



# RUMINATIONS

NEWSLETTER OF THE SMALL RUMINANT/GLOBAL LIVESTOCK COLLABORATIVE RESEARCH SUPPORT PROGRAM

## Causes of High Lamb Mortality in Kazakhstan Explored

As part of the Small Ruminant/Global Livestock CRSP Project in Central Asia, Dr. Mary Gessert traveled to Kazakhstan in April 1998 to consult with scientists at the Kazakh Center for Sheep Selection and Genetics on the causes of lamb mortality in flocks involved in the breeding trials. Dr. Gessert is a veterinarian in private practice from Malone, Wisconsin, who specializes in small ruminants and has extensive experience working with sheep

health issues in developing countries (e.g. Egypt, Morocco, Armenia). She is a sheep producer and has considerable experience in sheep management.

Dr. Gessert worked with a group of researchers, shepherds and two veterinarians at the experimental sheep farm outside the village of Aksenger, west of Almaty. They inspected pastures, lambing facilities, and

livestock on the farm, and they collected fecal samples from two flocks for parasite examination. With the members of the group observing, Dr. Gessert also performed necropsies on lambs that had died in the previous 24 hours.

The shepherds and veterinarians told Dr. Gessert that lamb mortality was higher than normal this year due to a difficult winter and lack of feed for the ewes. Consequently, the ewes went into lambing in poor body condition with a reduced milk supply. Mortality

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## Agroecosystem Health Framework Considered at Planning Workshop in Addis Ababa, Ethiopia

Dr. Charlotte G. Neumann of UCLA was invited to attend a workshop held at ILRI in Addis Ababa, Ethiopia from May 11 - 15, 1998 to consider a new concept and framework being introduced into agriculture and livestock activities. This concept is that of "Agroecosystem Health". The meeting was supported by the International Development Research Center of Canada (IDRC) and hosted by ILRI.

The main thrust of the meeting was to better define the concept and to help operationalize the concept through the discussion and critical analysis of a research

proposal being put together by ILRI for submission to IDRC to test out the concept. The framework is viewed as a dynamic system of three interrelated and interacting domains:

- 1) The health of livestock in agriculture systems which includes the ability of the animal to reproduce, produce milk and/or meat and perform draft functions if appropriate.
- 2) Environmental health
- 3) Health and well-being of human beings which includes health, nutrition and the ability

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# SR/Global Livestock CRSP Annual Year-End Conference To Focus on Agriculture/Environmental Interface Issues

The Small Ruminant/Global Livestock CRSP is planning to hold its annual year-end in East Africa, August 31 - September 3 1998. The conference is being held in Tanzania at Tarangire National Park to highlight both the CRSP's commitment to East Africa and to conservation in relation to livestock production.

The SR/GL-CRSP activities in East Africa are focusing on increased early warning capacity, risk management through asset and income diversification, child nutrition, and balanced land use systems incorporating both livestock production and wildlife conservation. The conference will be attended by all of the SR/GL-CRSP projects (East Africa, Central Asia and Latin America) operating with

similar goals and interests but in different ecosystems. Participants will be refining the SR/GL-CRSP program's global goals and objectives as well as developing a plan of action for addressing these objectives. Panel discussions and presentations will focus on problems at the agriculture/environment interface.

Presenters include Dr. David Cumming, World Wildlife Fund, Zimbabwe and Dr. Norman Owen-Smith, University of Vits, South Africa. Dr. Cumming will give an overview of the Southern Africa experience in conservation management. Dr. Owen-Smith will address the key issues that link modeling efforts to policy implementation.

At the close of the conference, participants will address issues of technology development and transfer. The session will be a first step towards a more in-depth policy workshop to be held in the coming year. The workshop will develop a blueprint for engaging government officials to insure that the information and models developed by the SR/GL-CRSP will be effectively used to formulate policy.

## Dr. Neumann to Present at HPI Symposium

Heifer Project International will hold a Symposium on Human Nutrition and Livestock October 14, 1998 in Little Rock, Arkansas. SR/GL-CRSP Principal Investigator, Dr. Charlotte Neumann, UCLA, has been asked to present and to join a panel on "Modifying Livestock Programs for Improved Nutritional Impact". The Symposium precedes HPI's Conference on World Hunger scheduled for October 15 - 17, 1998.

The pre-conference symposium will focus on the role of animal products in ensuring healthy human development. Discussions will center around the nutritional impact of animals and animal products on the food security of families in the developing world

For more information on the Symposium or Conference, please contact Heifer Project International, P.O. Box 808, Little Rock, AR 72203-0808.

## Upcoming Events

- **31 August - 3 Sept. 1998**  
*SR/GL-CRSP Year-End Conference*  
Tarangire National Park,  
Tanzania
- **14 October 1998**  
*Heifer Project International Symposium: Human Nutrition & Livestock in the Developing World*  
Little Rock, Arkansas
- **15 - 17 October 1998**  
*Heifer Project International Conference on World Hunger*  
Little Rock, Arkansas
- **18 - 22 October 1998**  
*American Society of Agronomy Meeting*  
Baltimore, Maryland



# Viability of Forming Community Credit Unions Among Pastoralists in Southern Ethiopia Assessed

By Dr. Layne Coppock, Utah State University

As reviewed in the Spring 1998 issue of *Ruminations*, work by PhD candidate Solomon Desta of Utah State University revealed that Boran pastoral households in southern Ethiopia have endured massive losses of cattle wealth during the 17 years between 1982 and 1997. Averaged over 56 randomly selected households, the typical loss to cattle mortality was 107 head per household with a value of nearly USD 9,000. This loss of capital assets was mostly associated with two drought pulses in 1983-4 and 1991-2. Cattle mortality was largely due to starvation and other stresses associated with drought and interactions of drought with high stocking rates. These losses are especially significant considering that the typical Boran household has an annual income (cash and in-kind) of less than USD 1,000 per year. Extrapolated to the entire pastoral population in the southern rangelands, aggregate losses of capital assets in the form of cattle deaths from 1982-97 grows to about USD 300,000,000. Desta also found that the Boran are gradually becoming poorer as a result of regular losses of livestock and steady growth in the human population. The Boran remain largely unconnected to local towns in terms of alternative

economic investment or access to financial services.

One problem thus becomes how to start to diversify the asset base of such a society to begin a process of a more-sustainable accumulation and investment of wealth and mitigation of famine risk and poverty. Asset diversification is but one component of risk management that also includes income diversification and increased access to information and external resources. Improvement

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**Asset diversification is but one component of risk management...**

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of rural financial services is one initial option that can be pursued to diversify assets and give people choices regarding how they store wealth. It is envisioned that given the proper education and access, clever pastoralists can learn to spread their wealth among livestock and non-livestock assets in order to maximize returns and minimize risks. In addition, the collective savings of pastoralists could benefit society at large when recycled as credit for urban-based entrepreneurs and funds for local projects involving rural community

development and rehabilitation of rangeland resources.

The Pastoral Risk Management Project lead by Utah State University has included the World Council of Credit Unions, Inc. (WOCCU) located in Madison, Wisconsin, as a partner in the diagnosis of opportunities to enhance rural financial systems in pastoral regions during the first year. Mr. Abraham Ndofor, a regional expert for WOCCU based in Cameroon, was hired to conduct a 2-week consultancy in southern Ethiopia to assess the potential for successful, grass-roots credit union development among Boran pastoralists. While the local Commercial Bank of Ethiopia (CBE) has enjoyed an excellent reputation over many years and is present in a number of the larger towns of the rangelands, it has been postulated that community-based credit unions in smaller villages might be the best way to initially reach more pastoralists located further from urban centers. Prospects for local control of financial resources might also be more appealing to pastoralists. The CBE could then back-stop credit unions in terms of technical and administrative support. The terms of reference

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## Viability of Forming Community Credit Unions Assessed

for Ndofor included evaluation of rural finance policy, assessment of local demand for rural financial services, and noting socio-economic attributes of the local population that could mitigate for or against credit union formation. Finally, Ndofor was asked to propose novel management structures for credit unions based on peculiar features of the local society. Ndofor's work included a number of interesting findings. Some highlights are briefly listed below:

(1) The Financial policy situation in Ethiopia is dynamic. For example, while there are no laws that currently allow formation of community savings and credit cooperatives, some entities are pushing for such legislation now at the federal level. The credit unions which already exist are employer-based and located in the larger cities;

(2) Relatively few pastoralists at present appear to use formal financial services in the southern rangelands. A general ignorance of financial services prevails. Opinions of pastoralists were mixed with regards to the utility of informal financial services that they had used. There is, however, a general and increasing awareness that the pastoral world in the south is rapidly changing and that such

change will include a greater reliance on money and markets. The concept of a household-level, savings mobilization scheme was uniformly regarded as a good idea by a broad range of pastoralists and local administrators that were interviewed;

(3) Although the vast majority of the local pastoral population is illiterate, it was concluded that there are enough educated people to manage a community credit-union system. In addition, the individual and community values of Boran culture were found to be conducive to successful credit union formation; and

(4) Ndofor proposed a highly decentralized structure for a community credit union network that reflects the spatially dispersed nature of pastoralism. A couple layers of advisory and supervisory personnel were also recommended, and these committees could easily include elements of the traditional leadership which oversees other aspects of community resource sharing.

In conclusion, Ndofor felt the basic elements appeared favorable for formation of community credit unions in the southern rangelands, assuming that policy constraints can be

overcome. A pilot approach was recommended whereby several different forms of credit union implementation could be tested and management rigorously evaluated. It was emphasized, however, that the biggest initial step would require a comprehensive community education program addressing various types of financial services, and how such services could help meet changing needs of the pastoral society. For maximum effectiveness, constraints in livestock marketing need to be alleviated. Periodic bottlenecks for selling livestock regularly occur in the southern rangelands and this constrains monetization, economic security, and use of financial services. Analysis of how to alleviate constraints in marketing channels is another important dimension of the Pastoral Risk Management Project, and will be covered in future issues of *Ruminations*.

For more information on this project, please contact Drs. Layne Coppock (lcoppock@cc.usu.edu), Abdillahi Aboud (eu-cs@net2000ke.com), Christopher Barrett (jcp4@cornell.edu), or Peter Little (pd litt1@ukcc.uky.edu).

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# Working with Communities and Land Use in Latin America

*By Dr. Timothy Moermond, University of Wisconsin-Madison*

Despite delays, difficulties in communication, and severe funding limitations, the Livestock-Natural Resource Interfaces project partners in Mexico, Ecuador, and Bolivia have been moving forward with remarkable enthusiasm and energy. Team partners are involving communities in a vision of land use and livestock management that could reverse the overt degradation of these fragile environments and improve the lives of local families. What follows are highlights of recent visits and developments from each area.

**Mexico:** A series of cattle exclosures that were set up in cooperation with local farmers have already show strong differences in and out the exclosures. The dialog with local farmers to consider alternatives has resulted in the establishment within the local community of nurseries of local cattle forage species. Local people are involved in collecting seeds of known and favored native forage species and planting nurseries with these seeds. These nurseries will enhance their ability to create better, more diverse pastures. Farmers who normally sent their cattle into woodlands browsing areas during the rainy season are now considering a modified rotation system to take

advantage of their new pastures and improve the health and production of their cattle.

**Ecuador:** The primary site in the communities of the watershed of the Rio Cosanga now has a vegetation map completed to serve as the base for assessing current land use. An autodiagnostic of the communities of this watershed was completed during the fall and is now serving as the base for more in-depth studies of livestock management and agricultural patterns of different communities of this area. The autodiagnostic work has shown some dramatic differences in the characteristics of each community that will strongly influence the planning options which are likely to succeed in each community. In one community, trout farming is appearing as a viable option while in another cattle production is the main activity. In another community at the edge of the biologically diverse Antisana Ecological Reserve, conflicts over land ownership will be the first priority to be resolved. Education programs are being used to incorporate ideas of the nature and value of the forests and the importance of good land use practices into the communities. One local farmer who is experimenting with pasture rotation reported

more than a 2-fold increase in milk production in the first year. Farmers such as this will be used as models to demonstrate better land use practices.

**Bolivia:** The Bolivia groups have prepared a small pamphlet that outlines the intended project. They have been using this to spread word of the nature and goals of our project. In June, the P.I. visited local farmers in the two study areas and participated with meetings of Guarani people to introduce the project formally. Local leaders of the Guarani people of the Timboy study area in north central Tarija after numerous thoughtful questions about the project gave a strong positive endorsement to accept the project in their communities. The meetings quickly focused on details of setting up a cooperative process to develop an autodiagnostic for the local communities within three microwatersheds of the Timboy area. That process is now underway.

The other site to the south of Timboy, the La Cueva site, is located just north of the Tariquia Flora and Fauna National Reserve (one of the “parks in peril”). At this site, the new Popular Participation

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### Agroecosystem/Health

to carry on the normal activities of daily living.

A recurring theme was the necessity and requirement that true community participation take place at all levels and in all phases of project development if sustainability and ownership is to occur. Stakeholder involvement was felt to be important in problem identification and assessment; priority setting; research; and policy formulation and program planning as an ongoing process. The hypotheses, aims/objectives, methods, criteria for evaluation, partners and scale were discussed and freely critiqued by the group in order to improve the proposal and identify gaps. The project was viewed as an initiative directed at the mountainous zones of the world -- East Africa, Asian Himalayas, Andean regions but that it would start off on a modest scale in Eastern Africa.

Dr. Neumann and a nurse from AMREF were invited to introduce health concepts, activities and possible indicators into the concept and the proposal. Dr. Neumann also presented a background paper on the "Role of Animal Source Foods on Improvement of Diet Quality and the Growth and Cognitive Development in Children". She chaired two working groups and served on the project drafting committee & well.

## AMREF

African Medical and Research Foundation (AMREF) is an organization dedicated to improving the health-care in Africa through research, training, and delivery of services. Founded in 1957, AMREF has an extensive and reputable history of working directly within the regions in order to assist local communities. AMREF works in Uganda, Rwanda, Kenya, Tanzania and South Africa, and has regional offices in each country as well as headquarters in Nairobi, Kenya.

AMREF is an institutional partner collaborating on the SR/GL-CRSP project "Role of Animal Source Foods to Improve Diet Quality and Growth and Cognitive Development in East African Children". Lead Principal Investigator for the project is Dr. Charlotte Neumann, Univ. of Calif., Los Angeles.

AMREF has a variety of innovative programmes with an emphasis on appropriate low-cost health care. Through its Health, Policy and System Reform Programme, AMREF works with national health

systems, health-related NGOs and community based organizations to improve the effectiveness and efficiency of primary health care, particularly in rural areas and among the urban poor. Using research, training and institutional capacity building, AMREF improves the quality of health care offered. Emphasis is often on improving health care services for women.

The AMREF Training Centre targets health centre staff and health management teams. AMREF offers a variety of courses including health service management, health learning materials production and a diploma course in community health. Its training programme emphasizes sustainability by training mid-level health workers as facilitators and trainers.

Problems of environmental deterioration in Sub-Saharan Africa and its impact on health are addressed by AMREF's Environmental Health Programme. Projects focus on issues of water, good hygiene, sanitation, malnutrition, malaria and other diseases.

*For more information on AMREF contact their headquarters at: P.O. Box 30125, Nairobi, Kenya. Telephone: 254-2-501301, Fax: 254-2-609518, Email: amrefhq@users.africaonline.co.ke or visit their web site at: <http://www.amref.org/>.*

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### **Working with Communities**

Law of Bolivia has placed responsibility and initiative for environmental planning in the hands of local communities. These communities expect some guidance and assistance in the process from the outside. Several local farmers told us that our project was the first to approach them and that our assistance in finding better land management options would be appreciated. The president of the communities of two of the microwatersheds of our site took us on a walking tour of the watersheds. He has moved ahead to arrange public meetings with the local community members to discuss the development of a process to produce an autodiagnostic of their communities. Those meetings are now in progress. The timing of the project for these areas could not be better, nor the need for that matter, greater. To sit in the homes of these people tells of their work and their needs. To look out over the pastures and forests of the hills around their farms also tells of the already serious losses of land resources on nearby hills. The hills just beyond those show the potential promise on lands that still retain much of the value of the watershed.

*For more information on this project, please contact Dr. Timothy Moermond, [tcmoermo@facstaff.wisc.edu](mailto:tcmoermo@facstaff.wisc.edu)*

## **Expert Consultation Explores Agricultural Issues and Options for Transition Economies**

The International Service for National Agricultural Research (ISNAR) recently invited SR/GL-CRSP Program Director, Dr. Montague Demment, to participate in the Expert Consultation on agricultural research held June 3 – 5, 1998 in Den Hague, Netherlands. The Consultation focused on critical issues and options for strengthening the agricultural systems of the transition economies of Central Asia and the Caucasus (CAC).

Discussions centered on specific technical aspects of agricultural research management, which are of primary importance to agricultural professionals from Central Asia and the Caucasus. Panels were formed around three themes: 1) organizing agricultural research; 2) financing agricultural research; and 3) defining the agricultural research program. Each panel included presenters from CAC countries, donor/development agencies, CGIAR centers and other countries. Dr. Demment was asked to join the panel on Program Management. Presentations highlighted key issues within each theme and served to stimulate discussion.

Dr. Demment presented a paper on “Balancing Agriculture and Environment”. His presentation explored the characteristics of research at the

agricultural/environmental interface. Dr. Demment noted that by giving economic value to the environment, researchers have the potential to translate benefits from alternative management practices in agriculture and environment into economic gains. In order to justify its funding, agricultural research must make a direct link between the research, technology development, implementation and economic impact.

All countries of Central Asia and the Caucasus and other former communist countries (e.g., Lithuania, Hungary, Poland, Russia and Ukraine) were represented by senior professionals and officials at the Expert Consultation. In addition, agricultural professionals from Western countries (e.g., Netherlands, France and USA); national and international donor and development organizations (e.g., GTZ, USAID, World Bank, IFAD, FAO, EU); and the CGIAR research centers were also invited. The Consultation was sponsored by ISNAR and the International Fund for Agricultural Development (IFAD). Proceedings of the Expert Consultation are being produced and will be widely distributed in both Russian and English.

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## Causes of High Lamb Mortality in Kazakhstan Explored

estimates for the first two weeks of lambing ranged from 15-30%.

Dr. Gessert confirmed that the major cause of high lamb mortality was poor nutrition of ewes during late gestation. She recommended that emergency feed supplies be used at that time along with trace mineral salts to help prevent mineral deficiencies without requiring the use of mixed concentrates.

Based on the necropsies, the most commonly observed cause of lamb mortality was omphalophlebitis, a septicemia that develops when bacteria

migrate into the umbilical cord at birth. Dr. Gessert emphasized that this disease can be prevented through (1) excellent sanitation in lambing areas, (2) dipping the umbilical cord in 7% iodine at birth, and (3) adequate colostrum consumption within two hours of birth.

The shepherds told Dr. Gessert that they had already run out of iodine. At the two state-run veterinary pharmacies in Almaty, iodine is two to three times more expensive than in the US. The group discussed the importance of finding an economical, dependable source of iodine for future use.

Dr. Gessert explained to the staff that good colostrum management is essential in preventing neonatal lamb loss. Lambs need to receive colostrum within the first two hours of life. Colostrum provides energy that prevents starvation and hypothermia as well as antibodies that protect the lamb from infectious disease. Demonstrations of tube feeding were done at each flock location. Feeding supplies and dosage instructions were left with the shepherds.

In her final report, Dr. Gessert said that overall knowledge of sheep husbandry is very good in Kazakhstan, and that the incidence of lamb mortality appears to be caused by a lack of

necessary supplies rather than a lack of knowledge. She also said that having the farm personnel observe the necropsies served to reinforce the importance of the disease prevention practices recommended.

Dr. Gessert's work on lamb mortality is part of the Central Asia project's goal to improve newborn lamb survival through management, health, and nutritional interventions. In addition to improving the survival of newborn lambs, the project is carrying out various breeding trials aimed at increasing the prolificacy of Kazakh ewes. The objective is to increase livestock production, especially meat production, of local sheep. Both measures are aimed at increasing the number of lambs that can be brought to market.

The results of Dr. Gessert's work will be used to address the dramatic decline in sheep numbers since 1991 due to lack of inputs and the economic difficulties associated with the reorganization of state and collective farms.

*For more information on this project, please contact Lead Principal Investigator, Dr. Kenneth Shapiro, University of Wisconsin-Madison, International Agricultural Programs, 1450 Linden Dr., 240 Agriculture Hall, Madison, WI 53706-1562. Email: kenneth.shapiro@ccmail.adp.wisc.edu*

### ***Ruminations***

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Published quarterly by the Management Entity, Small Ruminant/Global Livestock Collaborative Research Support Program, University of California, Davis, California 95616, USA. Telephone: (530) 752-1721, Fax: (530) 752-7523.  
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*This publication was made possible through support provided by the Office of Agriculture and Food Security, Global Bureau, U.S. Agency for International Development, under Grant No. DAN-1328-G-00-0046-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.*

*Printed on Recycled Paper.*