Activity towards buy-ins and/or other funding
- D. Institutional responsiveness to spending 65% of the annual in or for the benefit of the host countries.

III. Evaluate the current status

- A. Impact of training program
- B. Collaboration/cooperation between U.S. and host country institutions and personnel
- C. Contributions of collaborating institutions and individuals towards accomplishment of objectives
- D. Interest, involvement, and support of USAID Missions
- E. Evidence of institutionalization in host countries and the:
 - 1. Faculty (researcher) recognition for international activities
 - 2. Integration of domestic program with CRSP projects(s)
 - 3. Internal support for project management and institutional management
- F. Appropriateness of activities to goals of the Global Plan

- G. Balance between domestic vs. overseas activities with respect to program objectives

IV. Work plan changes

Comment on changes/additions/deletions in the current work plans, reasons for such changes and the EEP assessment of the appropriateness of these changes.

V Publications and presentations since 1993 EEP review

Evaluate quantity and quality of projects' output.

VI. Program overall

- A. Relationships: communications, lines of authority
 - 1. SR CRSP, officials, and Management Entity
 - 2. Host country and resident scientists/host country counterparts
 - 3. Host country advisory body and SR CRSP
 - 4. USAID Missions, USAID/W, host countries, and SR CRSP
 - 5. Management Entity and SR CRSP Program Representatives
 - 6. Principal Investigators and Program Representatives
 - 7. Program Representative and resident scientists/host country counterparts

B. Cost/benefit analyses

1. USAID Missions' monetary contributions (such as PL 480) benefits
2. Expenditure/funding compliance with Memoranda of Understanding
3. Balance of budget vs. research
4. Economic viability of continuing research in the geographic region vis-à-vis returns on investment

C. Program administration

1. Effectiveness of the SR CRSP Program Representative with host country USAID/AID Missions Management Entity, Principal Investigators and resident scientist/host country counterparts
2. Principal Investigator inputs: visits to host country, participation in program development meetings, workshops, training
3. Activities of the Management Entity and USAID.

D. Evidence of interactions with NGOs, PVOs, IARCs, and other donors.**Recommendations**

Having done the above assessment, the EEP is expected to make recommendations as follows:

1. Recommend projects that should be continued and regionalized while considering
Host country status within the context of USAID current objectives and priorities
US interests
Global objectives
2. Recommend activities/projects that have matured and can now be graduated and projects/activities that are not competitive for the limited resources available.
3. Recommendations for extending the research results regionally and/or globally.
4. Recommendations for Program enhancement and cost-effectiveness.
5. Comment on the Program strengths, weaknesses and suggestions for the future.

APPENDIX C

EXTERNAL EVALUATION PANEL SCHEDULE IN KENYA

NOVEMBER 8TH TO 14TH, 1995

<u>Date</u>	<u>Time</u>	<u>Activity</u>	<u>Facilitator</u>
Wednesday 8th	PM	Arrival	Ms. Ngugi and Mr. Njonjo
Thursday 9th	AM	RSs presentations at Kabete Training Room	Ms. Ngugi
	9:00- 9:45	Introductions EEP's expectations and outlook SR-CRSP Kenya	
	9:45-10:15	Breeding Project	
	10:15-10:30	Tea Break	
	10:30-11:00	Productions Systems	
	11:00-11:30	Animal Health Project	
	11:30-12:00	Socio-economics Project	
	12:00-12:30	Discussion	
	12:30- 1:30	Lunch Break	
	2:00 PM	Visit with USAID officials Dennis B. McCarthy Agricultural Development Officer	Dr. Semenyé
Friday 10th	8:00 AM	Katamani National Dryland Research Centre & KDPG farmers	Dr. Bauni
	3:00 PM	Kabete Biotechnology Lab.	Drs. Rwambo/Shompole
Saturday 11th	7:30 AM	Oi'Magogo KDPG Breeding Station	Dr. Kogi
Sunday 12th		EEP/RSs travel to Mombasa	Ms. Ngugi
Monday 13th	9:00 AM	Visit Kwale KDPG farmers	Dr. Mureithi
	1:00 PM	Visit Kilifi KDPG farmers	
Tuesday 14th	AM	Visit Kilifi Plantations Mr. C.D. Wilson	
	11:45 AM	Depart for Nairobi	Ms. Ngugi/Mr. Njonjo
	PM	Visit with Director KARI Dr. C. Ndiritu Departure, evening	Dr. Semenyé Ms. Ngugi/Mr. Njonjo

APPENDIX D

APPROVED BUDGET YEAR 16

Budget Line Items	Discipline	Principal Investigator	Amount
Subgrants			
UC Davis	Genetics	Bradford	\$ 49,876.00
North Caroline State Univ.	Nutrition	Pond	\$ 104,548.00
Texas A&M University	Breeding	Taylor	\$ 79,135.00
Utah State University	Range-Ecology	Norton/Coppock	\$ 114,804.00
University of Missouri-Columbia	Sociology	Nolan	\$ 132,324.00
Washington State University	Health	McGuire	\$ 204,435.00
Winrock International	Production Systems	Getz	\$ 42,014.00
Winrock International	Economics	Knipscheer	\$ 128,125.00
Subtotal Subgrants			\$ 855,261.00
Host Countries			
Indonesia			\$ 75,240.00
Kenya			\$ -
Bolivia			\$ 31,053.00
Subtotal Host Countries			\$ 106,293.00
Training In Progress			\$ 874.00
Grant Renewal			\$ 75,000.00
Program Enhancement			\$ 71,479.41
Small Grants			\$ 12,540.00
Management Entity			\$ 295,281.00
Program Support			
External Evaluation Panel			\$ -
Technical Committee			\$ 13,794.00
Board of Directors			\$ 2,738.00
Administrative Council			\$ -
Meetings-Other			\$ -
Publications			\$ 6,089.00
Subtotal Program Support			\$ 22,621.00
TOTAL BUDGET 1994/95			\$ 1,439,349.41

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APPENDIX D

APPROVED BUDGET YEAR 17

Budget Items	Discipline	Principal Investigator	Amount
SUBGRANTS			
UC Davis	Genetics	E. G. Bradford	\$ 50,000.00
North Carolina State University	Nutrition	Kevin Pond	\$ 60,000.00
Texas A&M University	Breeding	Jeremy F. Taylor	\$ 166,525.00
Utah State University	Range Ecology	Layne Coppock	\$ 39,000.00
University of Missouri-Columbia	Sociology	Corinne Valdivia	\$ 179,530.00
Washington State University	Animal Health	Travis McGuire	\$ 196,000.00
Winrock International	Production Systems	Will Getz	\$ 138,000.00
Winrock International	Economics	Hendrick Knipscheer	\$ 228,600.00
Subtotal Subgrants			\$ 1,057,655.00
HOST COUNTRY			
Bolivia - Admin. & Synthesis			\$ 15,525.00
SMALL GRANTS			
Study of FMD-Free Markets	Ag. Economics	Lovell S. Jarvis	\$ 13,805.00
Banking Live Stock Capital-Ethiopia	Range	Layne Coppock	\$ 27,610.00
Modeling Pastoral Resources-E. Africa	Anthropology	Peter Little	\$ 23,669.00
Lewis & Coppelillo Study-Tanzania	Ecology	M. W. Demment	\$ 12,540.00
REGIONALIZATION & WORKSHOPS			\$ 150,601.00
GRANT RENEWAL			\$ 266,190.00
PROGRAM ENHANCEMENT			\$ 56,021.00
MANAGEMENT ENTITY			\$ 353,000.00
PROGRAM SUPPORT			
External Evaluation Panel			\$ 31,970.00
Technical Committee			\$ 10,000.00
Board of Directors			\$ 5,000.00
Administrative Council			\$ -
Meetings-Other			\$ 3,000.00
Publications			\$ 8,765.00
Subtotal Program Support			\$ 58,735.00
TOTAL YEAR 17 BUDGET			\$ 2,035,351.00

FN: BUDGET YR.17.8
 PREPARED: 3/13/96

ADDENDUM

RESPONSE TO EXTERNAL EVALUATION PANEL REPORT	42 - 49
UNIVERSITY OF MISSOURI - COLUMBIA	42
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UNIVERSITY OF MISSOURI - COLUMBIA



UNIVERSITY OF MISSOURI-COLUMBIA

College of Agriculture, Food and Natural Resources

Social Sciences Unit
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April 25, 1996

Montague W. Demment
Director, SR-CRSP
University of California, Davis
Davis, CA 95616

Dear Tag,

We reviewed the External Evaluation Panel Report 1994-1995. Following is our response to both the Kenya and the Bolivia Review. The SR-CRSP Annual Report 1994-1995 lists accomplishments and students trained in Bolivia so we do not include details here. We hope these comments contribute to a better picture of the achievements of the SR-CRSP program in general and to the sociology and economics projects in Kenya and Bolivia in particular.

Bolivia Review: Sociology and Economics

We appreciate the positive comments of the EEP on our research activities. We had a very productive year in spite of the lack of support from USAID funding. PL480, IBTA, the ME and our institutions supported our activities when the budget cut took place. Changes in project leadership, in all cases, were done in mutual agreement with the ME, and were designed to strengthen the component's program.

Responding to EEP concerns:

- 1) The audience for the Spanish technical reports has been the donor community (World Bank Resident Mission, FAO, USAID), universities, the participating peasant communities, researchers in Latin America and the Ministry of Agriculture. Spanish reports were our first priority as the closure of the program was imminent. We are currently doing English publications, which include a synthesis of the component's research results funded jointly by the SR-CRSP and ILRI. Layne Coppock, P.I. for Utah State University provides more details.
- 2) Integration with the biological sciences took place, especially after Dr. Jim Yazman, and Dr. de Queiroz arrived. A presentation on Sheep Production Systems in the Central Altiplano of Bolivia at the National Animal Science Meetings in Bolivia reflected this integration and was very well by the Bolivian Scientific Community. The economic's Resident Scientist and co-investigator worked with the biological projects, especially in the analysis of data. On-farm research, with the peasant community producers was carried out by both the biology and social science team members.

- 3) In spite of IBTA's failure to incorporate a social science unit into their institution, we have been able to contribute to building small ruminant research capacity in Bolivia. Several "becarios", now professionals, created a non governmental organization, Ecología Andina, recognized by Bolivia's president. Ecología Andina conducted a training workshop on methodologies and development of criteria to plan sustainable livestock production in March of 1996. A faculty member from Universidad Técnica de Oruro trained by the University of Missouri had the added opportunity of leading on farm research in San José Llanga for one year. He is back at his University teaching and advising students' research.
- 4) A change has taken place in government organization in Bolivia, decentralizing decision making and placing resources in peasant communities. The research component has provided San José Llanga and Santiago de Machaca with technical publications and special bulletins that have informed local residents about community resources, their economy and demographics. The community has these available to pursue development projects.

Kenya: Sociology and Economics

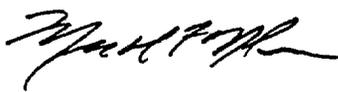
The EEP highlights KARI's approach to integrating the social sciences into biological research. This excellent approach was designed by the Sociology resident scientist, Dr. Mbabu from the SR-CRSP model, and has been implemented with the support of KARI's director. Dr. Mbabu continues his role as resident scientist in sociology and team coordinator in Kenya.

The team has the basic research infrastructure in place, which includes computers, transportation and e-mail communications among all sites (Kabete, Headquarters, Katumani and Mtwapa). As the review correctly stated, the team and its infrastructure were being set up at the time of the EEP visit. Since then, considerable progress has been made in "team building". Dr. Mbabu, Dr. Lutta and Mr. Njoroge conduct their research activities in coordination with the principal investigators C. Valdivia and M. F. Nolan in the U.S.

Lack of funds catalyzed the process of integrating co-investigators from KARI into our research project. It would be ideal to involve more MU faculty and students in our SR-CRSP research activities. However, involvement without resources to finance activities is not a sustainable strategy.



Corinne Valdivia and
Principal Investigator



Michael F. Nolan
Co-Principal Investigator

UTAH STATE UNIVERSITY



DEPARTMENT OF RANGELAND RESOURCES

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April 23, 1996

Dr. Tag Demment
Director, SR-CRSP
258 Hunt Hall
University of California
Davis, CA 95616-8700

Dear Tag:

Thanks for the opportunity to comment on the draft, 1994-5 EEP report concerning the Bolivia project. I will keep my remarks brief and confine them to the section on range management (pp. 25-26). Even though my remarks are short they are almost as long as the EEP piece, unfortunately.

First, I want to acknowledge that the EEP did not mention that range ecology had been combined with animal nutrition in the final year of field work. The former resident scientist for range ecology (Dr. Joao de Queiroz) did not "resign" (first paragraph on p. 25), but was kept in Bolivia until his funding ran out. Dr. Jim Yazman of TTU/Winrock then assumed a dual role of resident scientist for both range ecology and nutrition after Queiroz departed, and after TTU withdrew from the project. Yazman henceforth operated under the Utah State umbrella.

It was indeed unfortunate that the EEP was only provided with SR-CRSP technical summary reports in Spanish; this no doubt contributed to their lack-luster synopsis of our close-out year. I want to clarify for other readers, however, that during Year 16 five on-going research trials at two sites were effectively wrapped-up, over 20 technical summary reports of these were written and distributed, and the last six Bolivian B.Sc. Students finished and defended their theses. Two Ph.D. students in the pipe-line during year 16 have been carrying out impressive work, and this will be wrapped-up by 1996-97. Given large funding cuts and associated uncertainties throughout the year, I am proud of this disciplined effort, due in large measure to the professionalism of Dr. Jim Yazman, collaborating national scientists, and others. The EEP report did not reflect, to any degree, the fact that an orderly and productive close-out year ultimately occurred. We had not intended to start new research given the circumstances, and that also needs to be clear.

Much of the EEP synopsis refers to a collective lack of evidence that the research has or will be disseminated among Andean producers or the research community, that there is little hope similar research will continue among national scientists, and questions whether the



research has had any impact on small ruminant production. It was also mentioned that the instability of IBTA will lead to a lack of commitment to promote work that was done. All I can forward in response to these remarks is as follows:

(1) SR-CRSP collaborating scientists such as Christian Jette have taken a lead in providing oral and written summaries of research findings to the campesinos at San Jose de Llanga and Santiago de Machaca. Jette has also provided producers with valuable maps produced by the project. Thus, an effort has been made to inform producers who were kind enough to let an army of researchers "disrupt their lives" for three years;

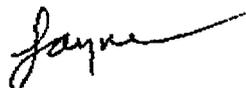
(2) Dissemination of research results, and recommendations to researchers and development personnel, will occur as a result of distribution of a peer-reviewed synthesis volume, scheduled to go to press at ILRI by the end of 1996. This will be the key scientific output for the project. Dissemination will be international through the CGIAR networks. The lag time in synthesizing and distributing results from a multi-disciplinary, farming-systems project like this is unfortunate, but I have come to learn *it will always be the rule rather than the exception* until we envision new ways of creating and managing inter-disciplinary teams. In reality, even if the book is published late in 1998, we will have beaten odds that a majority of other multi-disciplinary projects have succumbed to; and

(3) Forces which continually perturb institutions like IBTA, or impede extension of research results, are, of course, outside the domain of influence for the SR-CRSP. One of our main research themes was analyzing effects of climate perturbations on a mixed farming community. It is notable that we have also learned a lot concerning de-stabilizing effects of frequent perturbations on national research institutions.

One last remark: On page 26, left column, second paragraph down, there is material on "close relationships between social and biological sciences" and this is followed by a passage on how "campesino attitudes have changed about education of women". You might cut this all out; I do not know why it is there.

Thanks again for the opportunity to comment. Good luck with the renewal process for the SR-CRSP.

Sincerely,



D. Layne Coppock
Assistant Professor

cc: Corinne Valdivia
Jim Yazman
John Malechek
Paul Rasmussen

TEXAS A&M UNIVERSITY



TEXAS A&M UNIVERSITY
College of Agriculture and Life Sciences
Department of Animal Science

Kieberg Center
College Station, Texas 77843-2471

April 16, 1996

RECEIVED

APR 23 1996

SMALL RUMINANT CRSP

Dr. Tag Demment
Program Director
SR-CRSP
258 Hunt Hall
University of California
Davis CA 95616

Re: 'Lament of the SR-CRSP PI'

Dear Tag:

I have reviewed the EEP Report for 1994-95 and have found the flavor to be much the same as in previous years. Perhaps with the exception of the poetry. Which is a disappointment considering that whatever utility an EEP review serves, it should most certainly serve to assist the Program Director with an unbiased appraisal of performance and opportunities in times of transition. However, I found only a weak correlation between the documented review and the Scope of Work contained in Appendix B and I sincerely trust that the 'off-the-record' report was of more use to you.

A few general comments before I address issues pertaining to the Breeding project.

1. On page 27 in the second paragraph pertaining to the AID Missions, the Kenya Mission is portrayed as a shining model of Mission involvement in the CRSP. The fact of the matter is that if it had not been for the political acuity and tireless efforts of Mike Nolan to culture relationships, the PL480 and NARP I and II funds that came to the CRSP would never have materialized. My experience has been that it takes plastic explosive to get most Mission personnel into the field to review our projects and that only the good fortune of having an animal agriculture sensitive ADO rotate through the Mission (i.e., serendipity) is conducive to project support. Mission attitudes to the CRSP will continue to vacillate with the political winds of change and only the continuous efforts on the part of the SR-CRSP ME and PIs to culture relationships can offer us any hope of leverage with the Missions.
2. Also on page 27, the second paragraph under Research chastises the program with the criticism of a lack of integration of the Social and Biological Sciences. This certainly contradicts the paradigm of collaboration under which the PIs live and breath and which defines the CRSP model as a 'jewel in the crown' of USAID. How is it then that the Biological and Social Science projects survived in the funding hiatus if we had not been integrated?
3. Third and fourth paragraphs on page 30. Let's take a reality check on these issues. While I am a strong advocate of the competitive grant system, I have lived in the world long enough to have worked out that the CRSP is a little different. Seems to me, that the PIs, Universities & non-profit organizations and ME must be in place before the grant renewal is written or there can be no hope of a competitive proposal. Further, I would argue that the University Matching Funds that accompany each year's budget certainly DO buy them part ownership in an on-going project. In my opinion, only the phase-out of a project, or gross abrogation of project responsibilities by a PI should allow the opportunity for transfer of projects among participating institutions.
4. The last paragraph under Range Management on page 26 is inflammatory. Au contraire, the PIs resigned because the BoD and ME closed down the Bolivia project - not vice versa.

Now for my comments pertaining to the Breeding project.

5. Last paragraph on page 13. It is true that the paper describing the lactation performance of the OI'Magogo goats involved relatively small numbers of animals from each breed group, however, the numbers were sufficient to have the paper published in a peer reviewed journal and the 4-way cross goats really were true KDPGs. We have reserved the term true KDPG for a 4-way cross animal and proxy DPG for the 2-way cross animals that were sent to Western Kenya for field evaluation. on the other hand, the EEP may be reserving the term true KDPG for the F3 to F5 animals that they believe are necessary before the KDPG can be defined as a breed (see first recommendation on page 15). The EEP can rest assured that this is being well taken care of by the Kenya Stud Book's registration categorization for KDPGs of differing generation status. What truly concerns me about this issue is that EEP seems to have no such qualms about the Indonesia Breeding Project which has only recently entered into the formation of a 4-breed synthetic.
6. Third last paragraph on page 14. I also agree that the issue of parasitism (and *Haemonchus contortus* in particular) is of sufficient world-wide importance that it should be funded as a Component in its own right. In my opinion, the Component should include integrated parasitology, animal management, vaccine and genetics of natural resistance projects and not be myopically focused on vaccines. However, there have not been sufficient funds to launch such a Component in recent years and my efforts in the last renewal competition (also) soundly invited my non-participation.
7. Second last paragraph on page 14. I barely had enough research funds to pay for the CRSP's contribution to the publication charges for these manuscripts, which, along with my personal scientific interests defines my excuse for their basic science focus.
8. Last paragraph on page 14. "Most of this goes on without the need of the Management Entity". I really have no idea what this means. I cannot determine whether it is an innocuous statement and therefore redundant, or perhaps whether it is a little more sinister in intent.

I have also included a number of editorial suggestions in the draft manuscript which I have returned along with the letter.

Sincerely yours,



J.F. Taylor
Professor of Genetics and of
Animal Science.
Breeding Project PI

MANAGEMENT ENTITY

The dominant factor in the functioning of the SR-CRSP over the period of concern for the EEP review has been the unpredictability of USAID funding and support. The EEP has characterized this impact as "enormously expensive and disruptive" and I can only concur. When I was appointed to head the program, the SR-CRSP was slated for termination—a termination based on no program or performance criteria. The environment necessitating such cuts was produced by a general perception that foreign assistance is not essential and that, within this field of endeavor, agriculture is no longer a priority. This viewpoint led to a decline in the budget of the USAID Office of Agriculture and Food Security from \$225M in 1985 to \$50M in 1995. The situation was further compounded by a lack of direction within AFS, before Dr. John Lewis was appointed to head the Office. Since 1995, however, his leadership has restored a vigorous advocacy for agriculture and has increased the stability of CRSP funding. In short, the bottom line for the SR-CRSP is that, during the period under review, performance and progress were greatly affected by severe funding cuts, a lack of predictability in funding, and a sense of poor support from the AFS previous to Dr. Lewis' appointment.

A number of EEP recommendations are presently being addressed in planning for the metamorphosis of the SR-CRSP to the Livestock CRSP over the next two years. First, the EEP recommends that extensive systems be a significant component of the CRSP's future activities, a direction already underway. The importance of sustained production in extensive systems for the food security of a large sector of the world's population has been taken into account. In addition, one of the three major themes of the future Livestock CRSP will be agricultural impact on the environment. As grazing is the single largest use by man of the land, the impact of this activity by both pastoral and conventional grazers has significant implications at the local, regional and global scales. Our programs in East Africa and Central Asia will have major components which address this theme.

Second, the EEP would like to see more private sector involvement. In the past, SR-CRSP collaborations with non-university partners have typically been after-the-fact and have not therefore fostered the full potential for collaboration. The plan for the new CRSP, to the contrary, devotes a full year to the process of problem identification, diagnosis, team building and proposal writing, to secure the most diverse and effective partnerships possible. This major innovation in the organization of the CRSP aims at developing a mechanism for undertaking meaningful team building exercises with non-university partners, such as IARCs, NGOs and private sector entities, early in the process as well as for promoting productive collaboration in the formation of research plans.

Third, the EEP notes that the SR-CRSP administrative structure could be streamlined and reduced. The Management Entity, for its part, has proposed, in line with the principles of reengineering currently fostered by USAID, that all the governing boards of the CRSP be condensed into a single Advisory Panel. This restructuring solves a number of problems, the most obvious being to bring the governing board into closer contact with the program. While having a large number of individuals on a variety of governing panels may contribute to democratic process and a breadth of expertise, it also has the effect of limiting program contact and restricting knowledge of CRSP activities. The decisions of the governing body will need to be increasingly more fine-tuned to programmatic function and performance, and to the political and scientific environment both at home and abroad. When dedicated and informed individuals are in intimate contact with the CRSP through intense, although perhaps short-term, participation on the Advisory Panel their decisions will more likely be appropriate, insightful and effective.

Fourth, the EEP recommends processes which open the program up to the best US and host country scientists. Two points should be made in response. First, USAID has severely

damaged its credibility with the US land-grant universities by its lack of support for agricultural research when all factors indicate the enormous role that agriculture plays in the economies, environmental health and food security of the nations it is trying to assist. Its attempt to eliminate 3 CRSPs despite their remarkable performance (as judged by their own external reviews of the CRSPs), the instability of USAID's funding stream, and a perception of overregulation and micro-management have discouraged some of the best US faculty from participating. Second, the backbone of the relationship between USAID and the researchers in the program has been the link between the US universities and the Agency. Therefore once the initial partnership with universities was established, if a PI dropped out, the institutional linkage remained and a new PI from that institution was appointed. The institutional linkages have been very important mechanisms for CRSP support when funding from the Agency has been held up or in question. However a tension exists between the need for the strength of institutional partnerships and the value of having a broader pool of scientists from which to replace PIs. Thus we have proposed to USAID that a subgrant be written with each participating university which stipulates that if a PI is to be replaced the subgrant will end and an open competition will ensue.

Finally, as Director, I must commend the PIs, Resident Scientists and our Program Officer, Joyce Turk, for their incredible resourcefulness and perseverance in sustaining the SR-CRSP program over a period of 14 months—with virtually no funding. Many heroic examples may be cited of individuals finding novel ways to stretch funds, using other resources to meet SR-CRSP responsibilities, and sometimes working for half salary or no salary at all. While this is not the ideal way to run a program, it is certainly a testimony to the dedication of SR-CRSP personnel to making this world a better place. No one should underestimate the pain and angst caused by laying off loyal and hard working staff in host countries, nor the frustration of having lost good people to more stable employment when funding was restored. Clearly the EEP has underscored the impact of the funding crisis and hopefully, by giving it center stage in this report, will highlight the problem to USAID.



Montague W. Demment
Program Director

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Earl Kellogg, Winrock International
Rafael Vera, IBTA - Bolivia
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Kevin Pond, North Carolina State University
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Hudson Glimp, University of Nevada --Reno
Edna McBreen, West Virginia University
Glen Vollmar, University of Nebraska -- Lincoln

MANAGEMENT ENTITY

Montague W. Demment, Director
James W. Scott, Assistant Director
Susan L. Johnson, Administrative Assistant
Janette Reyes, Student Assistant

USAID

Joyce Turk, Program Manager