



# RUMINATIONS

NEWSLETTER OF THE GLOBAL LIVESTOCK COLLABORATIVE RESEARCH SUPPORT PROGRAM

## Research without Borders

### ENAM's Anna Lartey Named IDRC Research Chair in Nutrition

Anna Lartey, Co-Principal Investigator of the GL-CRSP Enhancing Child Nutrition through Animal Source Food Management (ENAM) project, has been named the International Development Research Centres (IDRC) Research Chair in Nutrition for Health and Socio-economic Development in Sub-Saharan Africa, part of the IDRC's International Research Chairs Initiative. The Initiative supports research partnerships between outstanding university scholars in Canada and their peers in the developing world.

Dr. Lartey's position is one of eight international research

chair partnerships that will be supported by the IDRC over the next five years. Dr. Lartey will partner with ENAM's Lead Principal Investigator, Grace Marquis, a Canada Research Chair in Social and Environmental Aspects of Nutrition. Together their research will focus on two priorities in Ghana: improving child nutrition, especially in vulnerable and HIV-affected households, and reversing rates

of childhood obesity in urban areas. IDRC support provides \$1 million a year for five years.

"Our government understands that investing in science and technology is critical for succeeding in today's global economy," said the Honourable Gary Goodyear, Canada's Minister of State (Science and Technology). "This is

why we announced a \$5.1 billion dollar investment in S&T in Budget 2009, Canada's Economic Action Plan. Investments in such international partnerships are helping enhance our universities' research capacity and fostering world-class discoveries that will help position Canada as a leader in addressing issues of global concern. They are also contributing to training and mentoring the next generation of researchers and highly skilled workers around the world."

In addition to identifying new avenues for knowledge, policy,  
*(continued on page 10)*



*Grace Marquis & Anna Lartey*

**HAVE YOU HEARD?**  
**THE GLOBAL LIVESTOCK CRSP FINAL CONFERENCE IS**  
**JUNE 16 - 19, 2009 AT LAKE NAIVASHA, KENYA**  
 Turn to Page 2 for details.

# Capstone Event for Global Livestock CRSP in June 2009

Following years of innovative research and development success, the Global Livestock CRSP is proud to host a capstone conference to celebrate program results and achievements, and to plan the way forward for new research and development interventions in the sector of livestock development.

The GL-CRSP Final Conference will be held from June 16 – 19, 2009 at Lake Naivasha, Kenya. The conference will highlight programmatic achievements, discuss lessons learned and identify the major challenges of conducting international development research. The conference program will also examine the challenges and the process by which the GL-CRSP has functioned.

Through presentations, panel discussion, and posters, the conference will tackle the following themes:

- Agriculture, Human Health and Nutrition
- Research for Development: Role of Basic, Applied and Action Research in the Development Process
- Peacebuilding, Conflict and Development
- Risk and Changing Livelihoods
- Gender Integration and Perspectives

In addition the conference will feature tributes to our outstanding students and principal investigators. For more information on the conference and registration, please visit the GL-CRSP website at [glcrsp.ucdavis.edu](http://glcrsp.ucdavis.edu). 

## Call For Poster Sessions and Conference Travel Awards

For the upcoming conference in June 2009, the GL-CRSP welcomes participants to submit abstracts for poster presentations on research sponsored by the GL-CRSP or relevant to the research topics of the GL-CRSP. Travel awards are available for: 1) authors submitting gender related poster presentations and 2) students submitting poster presentations.

To highlight **gender integration** topics, the Management Entity of the Global Livestock CRSP will offer a select number of travel grants to authors submitting poster sessions on topics related to gender integration and livestock development. All GL-CRSP researchers and Borlaug LEAP Fellows are eligible for these travel grants.

To encourage **student participation** at the conference, the Management Entity of the Global Livestock CRSP will offer a select number of travel grants to students submitting poster sessions. Only students are eligible for these travel grants. Priority will be given to students currently on GL-CRSP projects and Borlaug LEAP Fellows.

To compete for the travel grants, students should send their request for a poster session **by April 24, 2009**. To request a poster session, please complete the information below and submit to Susan Johnson, Global Livestock CRSP, University of California – Davis, 258 Hunt Hall, Davis, CA 95616. Fax (530) 752-7523, Email: [glcrsp@ucdavis.edu](mailto:glcrsp@ucdavis.edu).

*For more information on the travel awards, including detailed guidelines for poster submissions, please visit the GL-CRSP website at [glcrsp.ucdavis.edu](http://glcrsp.ucdavis.edu).*

# HIV Nutrition Project Receives NIH Funds for Future Project Endeavors

*By Judith Ernst, Lead Principal Investigator, HIV Nutrition Project*

In September of this year, the principal investigators of the GL-CRSP HIV Nutrition Project (HNP) were notified by the National Institutes of Health that the project will be supported for four years at \$250,000 per year of direct costs from the Eunice Kennedy Shriver National Institute of Child Health & Human Development.



*HIV-infected drug naïve Kenyan woman and their children receive nutrition intervention biscuits daily with either meat, soy or wheat as the predominant ingredient. Photo by Elizabeth Buluku*

HNP, which is now in Phase III, is a randomized nutrition feeding intervention, which evaluates the effect of protein quality and micronutrients in meat on the health and nutritional well-being of drug naïve women living with HIV in rural Kenya and the health and development of their vulnerable children. Isocaloric nutrition intervention biscuits that contain meat, soy or wheat protein were developed in Phase I and then pilot tested in rural Kenyan women and young children during Phase II. The project is complex and requires a significant amount of resources with an annual budget

that exceeds \$700,000. A field staff of nearly 70 persons is required to deliver the intervention biscuits daily to 225 families in rural western Kenya using directly observed treatment (DOT) and to obtain the repeated outcome

measures throughout the 18 month intervention and for six months post-intervention. Repeated measurements of women and children, collected every three to six months by trained enumerators, include: estimates of lean body mass and muscle strength, immune function, infection/inflammation, skin tests for candida, tuberculosis, and tetanus, overall health, nutrient, energy and protein intakes, micronutrient status, quality of life, usual activity of women, and growth, cognitive development and activity of children.

The study population of women receives medical care at the

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Turbo Rural Health Center, one of the rural clinics that have been established by the Academic Model Providing Access To Healthcare (AMPATH) program in Kenya. The United States Agency for International Development (USAID)-AMPATH partnership operates under the joint direction of Moi Teaching and Referral Hospital and the Moi University and Indiana University Schools of Medicine, and cares for over  
*(continued on page 13)*

## Ellis Awardee Stacy Lynn – From Elementary School Teacher to POLEYC Researcher in TZ

*Since 1998, the GL-CRSP has supported 475 students at the undergraduate and graduate levels with research training, funding and support. Stacy Lynn, one of the first GL-CRSP Jim Ellis fellows and former team member of the GL-CRSP POLEYC project, was supported in degree training by the GL-CRSP in 2004, working on her PhD in Ecology through Colorado State University. In this degree training profile, Ms. Lynn answers questions about her background, her MS research advised by Jim Ellis, her research on conservation and land-use change in Tanzania, and provides an update on the status of her degree and plans for the future.*

Growing up I was always a “nature kid”, identified as one who liked to be outside, and curious about nature. My first career was as an elementary school teacher, and in this role I used science and curiosity as foundations of learning for the children in my class. We had many fun math and writing lessons that were based upon whatever we happened to be doing in science, or just taking advantage of natural learning opportunities. We had turtles, gerbils, fish, and an iguana named Mr. Green whom we meticulously measured every week until he lost his tail while making a mad dash for freedom.

After three years of teaching in East Baltimore, I made a leap and joined the Peace Corps. I lived in Namibia for two years, working as a Teacher Trainer for 21 schools in the Otjiwarongo area, teaching grades 5 and 7 English and Science, establishing an environmental club for kids grades 5-12, and volunteering a good bit of my off-time and weekends with the Cheetah Conservation Fund (CCF). Working with the CCF expanded my view of

ecosystems to integrally include people on the landscape, and educated me in the conflicts that often occur between people and wildlife. In this case the conflict was primarily between Namibian landowners/ farmers and the predators that killed their livestock or game-ranch wildlife. I was involved in raising livestock guarding dogs, capturing and releasing cheetahs, fundraising, developing and conducting education programs, assisting visiting scientists with wildlife and vegetation research projects at CCF’s farm, and other activities. This was a formative learning experience.

Returning to a contained classroom was not an option for me after Peace Corps; it would have been much too restricting after the self-directed life I led for two years in Namibia. So I applied to graduate schools looking to study the very things I had become interested in through my work with the CCF. I applied to four graduate schools while still living in Namibia, but when I visited Colorado State University to meet with Jim Ellis in February

1997, I knew that was where I wanted to be.

Jim was my advisor for my Master’s Degree (1997-2000), for which I studied conservation policy, ecology, and livelihoods of Maasai pastoralists living in the Ngorongoro Conservation Area, Tanzania. Jim’s mentoring and scientific insight was extraordinary. Whenever he had a doubt about a conclusion of mine, he would say, “Convince me.” Sometimes I did, sometimes I didn’t, but he allowed me to work it out, and he allowed us to disagree. After completion of my M.S., I decided to pursue a PhD and Jim agreed to continue advising me. For this project I would work in Simanjiro, Tanzania, as part of the POLEYC project.

Jim passed away in March of 2002, soon after the inception of the POLEYC project, and just two months before my first PhD field season. Jim’s loss was personally and professionally devastating for many people, including me. But looking back, he left a legacy in his approach to science, his willingness to

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cross the boundaries of tradition to do something innovative, his diplomacy when working with multiple stakeholders who each brought their livelihoods and values to the table. He trusted me to do good work with minimal oversight, but lots of thought-provoking conversation or guidance just when I needed it.

Since Jim's passing I have continued with my PhD under the advisement of Dr. Mike Coughenour. I set up a new field site, established some new connections, learned to speak Kiswahili to a level I never knew I could, and carried out three field seasons totaling 1.5 years in the field. Since completing my data collection my husband and I have had two children. My son (4) is fascinated with maps and place and all things geography. My daughter (2) chases after everything with four legs. This morning both of them jumped up and down at the sight of our blooming flower bulbs, our "signs of spring."

While I have stepped away from the elementary school classroom, the experiences afforded to me through my graduate work give me an even more perceptive base from which to guide my own



Stacy Lynn and Naisola (two years old) in Sukuro, Tanzania.  
Photo by field assistants, Isayaole Rumas and Sinjore ole Lupasio.

children's learning, and their questioning of how the world works. Lessons from family are valuable even for my PhD work, to process the voices of people when they talk of concerns for their livelihoods and feeding their families. Having my own children has opened up the conversation with women friends in Tanzania, bringing relationships to a new level of understanding and friendship.

*How did you initially become involved with the POLEYC project and become aware of CRSPs?*

I knew about the GL-CRSP from the time I started my

work at CSU because the researchers who I work with at the Natural Resource Ecology Laboratory at CSU were investigators on POLEYC's predecessor, the IMAS project. While I was not directly funded through IMAS, other students in my cohort at CSU were, and there was a large amount of exchange between the research projects.

*Briefly describe the premise of your PhD research project and how that relates to POLEYC. How long did you work with POLEYC in these endeavors?*

My dissertation project came about as a result of concerns from both the conservation community in Tanzania, which is worried about the impacts of increasing cultivation for migratory wildlife east of Tarangire National Park, and the village communities east of the Park, which are worried about the impacts that conservation-oriented land use restrictions would have for their livelihoods.

Specifically, the first set of questions I asked revolved around land use change (cultivation) and livelihoods: "What contribution is cultivation making to livelihoods? Why do people cultivate every year in such a

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## Stacy Lynn – From Teacher to POLEYC Researcher

marginal environment? Are Maasai actually making a profit, or is cultivation a losing proposition?” The culminating question takes these analyses and asks a more political question, “What implications could a policy restriction of cultivation have for Maasai livelihoods in the study area?”

The second set of questions that I asked revolved around land use change (cultivation) and wildlife: “What is the relationship between cultivation and wildlife locations? Are wildlife attracted or repelled from cultivated fields? Is there a relationship between wildlife densities and density of cultivation?” The culminating question here then asks, “What does this mean for wildlife populations in a changing landscape?”

I asked both sets of questions to be able to present the needs of both the human component and the wildlife component in one objective package, bringing the measured needs of the human side to the attention of conservation policymakers and advocates, and the measured needs of the wildlife side to the attention of villagers and human advocates. We cannot assume that people will or can just stop cultivating and once again live as pure pastoralists. We also cannot assume that

all cultivation is bad for wildlife, or that wildlife will adapt indefinitely to landscape changes. The conflict between the two major points of view is very intense, so until now it has been difficult for communities and policymakers to develop plans or approaches that incorporate, or even recognize, the needs of all. I am hoping that the objective dual analyses of this dissertation will bring people to the table, generate discussion, and inspire collective attention and action.

*While conducting your research with POLEYC in Tanzania, describe a day in the life of Stacy.*

The first of my three PhD field seasons was exploratory. I drove around talking to people, seeing what people’s concerns were, refining my larger research questions, refining the study area, and selecting a site for a research camp that we could use as a home base. For my M.S. work we were very mobile, never in one place for more than a few days, and I knew that for my PhD work I wanted to live in a community and have a place to come home to at night.

During the two subsequent field seasons (10 months of 2003, and 4 months of 2004), there was a definite routine to our lives. My field assistants lived at the research camp in their

own tents, and I had a large army tent. I had a cat (I sadly went through a few of these) and a dog (who eventually made it back to the US with me) to control vermin, improve safety, and keep me company. We typically stayed in the village for three weeks at a time, working every day barring illness or other major problems, then would spend two days in town on a supply and email/phone run.

A day of field work would start with an early rise for tea, and departure to our work for the day either conducting interviews (2003) or collecting wildlife data on transects (2004). On days when we stayed closer to home we would return home for a mid-afternoon lunch of rice and beans, cooked by a friend who I hired because we did not have the time to do this ourselves. Often we were exhausted and slept a bit before working some more. Dinner was almost always leftovers from lunch (I almost never cooked my own food because nobody else would eat it!), roasted meat, or just milk tea *chai*. I spent my evenings making social visits, practicing Kiswahili, entering data or notes for the day, and writing long letters to friends and family to send when I got to town. We often reviewed the work of the day to talk about problems we had, discuss

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## New GL-CRSP Research Briefs Available Soon

The following research briefs are in press and will be available for download at the GL-CRSP website:

### **Pastoral Risk Management Project (PARIMA)**

Research Brief 08-01-PARIMA: *What are Consumers in Moyale, Kenya Willing to Pay for Improved Milk Quality?*

Research Brief 08-02-PARIMA: *Are Cattle Die-Offs Predictable on the Borana Plateau?*

Research Brief 08-03-PARIMA: *Successful Implementation of Collective Action and Human-Capacity Building Among Pastoralists in Southern Ethiopia: Lessons Learned, 2001-2008*

Research Brief 08-04-PARIMA: *Preliminary Perspectives on the Health needs of Pastoral Women on the Borana Plateau Using Participatory Approaches*

### **Integrated Assessment of Pastoral-Wildlife Interactions in East Africa: Implications for People, Policy, Conservation and Development in East Africa (POLEYC)**

Research Brief 09-01-POLEYC: *The Economy of Change: Livelihood Diversification and Land Use Change in Simanjiro, Tanzania*

Research Brief 09-02-POLEYC: *"Staying Together:" People-Wildlife Relationship in the Amboseli Ecosystem, Southern Kenya*

The following research briefs are available for download now at the GL-CRSP website:

### **Livestock Information Network and Knowledge System (LINKS) project**

Research Brief 08-01-LINKS: *Expansion of LEWS Activities in Ethiopia Under the Pastoralist Livelihoods Initiative (PLI)*

Research Brief 08-02-LINKS: *Assessment of Livestock Market Information Systems in the Highland Regions of Ethiopia*

Research Brief 08-03-LINKS: *The National Livestock Marketing Information System Comes of Age in Kenya*

Research Brief 08-04-LINKS: *The Influence of Water Stability on Livestock Migration in Northern Kenya*

For a complete list of available research briefs, please visit the GL-CRSP website at <http://glcrsp.ucdavis.edu>.

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technique and science, usually over a fire and more chai. On days when we ventured further afield, we would visit many friends for chai, sometimes have dinner, and stay for the night in their homes.

Social times were critical times for me during my fieldwork, allowing me to establish relationships that were not important solely for developing "trust" within the community, but also for developing lasting friendships and learning about each other's cultures and lives. These were the times when we could help friends to look for their lost cow, fetch water for the family, or

take someone to the doctor or hospital. Developing friendships across cultures is not always easy, but became a critical aspect of my life in Tanzania.

*What are your plans after completion of your PhD at Colorado State?*

This you can ask me in another six months, as I am focusing on completing my dissertation and not searching for jobs. This summer I will be participating in the 2009 UNU-EHS and Munich Re Foundation Summer Academy in Munich, the topic of which is "Tipping

Points in Human Vulnerability." I am currently working with Robin Reid at CSU's Center for Collaborative Conservation as a Program Director, where I am involved in the CCC Fellows Program, run a seminar series, and am helping to organize a conference at CSU planned for September 2009 entitled, "Bridging the Gap: Collaborative Conservation From the Ground Up." I will continue work with the CCC into the fall of 2009, but after that my professional future is wide open. ☺☺

Download a copy of Lynn's Research Brief at the GL-CRSP website: <http://glcrsp.ucdavis.edu>. Stacy Lynn can be reached at [stacyl@nrel.colostate.edu](mailto:stacyl@nrel.colostate.edu).

## Global Livestock CRSP Supports “Peace Ambassadors” and Conflict Resolution Training in Afghanistan

Three decades of war in Afghanistan have led to a series of population resettlements and displacements, as sometimes entire villages are forced to flee their homes to seek refuge in more stable provinces and bordering countries throughout Central Asia. The Kuchi people of Afghanistan, a traditionally nomadic and pastoral group, have also been severely impacted by the conflict, as traditional grazing areas and migration routes have been shattered and fragmented.



*With sufficient spring rains the green rolling hills of central Faryab Province are highly productive for herds of sheep and goats. Decades of war have exacerbated conflict over natural resources in Afghanistan. Photo by Michael Jacobs.*

After the collapse of the Taliban and establishment of a new government in Kabul, a newfound regional stability supported by US, NATO, and local Afghani security forces has encouraged many to return to their homes. The Kuchi, dependent upon natural resources for their subsistence-based pastoral production system, have largely settled in areas with ample water and pasture, bringing them within near proximity of

other more settled villages and communities. Natural resources are finite, and the competition for ample water and forage inevitably invites conflict. Eventually, these conflicts escalate and mature to violence, threatening an entire region and disrupting rural livelihoods among both innocent and guilty parties. The conflict between the Kuchi and Hazara in Central Zone (Kabul and surrounding areas) Afghanistan provides an excellent case

study of conflict incubation. In the Behsood District of Wardak Province, the daily competition over the natural resource base culminated in fighting and

bloodshed, resulting in the deaths of many Kuchi and Hazara. This clash, now widely known around the Central Zone and other parts of Afghanistan, has blemished the reputation of the Kuchi, and led to severe distrust of the community in the eyes of other groups. This distrust has silenced the communication channels between the Kuchi and their neighbors, and elevated cultural insensitivity and prejudice, which inevitably reinforces the potential for further conflict and bloodshed. This potential is evidenced by several new reports of tension between the Kuchi and their neighbors reported recently in many parts of Afghanistan, including the Faryab, Balkh, Kunduz, Badakhshan, Takhar, Logar, Khost, Paktika, Paktia, Bamyan, and Baghlan provinces.

*Provincial Kuchi Director for Balkh, Said Mohammad, looks over a rangeland vegetation map with members of the PEACE project and explains where Kuchi are facing problems with grazing. Photo by Michael Jacobs.*



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In response to these conflicts, the GL-CRSP Afghan PEACE project is helping the Department of Kuchi to develop a strategy to solve conflicts across Afghanistan. This strategy utilizes a two-tiered training of the trainer focusing on workshops organized: 1) to strengthen the capacity of 90 Kuchi and 90 Host Community Representatives to facilitate conflict resolution dialogue at the local level, and 2) to create an effective enabling environment at the community level within which an effective dialogue can occur between the Kuchi and Host Community leaders. These workshops are to be conducted over five separate zones in Afghanistan, beginning with the Center Zone (Kabul and surrounding areas) due to its ongoing Kuchi-Hazara conflict. The workshops are designed to train a critical mass of Kuchi and Host Community leaders in various aspects of conflict resolution, ranging from defining and understanding conflict and violence, to discussions on prejudice, perceptions, obstacles to communication, arbitration, and judgment. Over the course of the workshops, key participants will be selected for further training culminating in the development of "Peace Ambassadors," assigned to the specific and ongoing tasks of reconciliation and documentation of the peace and conflict resolution process.

The first series of workshops was



Detailed interviews with Kuchi families and clan representatives show that the Kuchi face many difficult challenges. These include access to traditional grazing land, access to water for themselves and their animals, and access to amenities such as education and veterinary services. As they travel throughout the year, the challenges change. The PEACE project produces maps using season-specific survey data. This map shows the wintertime conflicts between villages and the Kuchi.

conducted in 2007. Twenty-six Kuchi Representatives from 23 provinces attended these first workshops, which were implemented by the Sanayee Development Organization (SDO). The workshops, presented in the local languages of Pashto and Dari, covered a variety of conflict-related topics and methods used in solving conflicts, and building peace. During the training, examples of problem solving techniques were given, and resulting discussions included the majority of participants. There was an overall positive reaction to the workshop discussions with most of the representatives saying they were very happy with the messages delivered.

Workshop participants returned to Kabul again to continue the next level of peace and negotiation training for the Center Zone in March and early April of 2009. The second series of workshops was expected to include representatives from all 34 Afghani provinces. PEACE was also planning to monitor the effectiveness of the first workshop through a follow-up questionnaire administered to participants of the initial training session upon their arrival in Kabul. ☺

For more information on the Afghan PEACE project, please visit their website at <http://www.afghanpeace.org>. Or contact Principal Investigator, Michael Jacobs at [mjacobs@cnrit.tamu.edu](mailto:mjacobs@cnrit.tamu.edu).

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## ENAM's Anna Lartey Named IDRC Research Chair in Nutrition

and technology transfer, these partnerships will provide university students with unique training and fieldwork opportunities under the mentorship of the chairholders.

Anna Lartey is an Associate Professor and former Head of Department, Nutrition and Food Science, at the University of Ghana. Her research focuses on child nutrition. She has served as advisor for the World Health Organization (WHO) expert consultations on child nutrition. She also served as Co-Principal Investigator for the WHO Multicenter Growth Reference Study, Ghana site. A former member of the Ghana Food and Drugs Board, she was one of five African experts invited to a round table discussion with Melinda Gates. Lartey is a graduate of the African Nutrition Leadership Program, current Chairperson of the Africa Nutritional Epidemiology Conference, President of the Ghana Nutrition Association, and Africa's representative on the Council

of International Union of Nutritional Sciences.

After earning a BSc at the University of Ottawa, Anna Lartey completed a dietetic internship at Kingston General Hospital, Canada, and received a MSc from the University of Guelph. She holds a PhD in nutrition from the University of California-Davis where she was a Fulbright scholar. In 2004, Lartey won the University of Ghana's "Best Researcher Award."

Grace S. Marquis is Associate Professor and Canada Research Chair in Social and Environmental Aspects of Nutrition at McGill University, Montréal and an Adjunct Associate Professor at Iowa State University. Her research career began 25 years ago at the Nutrition Research Institute in Lima, Peru. She received her doctorate in international

nutrition from Cornell University in 1996 and taught for 10 years in the USA before joining the School of Dietetics and Human Nutrition at McGill.

In 1999, her research group began working in Ghana, West Africa, a collaboration that continues to this day. Her community-based research examines how social, cultural, biological, and environmental factors interact and the mechanisms by which they alter a household's ability to provide optimal nutrition and care for young children. Based on the knowledge acquired, her research group then develops alternative strategies to support child health and growth that are feasible for poor families. 🍌🍌

*Dr. Grace Marquis can be contacted at [grace.marquis@mcgill.ca](mailto:grace.marquis@mcgill.ca), Dr. Anna Lartey at [aalartey@hotmail.com](mailto:aalartey@hotmail.com). For more information on Canada's IDRC, visit their website at: [www.idrc.ca](http://www.idrc.ca).*



*In Ghana, the Queen Mothers have been serving their communities for generations. The HIV/AIDS epidemic has presented a challenge to those traditions. The Queen Mothers Association of the Manya Krobo district have assumed responsibility for the care and education of nearly 600 AIDS orphans. The funding from the IDRC Research Chair will enable Lartey and Marquis to continue working in the Manya Krobo developing and testing ways to improve nutrition and young mothers' caregiving knowledge and skills in HIV-affected communities. Pictured with the Queen Mothers and children are Tag Demment (left), Grace Marquis and Anna Lartey. Photo by Susan Johnson.*

# ENAM Project to Establish a “Center of Excellence for Training and Research in Community Nutrition” in Ghana

By Grace S. Marquis, Principal Investigator, ENAM Project, McGill University and Iowa State University

*The Enhancing Child Nutrition through Animal Source Foods Management in Africa (ENAM) project recently received GL-CRSP funding to initiate the development of a “Center of Excellence for Training and Research in Community Nutrition (Nutrition Center). ENAM Principal Investigator Grace Marquis describes the background, demand and objectives of the Center.*

Health systems in sub-Saharan Africa are challenged by a triple burden: a high prevalence of childhood malnutrition, an increase in the incidence of overweight and obesity, and a continued presence of the HIV epidemic. In Ghana, 30% of children under five years of age are stunted and over 75% of preschoolers are anemic, compromising their cognitive development and future health and productivity. Among the urban adult population, 27% are overweight, with twice as many women as men at increased risk of diet-related chronic diseases and premature death. The HIV epidemic also disproportionately affects women. Although the Ghanaian national HIV prevalence rate is relatively low compared to other African countries, prevalence rates fluctuate vastly and have reached as high as 13% of pregnant woman in some areas of the Eastern region. Suboptimal feeding practices and compromised immune systems increase the risk of mother-to-child transmission of the virus. In these “triple burden” settings, health systems are not only challenged by the increased need for services but also by the complexity of the determinants of these health conditions that do not respond to a simple one-shot solution.

Nutrition is one key determinant of child well being and adult health, and the World Health Organization recommends that nutrition to be mainstreamed in health services. However, to maximize impact, effective interventions

*The Nutrition Center will be a continuation of efforts to sustain ENAM activities. It will provide support for research and training that uses ENAM field approaches including community-based nutrition education. Photo by Susan Johnson.*



require the integration of nutrition with other social, economic, and environmental activities by communities and government, non-governmental organizations (NGO), and university partners. A multi-pronged, participatory approach can provide training opportunities, facilitate implementation of evidence-based research results, and encourage all stakeholders to be active partners in enhancing health.

The envisioned mission for the Center of Excellence for Training and Research in Community Nutrition (Nutrition Center) is:

1. A training site for nutrition education, including the training of undergraduate/graduate students in field methods, refresher courses for health professionals, courses for paraprofessionals and rural health/agriculture extension workers, training of community health volunteers, counseling for community residents, and a community rotation site for Ghanaian and foreign dietetic interns.

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## Center of Excellence for Training and Research in Community Nutrition

2. A multidisciplinary community-based research center, with an emphasis on participatory research in the area of nutrition. The initial focus is on child nutrition but the center is envisioned to be responsive to new areas of research as they emerge.

The creation of the Nutrition Center is the result of years of collaborations among a strong set of partners in universities, government and mission hospitals/ health centers, ministries, non-governmental organizations, the private sector, and communities. These diverse collaborations have been possible primarily due to two large umbrella projects:

- The ENAM project (Enhancing Child Nutrition through Animal Source Food Management in Africa; US-AID funded) is a multi-pronged (nutrition, agriculture, entrepreneurship) intervention to improve the diet and nutritional status of preschool children (2003-2009)
- The RIING project (Research to Improve Infant Nutrition and Growth; NIH funded) is an observational study on pathways by which HIV influences infant health (2002-2009)

A new grant through the International Research Chair Initiative has been funded by the Canadian International Development Research Centre (IDRC). (See related story page 1). With this funding, collaborations between Drs. Marquis and Lartey for training and research on child nutrition have been assured for at least the next 5 years (2009-2014). IDRC funds will be used to support fieldwork for four doctoral and 10 MSc students. The diverse projects will

focus on community-based interventions in rural areas as well as in urban sites that are starting to see an increase in overweight in children.

During the last year, the ENAM project has made numerous efforts to assure sustainability of the

intervention – working with rural banks and developing novel training approaches in nutrition education. The Nutrition Center is a continuation of efforts in sustaining the ENAM project.

The center will provide support for research and training that uses ENAM field approaches, including participatory assessment of needs, evaluation of priorities,

and implementation of effective and affordable training activities and interventions to catalyze behavior change to improve nutrition and health.

The Nutrition Center will be in Asesewa, in the Upper Manya Krobo district, Eastern Region, Ghana. The selected district is comprised of rural villages and small towns and has been grossly underserved in the past. Today, the district has only a small hospital (Asesewa Government Hospital) and two government rural health posts. No nutrition expertise or facilities are available in the Eastern region, including for malnourished children. The non-governmental organization Plan-Ghana is a long-term partner with the Ministry of Health in this district. The center will serve as the training and research site for maternal and child nutrition projects over the next five years and has the potential to become a nutrition training center for sub-Saharan Africa. 🍌

For more information, please contact Dr. Grace Marquis at [grace.marquis@mcgill.ca](mailto:grace.marquis@mcgill.ca) or visit the GL-CRSP website at [glcrsp.ucdavis.edu](http://glcrsp.ucdavis.edu).



*The Nutrition Center will focus on the need to improve child nutrition. Photo by Susan Johnson.*

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## HIV Nutrition Project Receives NIH Funds for Future Project Endeavors

79,000 HIV-infected adults and children at 19 clinics in rural and urban areas in western Kenya. About 50% of AMPATH patients do not yet require treatment with antiretroviral drugs therapy (ART). HNP is focused on this drug naïve group who are not yet experiencing the nutritional and metabolic challenges associated with advanced HIV infection, also referred to as full blown AIDS.

The NIH funding supports the laboratory analyses completed in Kenya and abroad at the United States Department of Agriculture, Agricultural Research Service Western Human Nutrition Research Center at the University of California at Davis. Faculty oversight from Moi University, UCLA and Indiana University are also supported by the award, as well as data management, statistical analysis and administrative

project management at Indiana University, AMPATH research office management at Moi University, consultation services related to nutrient intake, cognitive development, time allocation assessment (years one through four) and feasibility assessment for sustainable initiatives for local biscuit development in year one.

The GL-CRSP funding has supported this important project and has allowed the development and field testing of the nutrition intervention biscuits, the establishment of an infrastructure to successfully conduct a complex, controlled and randomized field nutrition trial with a highly stigmatized and ill population, and the field implementation of the Phase III trial through June 30, 2009. Sources for the additional funding that is needed beyond

June 2009 are being sought for the remaining field costs of \$1,028,000 (\$88,000/year 1 and ~ \$470,000/year for the following 2 years). Included in the field costs are items for the participating families that will help to control opportunistic infections such as malaria, water-borne illnesses and parasites. These include bio-sand water filters, mosquito nets and treatment for parasites every 3 months for all family members. Heifer Project International has provided funding to help purchase biscuit ingredients and will provide a dairy goat and husbandry training, as part of their “Passing On The Gift” program, to each of our participating families upon their completion of the intervention phase. ♡♡

*For more information on the HIV Nutrition Project, please contact Principal Investigator Judy Ernst, Email: [jernst@iupui.edu](mailto:jernst@iupui.edu), or visit the GL-CRSP website at [glcrsp.ucdavis.edu](http://glcrsp.ucdavis.edu).*



*The biscuit production team uses locally available ingredients in the production of the iso-caloric nutrition intervention biscuit which differ in protein quality (meat, soy, wheat). Photo by Joseph Kinuthia.*

# SUMAWA School Greening Programme Has Impact on Watershed Restoration and Environmental Awareness

By Patterson Semenye, Project Coordinator, SUMAWA

Kenya's River Njoro watershed, covering an area of 270 square kilometers stretching from the Mau East Complex to Lake Nakuru, is the study area of the SUMAWA project. As one of the five major water towers in Kenya, the Mau Complex is of great importance to the national economy in creation of employment through farming and related enterprises, hydro power generation and tourism. Lately, however, it has become very obvious to residents, government officials and scientists that the crucial role of the Mau in the economy was rapidly diminishing as a result of wanton deforestation and clearing of natural riparian vegetation to give way to unplanned settlement and agricultural development. Such degradation of the ecosystem has decreased the quantity and quality of river water, increased flooding due to soil bank erosion and diminished buffering capacity in the absence of vegetation, and increased the seasonality of River Njoro because it no longer flows year round.

As a matter of urgency to mitigate the environmental damage, stakeholders and

development agencies, along with the GL-CRSP SUMAWA project, implemented interventions to address the problem before it is too late. One example is a school greening programme initiated with SUMAWA's assistance in 80 schools. The programme is based on the adage that



*Two students plant a tree in the River Njoro Watershed as part of the SUMAWA project's School Greening Programme. The greening programme teaches practical lessons to the students, such as how to establish tree nurseries, plant trees and take care of them to maturity. Photo by Dr. Patterson Semenye*

charity begins at home and that practical education is best implemented at the earliest opportunity in a child's life. Therefore, the greening programme teaches practical lessons to the young ones, such as how to establish tree nurseries, plant trees and take

care of them to maturity. Once seedlings are established in the nurseries, the students plant the potted seedlings in their school compounds. Extra seedlings are then given to pupils to plant at their homes.

The early stages of the school greening programme were challenging because the designated teachers for environment extra curriculum knew very little concerning tree propagation and husbandry and environmental studies, more generally. For this reason, SUMAWA and the Njoro Water Resources Users Association (NJOWRUA) officials conducted intensive courses on tree nurseries, propagation and husbandry with the school greening teachers. The knowledge gained gave the teachers an advantage, so that by the end of last year the 80 schools had planted a total of over 10,000 trees within their compounds. The

pupils took over 1,000 seedlings to plant at their homes. So far the following species have been planted: cypress (*Cupressus lusitanica*), a fast growing exotic tree; pine (*Pinus patula*), another exotic tree that is widely used for timber and pulp; eucalyptus (*Eucalyptus grandis*),

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## 2009 PARIMA Annual Meeting to be held at KARI in Marsabit

The 2009 Annual Meeting of the GL-CRSP Pastoral Risk Management (PARIMA) project will be held June 8 – 12, 2009 at the Kenya Agricultural Research Institute (KARI) National Arid Lands Research Centre in Marsabit, Kenya.

The meeting will feature discussions of recent changes and events affecting the development environment in northern Kenya and southern Ethiopia, as well as detailed progress reports from

team members including (1) small- ruminant production constraints in southern Ethiopia; (2) collective-action groups in Kenya and Ethiopia; (3) simple milk-cooling technology for pastoralists to better preserve milk intended for sale; (4) consumer's willingness-to-pay for improved milk quality at Moyale, Kenya; (5) demonstration of a new PARIMA-produced GIS CD for the region; and (5) lessons learned from the PARIMA

project in general. Discussions on possible future collaborative projects will also be on the agenda.

The meeting will include a local tour of KARI research/outreach sites around Marsabit Mountain as well as an evening visit to the Marsabit National Wildlife Reserve. 🇰🇪

*For more information on the PARIMA Annual Meeting, please contact PARIMA Principal Investigator Dr. Layne Coppock, Email: layne.coppock@usu.edu*

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## SUMAWA School Greening Programme Having Impact in Watershed

a tall exotic tree that can grow to 60 metres, is indigenous to Australia and popular for poles and fuel wood; red stinkwood (*Prunus Africana*), indigenous and famous for fuel wood, fruits, medicine and tooth brushes; and grevillea (*Grevillea robusta*), used for furniture, windbreak, and bee forage.

In the context of restoration of the degraded Njoro River watershed and the Mau Complex, this initiative has successfully demonstrated ways in which a school greening programme can contribute to watershed restoration and environmental awareness.

- Schools can be engaged in tree planting, starting with their compounds, and the same can be extended to their homes. One of the eight schools is

planning on raising tree seedlings for sale. Proceedings would be used to install roof water catchment or purchase of textbooks.

- SUMAWA introduced a successful competition between the schools on tree planting. Last year, the best two schools were each awarded a desktop computer. This has become a rallying point for schools to engage seriously in environmental matters. Given that over 60 schools within the watershed have an estimated average of 800 pupils and 25 teachers each, the potential for community impact is very high. The school that won second place in the competition, for example, has 1374 pupils and 35 teachers. Fifty girls and boys make up

the memberships of the school's environment club.

- Each tree planted has the potential of regulating rainwater flow and thus advancing soil conservation. For Kenya, the most utilized natural resource is soil, and its conservation is crucial.
- Culturally, tree planting has been the domain of adult men. That children are taking the initiative to bring home tree seedlings for planting is thus very innovative and sends a message to parents about the value of soil conservation. Since trees are planted with the permission of household heads, tree planting is an education activity for parents as well as children. 🇰🇪

*For more information, please contact Dr. Semenyé at [semenye@sumawa.or.ke](mailto:semenye@sumawa.or.ke) or visit the GL-CRSP website at [glcrsp.ucdavis.edu](http://glcrsp.ucdavis.edu).*

## Tracy Baker Writes a New Chapter in Africa

*Tracy Baker (formerly Baldyga), a GL-CRSP Jim Ellis fellow and past team member of the Sustainable Management of Rural Watersheds (SUMAWA) project, was supported in degree training by the GL-CRSP from 2003 to 2008, obtaining both her MS and PhD through the University of Wyoming. In this profile, Mrs. Baker answers questions about her background, her research with SUMAWA, and provides an update on life in Accra, Ghana, where she works with the International Water Management Institute (IWMI), part of the Consultative Group for International Agricultural Research (CGIAR).*

If anyone had told me when I was an undergraduate student that living in Ghana is where I would find myself someday, I would have looked at them skeptically. Not because I could not see myself in Africa, but

because my undergraduate degree is in Philosophy and being a scientist was not a career path I had considered when I was younger. But, here I am, living in Accra, Ghana and working as a Post Doctoral Scientist in Hydrology for the International Water

Management Institute. How did I come to this? After several years of pursuing various careers, I knew that what I enjoyed most was working in jobs where I was outdoors and where I felt I could make even a small impact in improving the lives of others. And, growing up in the western United States, I had a

keen interest in water resources. In May, 2002, I walked across the campus of the University of Wyoming while on a road trip with friends. As I walked across the campus, I thought about how for several years I

opportunity to work with SUMAWA in March, 2003.

Now, I live here in Accra, Ghana with my husband and son, and our four pets (two dogs, one cat, and one turtle

... yes, a turtle) that we brought all the way from the USA. Our life here is not that much different from our day-to-day life back in the USA believe it or not. We go to work and school during the week and then on weekends we like to relax by spending a day at the beach or at Aburi Gardens, or perhaps a boat ride on Lake Volta. We have also been fortunate to travel

to some exciting places in West Africa, such as Timbuktu, Mali. My husband has a PhD in zoology and works with graduate students and gives lectures from time-to-time at the University of Ghana and on short-term contracts with IWMI looking at biodiversity issues.



*Tracy with children at Sigotik Primary School in the River Njoro watershed.  
Photo by Amos Kiptanui.*

had wanted to go to graduate school and decided that I would quit my job in San Diego, CA as a technical writer and move to Laramie, Wyoming, which I did about six weeks later. I began school in January, 2003, majoring first in Geography and then switching to Renewable Resources when offered the

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*How did you initially hear about and become involved with the SUMAWA project?*

I decided to take a few courses in Geography at the University of Wyoming, when I met Dr. Scott Miller (Principal Investigator of the SUMAWA project). Scott was looking for a graduate student interested in studying not only water resources, but water resources in Kenya. This really piqued my interest because for many years I had wanted to join the Peace Corps, but at the time, I was a single parent with a small child and would need to wait until he was grown to do so. And now, here was a chance to do my graduate research in a developing country and so I leapt at the opportunity. This was way back in March, 2003. As part of the SUMAWA project, I completed both my MS (2005) and PhD (2008) research.

*Briefly describe the premises of your Master's and PhD research projects with SUMAWA.*

My initial work on SUMAWA was two-fold. I was interested in water resources and hydrologic modeling; however, I quickly learned that there were few data available to complete a project on hydrologic modeling. Primarily, there was a need for current and historic land cover maps of the River Njoro watershed and surrounding areas. For the first part of my MS work, I pursued remote sensing work



*Tracy and Scott Miller at the outlet of the River Njoro in Lake Nakuru National Park, preparing to measure flows in the River Njoro with assistance from KWS Scientist Geoffrey Bundotich (far right) and a KWS Ranger. Photo by Habel Inonda.*

and completed an assessment of land cover change in the watershed from 1986 through 2003. After completing the land cover mapping, I was able to parameterize the Soil and Water Assessment Tool (SWAT). I focused my hydrologic modeling efforts in the upper watershed. For my PhD, I wanted to take my initial research further with regard to developing spatially explicit tools to aid decision makers. Ultimately, I focused quite a lot on error and uncertainty in decision making and maps. My dissertation was composed of three different topics: 1) the architectural development of a spatial decision support tool (SEADS – Spatial Environment and Agricultural Decision Support); 2) an assessment of uncertainty in the SEADS decision rules when using modeled data; and 3) using regression models to disaggregate human population within the River Njoro watershed boundary using land cover maps and census data.

*Prior to working with SUMAWA, did you have experience in Kenya and/or the Njoro River watershed?*

Not only did I not have experience in Kenya, but I had no experiences in Africa. I had travelled in Southeast Asia and parts of Europe, and I grew up on the US – Mexico border, taking many trips into various parts of Mexico throughout my life. But Kenya, and Africa, was new to me.

*While conducting your PhD research in Kenya, describe a day in the life of Tracy.*

I'm not sure that I ever had a typical day while in Kenya. Some days, I would stay in the SUMAWA offices and work or meet with other researchers and students on the project. I tried to get out into the field as much as possible and took the opportunity to check in on the agroforestry projects at schools, visit the new watering troughs, and download the data loggers. I volunteered with the Kenya Wildlife Service (KWS) for the animal census one weekend, which ultimately resulted in a collaboration with Geoffrey Bundotich to put together a poster that outlined the decline of waterbuck populations in Lake Nakuru National Park. I was also interested in increasing my understanding of how people were distributed across the landscape and thinking about

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## Profile: SUMAWA's Tracy Baker Writes A New Chapter in Africa

how to better represent this in maps. I think that some of best experiences in Kenya, highlights of my years with SUMAWA if you will, were not always directly related to my research. (See box below for some of the highlights).

*How and when did you decide to pursue work with IWMI?*

While doing my research with SUMAWA, I became more

and more aware of different types of humanitarian and research organizations involved in various efforts throughout the developing world. From the start, I was interested in the work carried out by the CGIAR centers worldwide. I had applied for jobs with ILRI and ICRAF after my MS, but didn't receive interviews. Research with SUMAWA was exciting and fun and I guess I would liken it to a book that I hoped

would never end, but in 2008 it seemed that perhaps my days of research in Africa would come to an end for at least a while. I received several job offers, but all were in the United States and none would take me to Africa for research. Fortunately, it turned out that my book wasn't going to end so quickly and instead began a new chapter in Africa when I received an invitation to interview for a Post Doctoral Fellowship with

### Kenya brought many new experiences, here Tracy Baker lists the highlights (in no particular order):

- Taking tea and cookies in the Nakuru Sweet Shop with Inonda after a long day in the field.
- High centering the truck in the upper watershed during a downpour and all having to pull together to dig and push the truck out.
- Arriving in Kenya for the first time and given large quantities of chai, not realizing that this tasty concoction would keep me awake for the next two days.
- Chatting with farmers in the watershed and enjoying their laughter when I would mix-up Swahili words.
- Eating nyama choma with friends.
- Watching Steve Hockett demonstrate the "Chicken Dance" for children in the Tree Tops complex.
- Spending a weekend with Dr. Shivoga's family in their home and talking late into the night with their daughter Winnie about what life is like for American girls.
- Changing a punctured tire on the side of the highway.
- Taking my son to see the Wildebeest migration in the Masai Mara and being able to share Kenya and the River Njoro with him.
- Watching rafts of flamingoes lift off from Lake Nakuru.
- Power outages and learning how to make the most of them (I lost track of the number of novels I read), but now, I am well-prepared for the chronic power outages here in Accra during the dry season!
- Stony Tangawezi! (I found a source for it here in Accra)
- Mandazi, mandazi, mandazi. On my last day in Kenya, I went to buy some and when the man whom I always bought from learned it was my last day, he refused my money.
- Living out a childhood dream of being able to eat with my hands at the dinner table without someone whacking me on the head with a fork.
- Long conversations and much laughter about cultural differences and similarities.
- All the children in the River Njoro who would come out to watch us.
- Having a Masai offer 35 cows for me. When I told my father, he was silent and then enquired: "What kind of cows?"
- Feeling like part of a large Kenyan family! It has been an adjustment here in Ghana. Don't get me wrong, Ghana is great and the people are friendly, but my Kenyan friends spoiled me. Perhaps there is some truth to the saying "home is where the heart is".

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the International Water Management Institute in West Africa. Within hours of my interview and presentation of research I had completed with SUMAWA, I received a phone call in my hotel and was offered the position.

*Describe your current post-doctoral position with IWMI.*

My current post-doctoral work with IWMI focuses quite a bit on irrigation and the impacts of climate change. I work in a multi-national work environment, which is really great. We have researchers from Senegal, Ethiopia, Nigeria, Ghana, the Netherlands, France, and Sri Lanka in our office. I am working on four projects currently. My primary project is looking at the potential impact of climate change on different types of water storage options in the Volta Basin – Ghana and the Nile Basin - Ethiopia. As part of this project, I work on hydrologic modeling and scenario development. My other principle project is to look at groundwater irrigation in a small watershed in Northern Ghana. For my contribution to the overall project, I am working with another researcher to assess water productivity using SEBAL modeling, and a small study to assess groundwater contributions to stream flow and how it may be impacted if groundwater



*Working now with the IWMI in West Africa, Tracy is challenged by the effort it takes to draw water from a well using a rope and small bucket in northern Burkina Faso. Photo by Patrick Baker.*

irrigation is increased. The two other projects I am tackling are a much smaller component of my overall research efforts. The first is to assess feedbacks between land cover and land use change and domestic water harvesting through remote sensing and hydrologic modeling. My final project is to start considering the work on water storage in the Volta Basin – Ghana scaled out to the entire Volta Basin. For this project, I will be involved with land use scenario development and hydrologic modeling.

If I were to sum up where my research career is going, I would say I am beginning to focus heavily on trajectories and drivers of land use change and their impact on water resources, and then projecting this into the future to gain an understanding of how these changes will impact water resources availability under a changing climate.

*How is your current work at IWMI the same as and different from the work you were doing prior to completing your PhD?*

I think working as part of the SUMAWA project and the many opportunities I received through GL-CRSP, such as participating in conferences in Uganda and Burkina Faso in 2007, prepared me well for working in a multi-national environment. As a graduate student connected to SUMAWA and as a post-doc at IWMI, I have been encouraged to seek novel approaches to challenges and share them. Another aspect of my current position that is similar to SUMAWA is the interdisciplinary approach to research. I work with engineers, economists, and social scientists. As part of SUMAWA, I was encouraged to be involved with all aspects of the project and I really learned a lot from the other students, which I have

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## Profile: SUMAWA's Tracy Baker

found invaluable because it gave me an appreciation of taking a more holistic approach to research.

I would say the biggest difference for me is actually being able to live long-term in the area where I am doing research. For SUMAWA, I was only in Kenya for short periods, so everything always felt rushed. At IWMI, I am also assigned to several projects in different countries, which at first was a challenge for me because I had spent six years focused on one research site. On one project, for example, I am working in five different watersheds that are distributed through the

Volta Basin – Ghana, and all are larger than the River Njoro. I also have a project in Burkina Faso and next year may find me working in watersheds in Niger and Mali.

Another significant difference is that IWMI focuses on irrigation, so livestock are out of the equation here. That's been a bit of an adjustment for me because I am keenly interested in the impacts of declining water resources on pastoral societies. 🌱

To download Research Briefs on Tracy's SUMAWA work visit the GL-CRSP website: <http://glcrsp.ucdavis.edu>. Tracy Baker (formerly Baldyga) can be reached at [tbaker@cgiar.org](mailto:tbaker@cgiar.org)

## Obama Vows to Double US Support

President Obama has called upon Congress to double US financial support for agricultural development in developing countries to more than US\$1 billion in 2010. The announcement is a welcome sign that US foreign policy recognizes the role of agricultural development in poverty reduction and economic growth. Obama's proposal looks to leverage the strength of US land-grant universities through multilateral partnerships and expanding the development and use of modern technology. It aims to improve the lives of poor populations by growing rural economies through broad-based agriculture growth. 🌱

### Ruminations

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

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Telephone: (530) 752-1721,  
Fax: (530) 752-7523.  
E-Mail: [glcrsp@ucdavis.edu](mailto:glcrsp@ucdavis.edu)  
WWW: <http://glcrsp.ucdavis.edu>

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## Science and Development Network Releases a Special Feature on Aid for Higher Education

The Science and Development Network (SciDevNet), a website dedicated to news, views, and information about science, technology and the developing world has produced a special feature on higher education for development. The feature, part of SciDevNet's Science and Innovation Policy series entitled "Aid for Higher Education," questions what role donors have to play in strengthening higher education in developing countries, how aid should be delivered, and which areas require the most support. Aid for Higher Education represents a landmark attempt by SciDevNet to bring more attention to the role of education and capacity building in development, and is strengthened by numerous opinion pieces, policy briefs, and general news and analysis.

To access the special feature, including the editorial "What role for higher education in development?" please visit SciDevNet's website at [www.scidev.net/en/science-and-innovation-policy/aid-for-higher-education](http://www.scidev.net/en/science-and-innovation-policy/aid-for-higher-education). 🌱

*SciDev.Net is a not-for-profit organization dedicated to providing reliable and authoritative information about science and technology for the developing world.*