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Central Asian Rangelands' Role as Missing Carbon 'Sink' Explored

climate stability comparable to conserving the tropical rain forests," says Montague Demment, director of the UC Davis-based Small Ruminant/Global Livestock Collaborative Research Support Program, which is coordinating the study. "We may very well find that conservation and restoration of the rangelands, in the United States and internationally, have a significant impact on the world's 'carbon budget' and are critical factors in slowing global warming."

Restoring Central Asia's rangelands, which occupy more

than 647 million acres, could be equivalent to a 30 percent reduction in the carbon emissions caused by humans in all of the former Soviet Union, Demment says. Conversely, rangeland degradation through cultivation, grazing or development, could release substantial amounts of carbon dioxide into the atmosphere.

The rangeland project, led by Dr. Emilio Laca, an assistant professor of agronomy and range science at UC Davis, will construct a natural resource database for use in quantifying the role of Central Asian

rangelands on the global carbon budget. The CRSP project includes an international team of researchers from USDA-ARS Forage and Range Research Lab at Utah State University, South Dakota State University, ICARDA, Samarkand University in Uzbekistan and UC Davis.

The study was recently featured on the Environmental News Network. Their website is located at <http://www.enn.com>.

For more information, contact the Management Entity at srersp@ucdavis.edu.

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RUMINATIONS

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

Reengineering Process Expands, Strengthens SR/GL-CRSP Program

In 1995, Dr. John Lewis, Director of the Office of Agriculture and Food Security at USAID, asked the SR-CRSP to reengineer its programs and structure to respond to USAID's new vision. The reengineering process has resulted in a stronger, demand-driven approach to livestock policy, production, processing, marketing and consumption.

Regionally defined projects have been developed through a nine-month assessment/team building process which was customer driven, regionally oriented with global links between research themes, and truly interdisciplinary with the research based on problem models identified by the end user.

The program focus has expanded to include all livestock and addresses issues of the environment; the importance of animal products in child survival and cognitive and physical development; and the role of animal agriculture in national economic growth. Project teams consist of collaborative partnerships with US Universities, NARs, IARCs, NGOs, grass root farmer's and women's

organizations, government agencies and the private sector.

The SR/GL-CRSP projects reflect the objectives of the Clinton Administration's New Partnerships Initiative which aims to strengthen social, economic and political capacity in developing countries where it is most vital — at the community level.

Upcoming Events

- *20 - 22 January 1998*
BIFAD Task Force Meeting
Washington D.C.
- *26 - 29 January 1998*
BASIS CRSP Priority Setting
Workshop
Tashkent, Uzbekistan
- *9 - 12 February 1998*
ASARECA Network Planning
Meeting
Entebbe, Uganda
- *23 - 26 February 1998*
PAC Meeting
College Station, Texas
- *14 October 1998*
HPI Symposium: Human
Nutrition and Livestock in the
Developing World
Little Rock, Arkansas

Rangeland's Role in Buffering Global Warming Explored

For years scientists have known that more carbon dioxide — a prime suspect in global warming — is being released into the atmosphere than is accounted for by the rising of atmospheric carbon dioxide and by known carbon "sinks" such as the oceans and forests.

Suspecting that the world's vast rangelands may be the unidentified carbon sink that is significantly tempering global warming, an international team led by UC Davis researchers is turning its attention to the Central Asian rangelands. "Properly managed rangelands could have a relevance for global

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PROJECT HIGHLIGHTS

The Small Ruminant/Global Livestock CRSP is currently active in three regions of the world: Central Asia, Latin America and East Africa. In 1997, seven new projects were launched.

The SR/Global Livestock Central Asian Regional Program is addressing issues of global warming, policy, transition to market economy, support for democracy and the environment and livestock production. Two projects have begun work in the region of Central Asia. **Dr. Kenneth Shapiro**, University of Wisconsin—Madison, will lead an international team of researchers exploring the impact of economic reform on the livestock sector in Central Asia. The objectives of the project are to provide policy makers with information that will help them facilitate the transition of former state-controlled farms to new types of ownership, use-rights, and institutional organization that engender a stable, democratic society; and to develop technological options that increase the productivity of the livestock sector in environmentally sound ways. **Dr. Emilio Laca**, University of California—Davis has organized his team into five groups, each led by 3 - 4 scientists. Each group will concentrate on a particular aspect of the project. Research will focus on the main limitations to productivity of animal production systems and develop technological alternatives; constructing an economic model to predict productivity and profitability;

and, use of GIS to describe and quantify the regions basic natural resources. The team is also exploring the role of rangelands as carbon “sinks” that attenuate climate change (see article page 1).

In Latin America, **Dr. Tim Moermond**, University of Wisconsin - Madison, focuses the research of his project “Livestock-Natural Resource Interfaces at the Internal Frontiers” specifically in Mexico, Bolivia, and Ecuador. This research addresses major problems in the mid-elevation mountain and foothill regions of Latin America: deforestation, serious changes in the water regime, loss of biodiversity and biological resources, and deterioration of the ability of rural peoples to sustain their livelihoods. Livestock represent a key element implicated as part of the problem and a needed part of the solution. The project work will be organized around four principal goals which span all of the work areas — community organization and participation, livestock and land use, landscape analysis and education — and form an overlapping and iterative set.

The East African Regional Program of the SR/GL-CRSP will address issues of conflict prevention, food security, and environment. Four projects were funded in East Africa. **Dr. Charlotte Neumann**, University of California—Los Angeles and her international team will study the causal relationship between animal source foods and improved child

growth and cognitive development. The project aims to empower women by establishing women's livestock credit groups, increasing extension services for and by women and by implementing gender sensitive nutritional training. A Livestock Early Warning System (LEWS) is being developed by a team of scientists led by **Dr. Paul Dyke**, Texas A&M University - Blackland Research Center. LEWS is expected to provide crisis mitigation information six to eight weeks earlier than current systems. **Dr. Layne Coppock**, Utah State University, has focused his project on pastoral risk management interventions. Using asset and income diversification, enhancement of information flow and use, and improved access to external resources, the project aims to improve pastoral risk management. The research teams study area extends over 700 km from southern Ethiopia to north-central Kenya. **Dr. Micheal Coughenour**, Colorado State University, leads an interdisciplinary team developing an integrated modeling and assessment system for improved information and understanding of natural resource conservation. The model will be capable of predicting interactions between livestock and wildlife in terms of spatial-dynamic competition for forage and disease transmission and effects and will quantify the impacts of land tenure, enterprise scale, and conservation policy on livestock production, pastoral welfare, wildlife, and ecosystem integrity.



PROFILE

Dr. Penelope Nestel Appointed to Program Administrative Council

By Tara Foster

Dr. Penelope Nestel of Johns Hopkins University is the newest member of the Program Administrative Council. She is a faculty member in the division of Human Nutrition, Department of International Health and is currently working with USAID on the

Opportunities for Micronutrient Intervention project. Dr. Nestel has extensive research experience in human nutrition, including women's health and international nutrition in Africa, Thailand, India and Latin America. She has also

worked as an Agricultural Economist and a Public Health Advisor.

Dr. Nestel has substantial experience working with USAID and other international organizations as a nutrition consultant. She served on an advisory panel with the International Food Policy Research Institute; she has also served as a consultant for the World Health Organization, USAID, and the United Nations.

The PAC is confident that Dr. Nestel will make a valuable contribution to the CRSP.

KDPG Production Systems Project Summarizes Studies in Report

The Kenya Dual Purpose Goat (KDPG) Production Systems Project started its research activities in western Kenya in 1980. In 1993, the project moved to the lowland humid Coast and eastern Kenya enabling researchers to test KDPG technologies in different environments.

A report prepared by Dr. Patterson Semenye, Project Resident Scientist, summarizes the work completed 1993 - 1997.

The report covers the monitoring research of the KDPG impact study, on-farm and on-station farms studies, performance of Toggenburg crosses and KDPGs, regionalization activities and national outreach activities.

In addition, results of the Production Systems Project's

(PSP) collaborative work with the Animal Health Project (AHP) is reported. The SR-CRSP AHP was successful in producing a thermal stable contagious caprine pleuropneumonia (CCPP) vaccine.

During field testing of the vaccine, the PSP conducted participatory rural appraisals, monitored changes and potential management alternatives, characterized production systems and identified production constraints, interventions and opportunities. The results of these studies are detailed in the summary report.

For a copy of the report, contact the Management Entity of the SR-Global Livestock CRSP at srersp@ucdavis.edu or at the address listed on page 4 of this newsletter.

In Memory

Dr. S. Gordon Campbell passed away this fall. His contribution to the SR/GL-CRSP spanned almost ten years as Chair of the EEP and most recently as an AP member. Gordon was a wonderful human being, intellectual but grounded, serious but with a twinkle in his eye, confident but self-effacing, and most of all a humanist who gave of himself for the benefit of others, most of whom he never met nor whose names he never knew. He embodied the best of academia and veterinary medicine, great competency and great compassion. We will miss him dearly.