Summer 2008

RUMINATIONS

Newsletter of the Global Livestock Collaborative Research Support Program

Violence Disrupts GL-CRSP Project Activities in Kenya

Violence in Kenya stemming from the disputed presidential election in December 2007 has significantly impacted GL-CRSP activities in East Africa, especially in the Rift Valley, the primary region of political and ethnic fighting. Eight of 12 GL-CRSP projects in East Africa are located in Kenya and are associated with regional, cross-border activities. Two of the biggest projects are located in Nakuru and Eldoret, places where extreme violence has occurred. All of the GL-CRSP Kenyan projects had to be put on hold as universities closed down for a period of time. Fieldwork, the primary vehicle for program operation, had to be suspended. In addition, several Kenyan team members critical to GL-CRSP project implementation plans have gone missing or are considered displaced.

According to Dr. Patterson Semenye, Project Coordinator for the GL-CRSP Sustainable Management for Rural Watersheds (SUMAWA) project in Njoro, Kenya, post-election violence led to the destruction of several engineering and intervention projects established in the Njoro watershed. Project engineers had completed development of several watering

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Advancement of Women in Africa Focus of WID Support

The GL-CRSP has awarded approximately $435,000 in WID (Women in Development) funds to projects aimed at the advancement of women worldwide. Currently, four projects are being supported for their efforts in working to improve women's equality and empowerment. Project activities and accomplishments are highlighted below.

PARIMA (Pastoral Risk Management) project received WID funds equaling $75,000 to implement a project component entitled *Improving Risk Management on East African Rangelands – Women in Development,* among pastoralists on the Borana Plateau of Southern Ethiopia. Past PARIMA efforts have resulted in the formation of 24 government-recognized pastoral cooperatives, the majority of which are dominated and administrated by women. Since human health was determined to be a major gap for cooperatives as well as a priority for mothers and children, PARIMA will use WID funds to explore priority health issues among the pastoral women that belong to these

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The Women in Development funds have enabled Freedom From Hunger , Ghana (FFHG) to collaborate with the ENAM project and introduce the project's nutrition education materials to their "Credit through Education" program. FFHG reaches 325 communities and has over 27,000 members in Ghana. In the ENAM project areas alone, almost 5000 women could be affected by the collaboration. Recently, Freedom From Hunger International surpassed the one million client threshold. Photo by Susan Johnson.

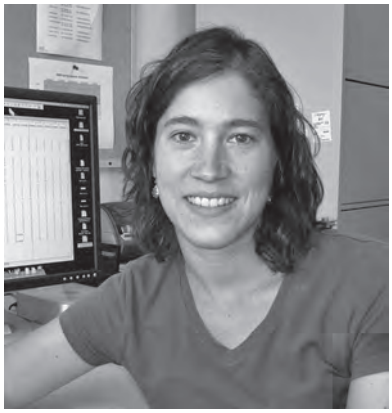
Grad Students Receive Jim Ellis Mentorship Awards

Seven graduate students from four different universities around the globe have been selected to receive the Global Livestock CRSP Jim Ellis Mentorship Award. The grants provide thesis support to outstanding graduate students affiliated with GL-CRSP projects.

Lynda Larmkie Hagan, from the University of Ghana, is conducting research in collaboration with the ENAM project in Ghana. Her thesis is entitled, *"Identifying the Influence of Male Household Members on the Expected Outcomes of the ENAM Project Community-based Interventions."* This study is assessing the impact of male adults on the key expected outcomes of the ENAM project microcredit and nutrition education interventions. The outcomes to be analyzed include whether loans are used to improve caregivers' income generating activities, whether caregivers have increased incomes, and whether animal source foods will be allocated to children at family meal times.

Lynda Larmkie Hagan

Danielle Knueppel, from the University of California, Davis, conducted research in collaboration with the Avian Flu School (AFS) project in Tanzania. Her thesis is entitled *"An Impact Assessment of a Poultry Newcastle Disease Vaccination Program on Villagers in Rural Tanzania."* Danielle compared three villages in the Iringa region, where chicken vaccinations have taken place with three villages which have not implemented the vaccination program. She is looking at variables, such as household income from chicken and egg sales, household food security, consumption of eggs and chicken among children and women, and community support for chicken vaccinations. Knueppel used key informant surveys with village leaders and household surveys with female caregiver respondents as the methodology for collecting data.



Danielle Knueppel

Bolor-Erdene Lhamsuren, from Mongolian State Pedagogical University, is conducting field research with the GOBI project in Mongolia. His PhD dissertation is titled, *"Application of TERRA MODIS Data for Forage Monitoring, Using Ground Information: Example of Hujirt Sum of Unurhangai Aimag and Bugat Sum of Gobi-Altai Aimag."* The objective of the study is to use TERRA MODIS satellite data to monitor the amount of forage in forest-steppe areas with a high density of livestock. The question will be addressed as to see whether an increased resolution of satellite imagery will provide increasing predictability when using it as a variable or covariate for pasture biomass estimation.

Bolor-Erdene Lhamsuren

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GL-CRSP YouTube Channel Launched and New Podcasts Posted on Website

The Global Livestock CRSP is utilizing the most popular Web destination for video-sharing to disseminate research and training information to a mass audience. The GL-CRSP YouTube Channel offers worldwide public access to videos produced by the CRSP or video clips of interest to livestock research. Among the videos currently playing on the GL-CRSP YouTube Channel are: Afghan PEACE Project Interviews; Training on Cashmere Combing; Cashmere from Goat to Sweater; Modernization of Mongolian Livestock System; Herder Alliances and GOBI Livestock Early Warning System. Playlist videos feature topics on HIV and nutrition, climate change and the food price crisis. In the coming year, video clips from GL-CRSP research dissemination workshops and conferences will be posted. In January 2008, YouTube documented nearly 79 million users worldwide and over 3 billion video views. The GL-CRSP hopes to reach just a fraction of that audience. Visit our YouTube channel at:

http://youtube.com/GLCRSP.

The GL-CRSP continues to host its audio podcast program on the website. Ten new podcasts were recently posted. A nine-part series features audio podcasts of discussions from "Repositioning Livestock in the Development Agenda," a two-day livestock initiative planning meeting hosted by the GL-CRSP and World Bank on February 28 and 29th in Washington D.C. The following Podcasts are available for download at the GL-CRSP web site: http://glcrsp.ucdavis.edu/podcasts.

Global Livestock CRSP Podcast Volume 2, Episode 1: Kathy Sierra, Vice President for Sustainable Development at the World Bank, and Director Chair of CGIAR, the Consultative Group for International Agricultural Research, addresses the participants at the planning meeting on the role of livestock in the World Bank's recent Agriculture for Development Report, as well as the new initiatives at the World Bank and CGIAR focused on mitigating the ecological footprint of livestock with a pro-poor focus, redirecting agricultural and livestock research on climate change from the global and regional levels to the farm level, and livestock's contribution to increasing food prices.

Global Livestock CRSP Podcast Volume 2, Episode 2, Part 1: Emerging Infectious and Zoonotic Diseases. A panel discussion at the GL-CRSP and World Bank's planning meeting considers the issue of Emerging Infectious and Zoonotic Diseases within the greater context of agriculture and livestock development initiatives.

Global Livestock CRSP Podcast Volume 2, Episode 2, Part 2: Emerging Infectious and Zoonotic Diseases. A panel discussion at the planning meeting continues the conversation on the issue of Emerging Infectious and Zoonotic Diseases within the greater context of agriculture and livestock development initiatives, with particular focus on livestock marketing and

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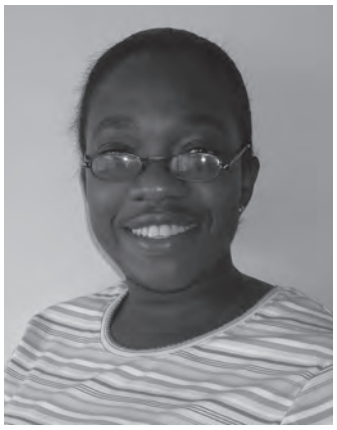
Grad Students Receive Jim Ellis Mentorship Awards

Elizabeth Micah, University of Ghana, will be conducting research in collaboration with the ENAM project in Ghana. Her thesis is entitled, *"The Consumption and Nutrient Contribution of Ready-to-Eat Foods to the Total Dietary Intakes Among Children 2-5 Years in Ghana."* Preliminary data from the ENAM project shows that a significant proportion of caregivers feed their children with purchased ready-to-eat (RTE) food; however, there is a paucity of information about the contribution that RTE foods make to the diets of rural populations, particularly young children. In this study, the RTE foods consumed by young children will be weighed and the information will be used to provide a detailed analysis of the caregiver's decision to offer RTE foods, the magnitude of the RTE food use, and its contribution to macro- and micronutrient intakes of children in rural Ghana.


Elizabeth Micah

Richard S. Mwakapuja, Sokoine University of Agriculture, in Tanzania, will be conducting field research with the Avian Flu School project in Tanzania. His thesis will be a *"Study on Disease Surveillance of Village Chickens Vaccinated Against Newcastle Disease in Rural Communities in Morogoro, Tanzania."* His research will determine if vaccination for Newcastle disease results in survival of younger birds; and if so, whether this creates a shift in the median age of the village flock, and whether the shift in the median age means that more of the flock is susceptible to infectious coyza. The project will measure antibody titers against Newcastle disease in vaccinated and unvaccinated village chicken populations and will include the creation of an age distribution profile and the implementation of a survey for infectious coyza.

Katherene Osei-Boadi, University of Ghana, will be conducting research in collaboration with the ENAM project in Ghana. She will be conducting an *"Assessment of the Nutritional Status of Vegan and Non-vegetarian Children."* Her study will compare the diets, dietary diversity, dietary habits and other indicators of nutritional status among vegan and non-vegetarian children in the Greater Accra region. Study findings may reveal the realities of vegan diets, given the constraints of peoples' daily lives, and provide evidence for careful situational analysis and appropriate recommendations for veganism in Ghana.

David Wolking, University of California, Davis, will be conducting research in collaboration with the SUMAWA and HALI projects. His thesis will be a study on *"Point of Use Drinking Water Treatment Systems and Micro-enterprise Development for Agro-pastoralists and their Livestock in the Rungwa-Ruaha Ecosystem, Tanzania."* David will investigate disease incidence in the Ruaha region, with the aim of developing and adapting BioSand Filtration technology for a point-of-use (POU) water quality intervention as well as the establishment of a field-trial among high-risk agro-pastoral households to assess the impact of improved water quality for household uses.

David Wolking

Global Livestock CRSP Research Briefs Available

Research Briefs are a useful vehicle for informing the development community of critical results and practical implications of those findings. The four-page briefs succinctly present major or preliminary research findings, discuss their practical or policy significance, and provide references for supplementary reading. Copies of the Research Briefs are distributed free of charge by the Management Entity. For copies, please contact the Global Livestock CRSP, University of California, Davis, Davis CA 95616. Email: glcrsp@ucdavis.edu. Publications are also available for download at the GL-CRSP web site, http://glcrsp.ucdavis.edu/publications. Recently produced briefs include:

GOBI FORAGE

Research Brief 08-01-GOBI: Development of Herder Alliances in the Gobi Region of Mongolia

Research Brief 08-02-GOBI: Development of Portable NIRS Technology to Monitor Grazing Animal Nutrition in Mongolia

Research Brief 08-03-GOBI: Verification of Simulation Model and Landscape Map Results for Near Real Time Forage Monitoring in the Gobi Region of Mongolia

ENAM

Research Brief 08-01-ENAM: A qualitative assessment of support programs for caregivers' income generation activities in Ghana

Research Brief 08-02-ENAM: Does the type of Income Generating Activity caregivers engage in influence children's Animal Source Food consumption?

Research Brief 08-03-ENAM: Participatory Rapid Assessment Summary

Research Brief 08-04-ENAM: Enhancing collaborations between research and government ministries: Lessons learned from the ENAM project in Ghana

Research Brief 08-05-ENAM: Development of a Nutrition Extension Course at the University of Ghana: A step-by-step collaborative process

LITEK

Research Brief 08-01-LITEK: Changing Livelihoods, Risky Environments: Social and Economic Change among Pastoralists in East Africa

Research Brief 08-02-LITEK: How Are They Surviving Out There? An Analysis of Total Income in the PARIMA Study Sites

SUMAWA

Research Brief 08-01-SUMAWA: Gross Fecal Pollution of a Rural Watershed in Kenya: Research Identifying Cattle as a Major Source in the River Njoro Watershed

Research Brief 08-02-SUMAWA: Point-of-use treatment options for improving household water quality among rural populations in the River Njoro Watershed, Kenya.

PARIMA

Research Brief 07-01-PARIMA: Collective Action Among Agro-pastoralists in Baringo District, Kenya: Identifying and Nurturing the Entreprenuers

Research Brief 07-02-PARIMA: Stakeholder Alliance Facilitates Re-Introduction of Prescribed Fire on the Borana Plateau of Southern Ethiopia

Research Brief 07-03-PARIMA: Building Effective Community Participation and Stakeholder Partnerships to Promote Positive Change in the Southern Ethiopian Rangelands

Research Brief 07-04-PARIMA: Pastoral Conflict and Use of Key Resources along the Ethiopia-Kenya Border: Implications for Policy and Development

Research Brief 07-05-PARIMA: Honey Production, Processing, Quality, and Marketing in the Mountains of Northern Kenya

Research Brief 07-06-PARIMA: Diffusion of Collective-Action Innovations Among Pastoralists in Liben District, Ethiopia

Research Brief 07-07-PARIMA: Consumer Perceptions on the Quality and Marketing of Milk in Moyale, Kenya

Research Brief 07-08-PARIMA: Can Collective Action and Capacity Building Reduce Vulnerability Among Settled Pastoralists?

For a complete list of Research Briefs available from the GL-CRSP, please visit our website at http:/glcrsp.ucdavis.edu

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GL-CRSP YouTube Channel, New Podcasts on Website

quality control in the face of increasing global demand for meat products, and defining the role of the greater public good in development and disease prevention.

Global Livestock CRSP Podcast Volume 2, Episode 3: Climate Change and the Livestock Sector. A panel discussion at the meeting explores climate change and its impact on the livestock sector, with particular focus on the questions: How are particular regions and sectors in the livestock arena going to be effected by climate change, and what is the role of developing countries in the carbon equation?

Global Livestock CRSP Podcast Volume 2, Episode 4: Industrial Production Systems and the Livestock Sector -- Addressing the Long Shadow. A panel discussion at the planning meeting examines the role of industrial production systems as a tool for livestock development initiatives. Specific emphasis is given to smallholder participation the industrial systems, the rising cost of feed, and the ecological footprint of intensified systems.

Global Livestock CRSP Podcast Volume 2, Episode 5: Biofuel and its implications for the livestock sector. A panel discussion at the planning meeting considers the effects and implications of a growing biofuel industry on the livestock sector, with particular emphasis on the rising cost of feed, the opportunities for smallholder participation in the biofuel sector, and possible intervention opportunities to address evolving challenges.

Global Livestock CRSP Podcast Volume 2, Episode

6: Market Access. A panel discussion at the planning meeting debates the opportunities and challenges surrounding the enhancement of market access for smallholders in the livestock sector. How do various groups utilize market information and information systems? What are the roles for public investment and the private sector in improving market access? How can smallholders adapt to meet global product standards and take advantage of increasing livestock product demand?

Global Livestock CRSP Podcast Volume 2, Episode 7: The Future of Pastoralism. A panel discussion at the planning meeting considers the future of pastoralism. Are pastoralists the scourge or saviors of the earth? Is the Tragedy of the Commons a thing of the past? How is land-use change impacting pastoral livelihoods? Where are the knowledge gaps in current understanding of these marginalized groups, and what is the most effective way to enhance pastoral livelihoods?

Global Livestock CRSP Podcast Volume 2, Episode 8: Animal Source Foods and Human Nutrition. A panel discussion at the planning meeting examines the role of over and under-consumption of Animal Source Foods in human nutrition, citing the benefits of ASF in improving children's cognitive function and prenatal health, as well as the potential for enhanced leadership and human capacity development from a diet rich in micro-nutrients.

Also available on audio podcast is Danielle Knueppel's interview with Dr. Peter Msoffe, Veterinarian and Senior Lecturer in the Dept. of Veterinary Medicine and Public Health at Sokoine University of Agriculture. An article based on the interview is on page 12 of this issue of Ruminations.

To download these podcasts and more, visit: glcrsp.ucdavis.edu.

Mali Livestock and Pastoralist Initiative (MLPI)

Building on Mission Support and Demonstrated Success

By Franklin Holley with contributions from Jay Angerer and John McPeak

The USAID Mission in Mali has identified an overall goal of improving productivity and income of producers in the northern region of Mali by enabling them to access technologies and build capacity through the development of an extensive livestock information system. In response to this goal and with strong Mission support, the GL-CRSP Mali Livestock and Pastoralist Initiative (MLPI) project was formed. The objective of this effort was to take successful technologies and tools developed and implemented in East Africa and transfer them to Mali with emphasis on the northern regions of the country. MLPI will utilize LINKS technologies and PARIMA risk assessment tools to establish a livestock market information system (LMIS) and build capacity for improving options for marketing and fattening of livestock in the region. The project is a testament to the CRSP's ability to support long-term, effective projects, to develop technologies that are transferable, and facilitate the collaboration of those projects with the capability to improve pastoral livelihoods in many regions of the world.

Mali, like so many other African nations, is challenged by environmental issues including desertification, deforestation, and soil erosion. Drought is common and is accompanied by a lack of sufficient potable water. Subsistence and small-scale farming and herding dominate the market-based economy whereby cotton and livestock are the two primary agricultural exports[1]. Changing climate, land tenure issues, market access, land degradation, and reduction in grazeable lands due to crop development are major challenges facing pastoralists in Mali today. The ability to cope with these challenges will require innovation in information dissemination for decision-making as well as the development of adaptive management strategies for maintaining and improving pastoral livelihoods in this changing environment. Traditional coping mechanisms may not always be adequate in such an uncertain environment, and new risk management solutions may therefore be required. Access to information and the capacity to adapt will thus be critical for coping with unpredictability.

Enabling access to technologies and capacity building through development of an extensive livestock information system - actions that the USAID-Mali has identified as a major goal – have

The MLPI team traveled to l'Institut Polytechnique Rural de Katibougou (IPR/IFRA) in Mali to discuss partnerships for livestock fattening studies. Pictured here are (L to R) Yacouba Santara (Livestock Oversight, USAID-Mali), Boubacar Dembele (Ruminant Nutritionist, IPR) and Dr. John McPeak (MLPI Investigator, Syracuse University). Photo by Jay Angerer.

successfully been addressed through other GL-CRSP projects in Africa, as well as in other parts of the world. Thus, with Mission support, the Mali Livestock and Pastoralist Initiative (MLPI) project was initiated in early 2008 to apply the past successes of multiple projects including LEWS, LINKS, GOBI, PARIMA and LiTEK to establish a livestock marketing information system (LMIS) and build capacity for improving livestock marketing options in the region.

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Footnote 1: Library of Congress – Federal Research Division. January 2005. "Country Profile: Mali."

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Building on Mission Support and Demonstrated Success

In January 2008, Jay Angerer of Texas A&M University (now MLPI's lead Principal Investigator) and John McPeak (project collaborator and principal team member) of Syracuse University traveled to Mali to meet with USAID-Mali personnel to discuss program initiation and workplan development for MLPI. Their meetings with various government ministries, research organizations, NGOs, and universities resulted in the identification of appropriate project partners and project scope. Upon returning to the U.S., the formal MLPI workplan was composed and subsequently approved by GL-CRSP, setting MLPI in motion.

Prior to their current involvement, both Angerer and McPeak had extensive experience with the GL-CRSP projects that form the basis of the Mali Livestock and Pastoralist Initiative. Angerer served initially as a collaborating scientist in the development of Livestock Early Warning System (LEWS) technologies for East Africa. In 2004, he became the project leader for GOBI, a project initiated by the Mission to Mongolia, where GL-CRSP LEWS technologies developed in East Africa were transferred to Mongolia. Both LEWS projects have developed into functioning systems that deliver near real-time information and analysis on livestock forage conditions to key regional, national and local institutions and stakeholders. In 2003, Livestock Information Network and Knowledge System (LINKS) was developed to integrate LEWS technologies inside a broader livestock information and analysis system designed to improve livestock markets and trade, thereby enhancing the welfare of pastoralists in eastern Africa. This system provides near real-time livestock forage, price, and volume information and has been integrated into the National Livestock Marketing and Information System in Kenya. MLPI will introduce the LINKS technology package to West African pastoralists in northern Mali.

As a team member and a co-principal investigator, John McPeak has contributed to the Improving Pastoral Risk Management on East African Rangelands (PARIMA) project. PARIMA was established in 1997 to conduct research, training, and outreach in an effort to improve welfare of pastoral and agro-pastoral peoples with a focus on northern Kenya and southern Ethiopia. The project prioritizes the exploration of opportunities to better diversify incomes and assets and ways to improve access to natural resources, information, and various public services. McPeak serves currently as the Principal Investigator for LiTEK (Livestock Trade in Ethiopia and Kenya), another GL-CRSP project whose focus is synthesizing research on risk and pastoral livelihoods. The LiTEK project provided for the publication of the book, *Pastoral Livestock Marketing in Eastern Africa: Research and Policy Challenges* (2006) edited by John McPeak and Peter Little. LiTEK is presently focused on the publication of many years of PARIMA research as a manuscript entitled *Changing Livelihoods, Risky Environments: Social and Economic Change among Pastoralists in East Africa*, of which McPeak is also a contributing editor. McPeak has also worked on livestock issues in Mali with prior projects and was able to draw on these experiences in discussing with partners possible ways to support livestock producers in northern Mali.

The challenges facing pastoralists in Mali will require risk management solutions. Through the PARIMA and LiTEK projects, the GL-CRSP has considerable experience in examining risk management in pastoral regions of East Africa and improving risk management options. These projects have developed a more thorough understanding of the sources and impact of risk

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in arid and semi-arid areas in Kenya and Ethiopia. They have also allowed the team to work with residents of these areas to develop measures that reduce exposure to and impact of risk. Extending these insights to Mali will both deepen the understanding of the nature of pastoral production systems overall and generate important information that can be used for developing risk management solutions in Mali.

Angerer and McPeak's collaboration marks the integration of projects with similar livelihood interests and the expansion and enhancement of their previous project experiences in new and deserving territory. As evidenced by the MLPI project activities, McPeak and Angerer, in collaboration with project partners and team members, are well prepared for the initiative. Project activities include the following:

1. The establishment of a livestock market information system (LMIS) using state-of-the-art communication and information technologies;
2. An examination of supplementary feeding strategies for value-added marketing of livestock;
3. An examination of methods for improved burgu (*Echinochloa stagnina* - a plant used for animal feed grown in the inland delta of Mali) use and management for livestock;
4. An examination of livestock fattening operations in market towns;
5. Building capacity for partners, producer groups, and other interested stakeholders for the activities described above; and,
6. The development and implementation of a survey in the Niger delta on current perceptions of risk by pastoralists.

Jean Harman, Office Chief of the Accelerated Economic Growth (AEG) Group at USAID-Mali in Bamako said the following about CRSP programming in general in a March 2008 correspondence: "The programming with the CRSPs continues to be great. Collaborative (with us [USAID Mission in Mail] and the government), targeted, and integrated into our programming – it continues to be good week after week. The work is really well defined and some of the best expertise I've worked with. We (my team and I) are really pleased."

MLPI certainly fits Ms. Harman's description as it is a project based on needs identified by the Mission, is targeted toward a deserving population whose livelihoods are marginalized in the global economy, and provides integrated support from U.S. and host country team members as well as from personnel previously involved in successful GL-CRSP projects. The success and adaptability of projects like MLPI and its predecessors, whereby projects are spawned from and are influenced by former projects and project partners, depend heavily on long-term support from the Management Entity, Mission buy-in and cooperation, and collaboration of host country institutions. It is precisely this type of programming that the Global Livestock-CRSP prioritizes and is capable of supporting and implementing. The MLPI project is indeed a fusion of several prior and on-going GL-CRSP projects and represents evolution and adaptation over time. It is by virtue of the GL-CRSP model that lessons learned and successful experiences can be reconfigured and applied to improve small farmer and pastoralist livelihoods in new places and in innovative ways.

For more information, please contact Jay Angerer, jangerer@cnrit.tamu.edu or John McPeak, jomcpeak@maxwell.syr.edu.

See related article "Cellphones as Appropriate Technology" on page 10 of this issue of Ruminations.

Cellphones as Appropriate Technology for Pastoralists

By Franklin Holley, University of California, Davis

Global Livestock CRSP LEWS/LINKS technologies that have seen so much success in East Africa and Mongolia and now in Mali are based on an SMS (Short Message Service) system that functions via cell phones distributed to marginalized pastoralists. In 2002, a GL-CRSP researcher, the late Dr. Jerry Stuth, had a vision of using SMS to improve livestock marketing systems. Dr. Stuth and his team developed a coding system that could be used to send reports on market prices according to specific markets, animal kinds, breeds and classes to pastoralists via SMS so that they are better informed of market conditions and can make decisions based on real time data thereby enhancing their capacity and market access. When integrated into National Livestock Marketing and Information Systems, as has been done in Kenya for example, the potential impact of SMS technology on pastoral livelihoods and the livestock sector in general is vast.

The GL-CRSP and its partners are not alone in identifying the capability for cellular technologies to improve the livelihoods around the world. Other enterprising aid-based organizations and commercial companies are exploring the ways in which cellphones and associated technologies, like that of SMS or text messaging, can contribute to positive change for disadvantaged groups. As the number of cellphone owners increases rapidly, users, marketers, and donor groups are developing innovative ways in which to use or adapt cellular technologies to improve the function and/or marketability of a device that fewer and fewer people are choosing to live without.

The cellphone has transformed the way Dikayo does business. She now has a direct link to livestock exporters and market prices in Addis Ababa. Photo by Seyoum Tezera.

On April 13, 2008, a *New York Times Magazine* article[1] entitled "Can the Cellphone Help End Global Poverty?" was featured on the front page of the *New York Times.* In it, author Sara Corbett recounts her experiences with Jan Chipchase, a "human-behavior researcher" or "user anthropologist" hired by the Nokia cellphone company to find information about potential customers around the world that may be beneficial in designing and marketing Nokia phones.

The article reports that 80 percent of the world's population now lives within range of a cellular network, double the level in 2000, contributing to the increase in global cellphone use. As cellphones spread rapidly around the world, Chipchase and his team can be found anywhere from Accra, the capital of Ghana, to Uzbekistan and China learning about the ways in which cellphones are used and what prospective customers desire in mobile technology.

The bulk of the 3.3 billion people who do not yet use cellphones can be found in Africa and Asia. Nokia and other cellular companies are looking hard in and around these continents in order to find clues that help make their products more applicable and more marketable to lifestyles there. Chipchase and those

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like him often go right to the source to seek out what potential customers need or desire in product capability. A Liberian refugee wanted a phone that could track landmines so he could return home safely. In a Mumbai slum, people drew phones that would forecast weather since they had no access to TV or radio. Ideas are in the works for designing phones with pictorial displays to accommodate illiterate groups.

Mikai was destitute five years ago before she began to lead PARIMA groups. In the past year, she has obtained a cell phone and now makes livestock trading deals directly with exporters in Addis. Photo by Seyoum Tezera.

Rather than wait for examples like these to come to pass, International Development Enterprises (I.D.E.) is putting to good use technologies that are currently available in Nepal. I.D.E. helped to establish farm cooperatives where farmers could bring their produce to a local person with a cellphone and use the phone to determine market prices in order to make the most informed and profitable sale. The farmer then pays a commission for borrowing the phone. Some organizations in the microfinance movement of the international aid sector are also including cellphones and cellular toolkits in their microcredit and lending services.

Another cellular technology, SMS (Short message service), also known as text messaging, is gaining speed for its cost effectiveness and ability to connect over long distances and communicate with otherwise hard to reach populations. Tuberculosis patients in South Africa, for example, can receive reminders to take their medicine via SMS from public health workers. Some Kenyans are taking advantage of a free service from health experts whereby they can anonymously ask questions related to AIDS, cancer, and STDs by text message that they normally would not feel comfortable discussing.

It is clear that the use of cellphones around the world is spreading rapidly. Certain groups, however, have discovered how cellphones and cellular technologies can be better designed or better used to innovatively improve livelihoods. From public health to livestock markets, it remains to be seen what other non-conventional uses cellphones will have and in what ways they could contribute to poverty reduction. For now, GL-CRSP projects like LEWS/LINKS, GOBI Forage and MLPI and the initiatives mentioned here are well-poised to take advantage of new, beneficial opportunities.

Footnote 1: A copy of the NY Times article can be found at http://www.nytimes.com/2008/04/13/magazine/13anthropoloogy-t.html.

To experience the capability of LINKS/LEWS technologies and view site maps of project locations and data collection, please visit the Center for Natural Resource Information Technology's website.

http://cnrit.tamu.edu

There you can explore the Global Livestock Early Warning System and the Livestock Information Network Knowledge System and check real-time forage status of GL-CRSP project sites in Mongolia and several East African countries including Kenya and Ethiopia.

PROFILE

Avian Flu School's Dr. Peter Msoffe

By Danielle Knueppel, Graduate Student, University of California, Davis

Dr. Peter Msoffe grew up in Chanjale, a village in the Mwanga District of Kilimanjaro Region, the last born in a family of eleven. He spent his first nine years of life with his parents, then, under the care of two brothers, completed his primary and secondary school education. He attended a secondary school with a focus in agriculture and, for that reason, gained an interest in medicine, agriculture and animals. He was inspired to pursue medicine when his brother went to medical school. Because of his concentration in chemistry, biology and agriculture, Msoffe pursued veterinary medicine as an alternative to human medicine. Dr. Msoffe said, "I was lucky to be able to move from secondary school to the University because I had support from my family and did well on my exams. At that time, we were only paying a small school fee, which my father and brothers paid."

Peter Msoffe

Now at the Sokoine University of Agriculture in Morogoro, Tanzania, Dr. Msoffe is a Veterinarian and Senior Lecturer in the Dept. of Veterinary Medicine and Public Health and a co-PI on the GL-CRSP Avian Flu School (AFS) Project. At the university, he divides his time between research, extension, and instruction; he teaches classes such as Poultry Diseases, Introduction to Animal Health, Animal Science, Prevention of Animal Diseases, and Animal Behavior. When he's not busy with work, Dr. Msoffe enjoys singing in his church's choir and spending time with his family.

Dr. Msoffe's work with chickens began in earnest in Denmark. "I did well and loved [veterinary medicine] all the way," Msoffe recalled. "When I finished my veterinary course, there was an opportunity to go to Denmark to do a Masters in Veterinary Science in poultry under a DANIDA-sponsored project called, 'Improvement of Health and Productivity of Rural Chicken in Africa.' That is when I seriously 'got to know' village chickens. I did my thesis on ecotypes of different local chickens from different regions and disease resistance of the scavenging local chickens in Tanzania. The work was satisfactory, and I was offered a position at Sokoine University three years later, where I continued with the same work on local chickens, but using more advanced techniques, such as molecular biology. I spent 10 months attending the Royal Veterinary and Agricultural University in Denmark for my master's degree and was there one year for my PhD."

Currently, Dr. Msoffe's research focuses on local, village chicken health, production and marketing. He believes that providing assistance to villagers in chicken production and marketing, through research on village chickens, is an effective tool in poverty alleviation because so many villagers keep chickens. Raising chickens is an activity that even the poorest households can take part in. "Local village chickens have adapted to harsh conditions. They often run free, scavenging throughout the day and are hardier than chickens brought in from other countries. They're rarely given food, rarely given medication, and housing is not always provided, but still they survive. Village chickens require only a small input, but provide people with a needed source of income and food."

Dr. Msoffe's involvement with the GL-CRSP began in August of 2006 when he was invited to participate in an AFS workshop. This was Dr. Msoffe's first exposure to Avian Flu training. Dr. Msoffe remembers being

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very impressed with the teaching material and the interactive methods of the workshop. "The AFS training material is very thorough and has been designed to be understood easily."

Following his initial AFS training, Dr. Msoffe was asked to join the team as an instructor. Dr. Msoffe's first assignment as a trainer took place in a refugee camp in Kigoma, Tanzania, where he trained refugee camp staff. Since then, he has been an instructor in numerous trainings in Tanzania, Uganda, Kenya and Ghana. "So far, I've been involved in training 44 district vets and animal health officers, over 200 policy makers at district and ward levels, and over 80 farmers. The training for farmers is continuing, and the aim is to train 160 more."

From his participation and leadership role in the AFS Project, Dr. Msoffe has acquired new methods of teaching village leaders and policy makers. "I've learned ways of marketing the material to the audience." For example, at an AFS training in Ghana, many of the workshop participants were illiterate. In response, Dr. Msoffe and the other instructors adapted their teaching materials to contain more pictures and less writing.

During a discussion at the end of his first AFS workshop, Msoffe spoke on the importance of controlling for Newcastle disease when establishing measures to prevent Avian Flu. Newcastle disease is highly prevalent in Africa. According to Msoffe, "Every year farmers face the problem of chicken deaths from Newcastle disease, sometimes up to 100% of their chickens die each year. Surprisingly, farmers will always restock." Msoffe also noted that, "If you're trying to control Avian Flu in the same scenario where there is Newcastle disease, it will be difficult because both diseases have similar clinical signs and it is hard to know the cause of death in a village setting." It is important that chicken deaths are controlled before being able to establish bio-security measures for Avian Flu.

Avian Flu School (AFS) Co-PI, Dr. Peter Msoffe (left), and AFS team member Abuyu Msago looking over data collected on chicken health, production and marketing in Malinzanga village in the Iringa region of Tanzania. Photo by Danielle Knueppel.

Under Msoffe's guidance, the GL-CRSP Newcastle Disease Avian Flu Control Project (NDAFCP) was established as a village-level chicken disease control project, which incorporated vaccination against Newcastle disease with farmer education on chicken production and marketing. "Bio-security measures call for isolation of diseases and diseased chickens, traffic control of poultry, and sanitation, all of which are almost impossible in the village setting," said Msoffe.

The next steps Dr. Msoffe foresees taking with the AFS include: (1) creating an Africa-based curriculum for poultry production; (2) testing a field guide for identification of African poultry diseases; and (3) establishing a poultry center at Sokoine University.

When asked about the role of poultry in poverty alleviation, Dr. Msoffe is optimistic and strongly encourages "more collaborative research in village poultry, the involvement of university students in village chicken research, and financial support from funders to support research and development in village chickens."

For more information, Dr. Msoffe can be contacted at msoffepl@suanet.ac.tz.

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cooperatives. Once priorities have been identified, PARIMA will collaborate with technical partners from the Oromia State Government to create pilot intervention concepts to better serve the local population. Important components include: (1) assessing capabilities of public health agents; (2) training public health agents in information-collecting approaches; (3) information collections and analysis for pastoral cooperatives; and (4) creation and implementation of pilot intervention concepts.

Women in the ENAM supported groups have had a 100% repayment record. Their credit history allowed them to qualify for larger loans from the rural banks. ENAM's collaboration with Heifer International has provided poultry and egg production as an income option. Photo by Susan Johnson.

The Enhancing child Nutrition through Animal source food Management (ENAM) project has obtained nearly $180,000 in WID funding to improve women's incomes and access to Animal Source Foods (ASF) through microfinance and endorsement of ASF-related Income Generation Activities in Ghana. The funding has allowed for the ENAM project to partner with Freedom from Hunger, Ghana (FFHG) to institutionalize a micro-credit component and with Heifer International, Ghana to increase women's income generating activity options to include poultry and egg production.

In collaboration with Freedom from Hunger (FFH), women involved in ENAM Project collectives have received loan contributions of 29,000,000 cedis (app. USD 3,000), increasing group membership in one intervention community from 16 to 21 women. Women in ENAM supported groups receive larger loans on average as they have proven to be "credit worthy" due to a lack of loan defaults over the past three years. To date, loans in the amount of 295,000,000 cedis (USD 29,500) have been dispersed to 325 women in 13 groups, for an average of $90/woman. The collaboration with FFH has the capacity to reach approx. 4,800 women through training and micro-credit programs. Collaboration with Heifer International targeting income generating activities and women through poultry production in Techiman and Winneba in Ghana was initiated in Fall 2007. Participants have completed construction of coops, and approximately 30 chickens per woman were distributed. Market linkages were established with a local egg purchaser; and programs for guinea fowl production and cockerels are underway.

Additionally, the GL-CRSP Management Entity initiated program collaboration between the ENAM and Avian Flu School Projects to initiate Newcastle disease vaccination programs and improve poultry production in the intervention villages of Techiman and Winneba in January 2008. The Avian Flu School's Newcastle vaccination program in Tanzania has significantly improved poultry production, positively improving rural incomes and livelihoods.

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Over $100,000 in WID funds have been granted to the **SUMAWA (Sustainable Management of Watersheds)** project to develop and implement a project entitled *Enhanced Watershed Management and Sustainability through Gender Analyses and Interventions in and around the River Njoro Watershed, Kenya*. Efforts are focused towards building capacity and initiating programs in three sectors: (1) participatory mapping and decision making for improved community resource utilization; (2) establishment of programs for community development that will simultaneously enhance overall watershed health; and (3) gender-based point and spatial analyses tied to community engagement and participatory mapping efforts.

Women from the Njoro community participating in the 3-D community mapping exercise. Men and women participated separately to make sure that all voices were heard. Photo by Carrie Chitty.

Two female M.S. students are involved in research efforts in Kenya: Carrie Chitty is American and Eunice Ciku Ngari is from Kenya. Chitty's research was conducted from May to August 2007 with help from women and men from four communities within the watershed. The project resulted in a three dimensional gender based map covering an area of approximately 270 square kilometers with a population of over 300,000 people. The research also revealed past and future development projects and needs, proving to be a beneficial way of sharing local knowledge.

As a result of the needs identified by Chitty's research, the communities prioritized the establishment of tree nurseries to combat the diminishing vegetation cover that has contributed to extensive water run-off and a subsequent alarming drop in the water table. By the end of 2007, SUMAWA WID had provided $2,000 to each of four communities belonging to the River Njoro Water Resource Users Association to pursue nurseries as a type of watershed rehabilitation. Sites were identified and many of the necessary materials were purchased, but the political turmoil in Kenya delayed further work for a short time. While the men involved will give support and assistance to these interventions, the women will actively steer the process as tree nursery managers. Two other interventions are in the works for SUMAWA WID including a biodiversity project involving guinea fowl that will be led

Women who were randomly selected from the Nessuit community participating in a gender perception community 3-D mapping exercise. Spatial perceptions of water resource extraction, firewood collection points, medicinal plant locations and other local resource knowledge was shared by community members. Photo by Carrie Chitty.

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Rangelands, Carbon Credits & Poverty Alleviation

By D.J. Wolking and Dr. M.B. McEachern, University of California, Davis

Resulting from research conducted by the completed GL-CRSP projects Livestock Development and Rangeland Conservation Tools for Central Asia (LDRCT) and Co-Benefits of Grassland Regeneration of Abandoned Wheat Areas for Carbon Sequestration, the GL-CRSP "3G" project is producing a scientific volume for the Journal of Rangeland Ecology and Management that helps managers and development agents to incorporate rangeland and pasture conservation and management projects as candidates for generation of carbon credits. The volume is scheduled for publishing this fall.

Rangelands, covering approximately one-fifth of the earth's surface, are ill-suited for crop production yet they possess extraordinary capacity for livestock production, providing the main source of forage for livestock and thus a subsistence base for some of the world's poorest communities. In addition to their productive capacity, rangelands also have the potential to be net sources, or sinks, of greenhouse gases, and if incorporated into a carbon exchange market, can significantly enhance livelihoods and promote sound ecological management practices.

The relatively recent appearance of voluntary carbon credit markets are effectively sidestepping stiff Kyoto protocol regulations in favor of more flexible and far reaching methods. The California Registry for example, provides a voluntary yet rigorous framework for emissions trading. The Registry is also establishing a set of accounting principles for carbon through third party certification, enabling the capability to efficiently measure and verify emissions and to allow for their free trade and marketing. The concept is similar in essence to the Financial Accounting Standards Board (FASB) in that it provides standards against which company finances may be appropriately analyzed and traded.

The movement towards more rigorous voluntary carbon credit markets is heavily dependent upon greater involvement with the scientific community to ensure that market trading is based on sound and reliable measurement of global carbon fluxes. While the scientific community was a critical partner in establishing the California Registry protocols, its involvement focused primarily on forest carbon fluxes and forestry management. To date, there has been little emphasis on the role of rangelands in the generation of credits. Incorporating rangelands into global carbon markets is critical to the reduction of Greenhouse Gas (GHG) emissions as well as poverty reduction in arid and semiarid lands.

The "home where buffalo roam" has the potential to be net sources, or sinks, of greenhouse gases. There are more than 760 million acres of rangelands in the US. Photo by Susan Johnson.

While most of what is known about the role of rangelands in carbon fluxes has been learned in the past five years, the last volume on the

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role of rangelands as potential carbon sinks was published more than five years ago. The Global Livestock CRSP 3G Project (Grazinglands and Greenhouse Gas Emissions) is in the process of compiling a scientific volume that describes rangeland carbon fluxes and assists managers and development agents to incorporate rangeland and pasture conservation and management projects as candidates for the generation of credits. It is the intention that these credits could then be used to offset the costs of development and poverty alleviation projects, with dramatic consequences for pastoral livelihoods.

Building on previous GL-CRSP research conducted by the Livestock Development and Rangeland Conservation Tools for Central Asia (LDRCT) and Co-Benefits of Grassland Regeneration of Abandoned Wheat Areas for Carbon Sequestration Projects, which provided the first models for carbon fluxes in Central Asian rangelands, this new compendium will move beyond a regional focus to the first global account of carbon fluxes assembled in one volume. The compendium will be published as a special issue by the Journal of Rangeland Ecology and Management in the late Fall of 2008 and will be subdivided into three main themes: 1) Greenhouse Gases, Rangelands, and Poverty Alleviation, 2) Estimation and Quantification of Carbon Fluxes in Rangelands; and 3) Patterns of Carbon Flux in Rangelands of the World.

Drawing on an interdisciplinary group of leading researchers in the scientific community, the volume will tentatively feature the following chapters within each theme:

Greenhouse Gases, Rangeland, and Poverty Alleviation:

1. Requirements for range and pasturelands to generate tradable carbon offsets in the Chicago Climate Exchange.
2. Societal benefits and policy implications.
3. Supplying carbon sequestration from West African rangelands: opportunities and barriers.
4. The Mexican ProArbol program: support for the development of forestry carbon sequestration projects and the relationship with poverty alleviation policies.

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What is a carbon credit?

The concept of tradable carbon credits was developed by the 2005 Kyoto Protocol as a means to monitor and reduce global GHG emissions. One carbon credit is the equivalent of one metric tonne of CO^2 emissions. Thus, one carbon credit represents the legal right to emit one tonne of CO^2 or GHG equivalent.

How are credits awarded?

Participating countries place a cap on the annual amount of CO^2 emissions allowable. Businesses and industries within each country are then allotted a finite number of credits, or allowances. Groups that can reduce their emissions below their quotas can sell excess credits to groups whose emissions exceed their allowable credits. In addition, groups that can document further reductions in CO^2, e.g. through good land-use practices that sequester soil C, can apply for additional carbon credits for trade in national and international markets such as the Chicago Climate Exchange (CCX). Individuals interested in reducing their personal carbon footprints can also purchase carbon credits and participate in market trading.

What are the benefits of participating in the carbon credit market?

Participation in the carbon credit market contributes to three of the eight Millennium Development Goals of 2015 adopted by the United Nations:

1) Eradicate extreme poverty and hunger

Carbon credits can contribute to poverty alleviation by generating additional income in some of the poorest areas of the world, often dominated by agriculture and pastoralism.

2) Ensure environmental sustainability

By assigning a price to GHG emissions, the carbon credit market promotes sustainable land-use practices that store, or sequester, atmospheric carbon in plants and soils.

3) Create a global partnership for development

The carbon credit market is an international concept that unites participating countries and groups under a single goal-- reduction of global GHG emissions.

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3G: Rangelands, Carbon Credits & Poverty Alleviation

There has been little emphasis on the role of rangelands in the generation of carbon credits. Rangelands, if incorporated into a carbon exchange market, have the potential to significantly enhance livelihoods in poor nations. Photo by Susan Johnson.

Estimation and Quantification of Carbon Flux in Rangelands:

5. Improving estimates of rangeland carbon sequestration: a systematic approach to estimate carbon fluxes from rangelands at landscape and regional scales.
6. Quantities and kinds of greenhouse gases exchanged in range and pasturelands as a function of management.
7. Estimation of regional net C flux and uncertainty based on mobile flux stations and downscaling of weather data: a scalable and objective methodology.
8. Cost-effective methods to determine spatio-temporal patterns of soil carbon stocks in range and pasturelands of California.

Patterns of Carbon Flux in Rangelands of the World

9. Ecosystem-scale estimates of productivity, respiration, and light-response parameters of world grasslands derived from flux-tower measurements.
10. Timing of carbon uptake on eleven rangeland sites in the United States.
11. Diurnal and seasonal patterns in ecosystem carbon dioxide fluxes in a temperate grassland.
12. Nutrient cycling, limitation and global change: a synthesis of Jasper Ridge.
13. Spatio-temporal gradients of carbon stocks and fluxes in rangelands of the Rio de la Plata basin.
14. Managing carbon sources and sinks in Australia's rangelands and tropical savannas.
15. Conceptual models of grazing effects on carbon and nitrogen dynamics in rangelands.
16. Landscape distribution of soil organic carbon in Eurasian grasslands and its relation to snow cover and erosion.
17. Land-use influences carbon fluxes in northern Kazakhstan.
18. On the ability of the ORCHIDEE global vegetation model to simulate carbon and water fluxes of a southern Siberian steppe.

By providing a detailed analysis and synthesis of global carbon fluxes and the potential for rangeland inclusion into global carbon markets within a single peer-reviewed volume, the GL-CRSP 3G Project takes a crucial step towards the recognition of the importance of rangelands to the global carbon budget. Furthermore, the incorporation of livestock producers and rangeland managers into the global carbon agenda will provide both the potential for improved rangeland management, as well as income generating possibilities for some of the world's poorest.

For more information on the Global Livestock CRSP 3G Project, contact Dr. Emilo Laca, ealaca@ucdavis.edu or visit our website at: http://glcrsp.ucdavis.edu/Projects/3G#

For more information on the California Registry voluntary carbon trading program, please visit: http://www.climateregistry.org.

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by a female community member. The construction of a bridge was also proposed by community women in order to prevent women and children from falling into the river while on their way to school.

Eunice Ngari has entitled her thesis *"Gender roles in medicinal plant knowledge and mapping for the Ogiek community of the Upper River Njoro watershed."* Having been exposed to less Western influence than other peoples in the watershed, the Ogiek community continues to rely heavily on herbal medicine. Ngari's research is thus an effort at cultural conservation via GIS mapping techniques. With the assistance of local medicine men and women, she has collected and catalogued those specimens with medicinal properties. Ngari will be visiting the University of Wyoming for a period of three months to gain expertise in GIS and complete her analysis.

Also building upon research and development in the SUMAWA project, **POU (Point of Use) WID** funds totaling more than $79,000 support a project called *Development and Marketing of Household Filters for Drinking Water Improvement in the Njoro Watershed Area in Kenya*. As reported in the Fall 2007 edition of Ruminations, POU-WID targets rural mothers and their children in agricultural households suffering from water-borne diseases and lack of access to safe water, by prioritizing the manufacturing, marketing and monitoring of usage of low-cost slow-sand water filtration devices at the point of use in households. A commercial private sector approach to filter production and sales by local artisan-entrepreneurs, women's groups, and under-employed youth is being used to manufacture, set-up and service filters at three different sites across the watershed. The project has been implemented through a partnership between the SUMAWA Project, the Nakuru District Ministry of Health Public Health Technicians Team (PHT team), and the River Njoro Water Resource Users Associations (WRUA).

The BioSand filters are easy to use and cost effective for households in the watershed. Community-private partnerships have linked entrepreneurs to credit and market access in the production of the filters. Photo by Sangam Tiwari.

The project has been quite successful but post-election violence disrupted the final phase of the study (see related story on page one). The project has therefore expanded its scope to test project technologies in the Ruaha region of Tanzania. The project will assess the impact of improved water quality on disease incidence in both agro-pastoral households and their livestock. POU-Ruaha will also address the development of a micro-enterprise model to drive production and supply of the filters, and to ensure the sustainability of the POU BioSand filter system. This summer Jim Ellis Award recipient, David Wolking, will be wrapping up the work in Kenya before beginning the field trial to Tanzania.

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

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Post-election Violence Disrupts CRSP Projects in Kenya

troughs for livestock in the watershed to prevent soil erosion and diminished water quality. The plastic piping materials utilized in construction of the troughs were removed from the site for use as weaponry for making quivers by local boys, leaving one of the troughs inoperable. In addition, BioSand filters introduced by the SUMAWA POU-WID project through a water quality intervention field trial were abandoned as residents fled the continuing violence. Furthermore, current unrest in the Mau forest caused by the violence and resulting human displacement continues to challenge SUMAWA's options to effectively engage watershed residents in intervention programming, as squatters in the forest must evacuate the area by October 30th or face forced relocation.

The post-election violence was particularly challenging for people suffering from HIV/AIDS. As Kenyans fled their homes and the turmoil, HIV/AIDS patients were unable to reach health-care facilities for treatment. AMPATH, a partner of the GL-CRSP HIV Nutrition Project (HNP), has reported that a majority of their 67,000 patients had their treatments interrupted during the crisis and that the whereabouts of 4,000 HIV-positive patients is still unknown.

Turbo Division in Uasin Gishu District, the study area of GL-CRSP HIV Nutrition Project, was one of the hardest hit areas, partly because of its geographical and human settlement design. The post-election violence occurred when the project had already recruited clients and was implementing Phase II of the study. It came with a wave of ethnic hatred and violence that spread at uncontrollable speed. All roads into and out of Eldoret town were blocked. Other major and minor centers within the district, including the GL-CRSP study area, were subsequently inaccessible as the wave of violence spread throughout parts of the country.

The result was extremely restricted movements (no home visits), destruction of infrastructure and burning of homes and churches. The intra-ethnically disadvantaged people and others affected, including project study subjects, were forced to flee their homes and villages. Scheduled home visits and data collection became impossible. The staff of the GL-CRSP HNP were not spared either, logistically making it difficult to continue with normal project field operations. Tens of thousands of Kenyans are still displaced and living in "Internally Displaced Persons" camps in the area. HNP clients are amongst those in the camps.

All the Kenyan programs have suffered tremendous capacity losses and setbacks following the eruption of the violence and have been assessing the environment for continuation of program activities. Project researchers are just now able to reorganize and refocus project activities in order to address initial project objectives.

The GL-CRSP is currently awaiting news from USAID on the prospects for a one-year funded extension to assist with the reorganization and completion of these projects.

For more information, please contact the Management Entity , glcrsp@ucdavis.edu

Ruminations

Director: Montague W. Demment
Newsletter Editor: Susan L. Johnson
Contributing Writers: David Wolking, Danielle Knueppel, Franklin Holley

Published quarterly by the Management Entity, Global Livestock Collaborative Research Support Program, 258 Hunt Hall, University of California -- Davis, Davis, California 95616, USA.
Telephone: (530) 752-1721,
Fax: (530) 752-7523.
E-Mail: glcrsp@ucdavis.edu
WWW: http://glcrsp.ucdavis.edu

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