



RUMINATIONS

NEWSLETTER OF THE GLOBAL LIVESTOCK COLLABORATIVE RESEARCH SUPPORT PROGRAM

Former Beatle Paul McCartney Calls GL-CRSP Nutrition Study 'Rubbish'

Speaking at the annual meeting of the American Association for the Advancement of Science (AAAS), in Washington D.C., Professor Lindsay Allen, Co-PI on the GL-CRSP Child Nutrition Project made a comment that attracted worldwide attention including ex-Beatle, Sir Paul McCartney.

Dr. Allen was participating in the AAAS forum on Food-Based

Approaches to Micronutrient Nutrition for Human and National Development (see page 5). During a news briefing, Dr. Allen was quoted as saying "Animal source foods have some nutrients which are not found anywhere else. If you're talking about feeding your children and pregnant women and lactating women, I would go as far as to say it is unethical

to withhold these foods during that period of life. There's a lot of empirical research that will show the very adverse effects on child development of doing that." She was especially critical of parents who imposed a vegan diet on children, denying them milk, cheese, eggs, and butter as well as meat. "There's absolutely no question that it's unethical for parents to bring up their children as strict vegans."

GL-CRSP Program Conference Links with IGC

This year's Global Livestock CRSP Program Conference is being held in conjunction with the XX International Grasslands Congress (IGC) in Dublin, Ireland. The IGC is the premier world event for grassland research and development and attracts around 1000 delegates from 100 countries. It is held about every four years at different locations around the world. This year's Congress will meet June 26 - July 1 and the GL-CRSP program conference will meet just prior to the Congress, June 23 - 26 at the University of Dublin.



The Global Livestock CRSP will be well represented at the IGC with 20 papers having been accepted for presentation on research supported by the CRSP. Topics range from grasslands and guns (natural resource-based conflict in N. Kenya) to production strategies of goat and camel herders (grasslands of Kazakstan). (See page 14 for a complete list of papers). The GL-CRSP Program Conference will include presentations by all the project teams on their achievements and findings. Approximately half of the participants are from developing countries with eight countries represented.

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The comment made the BBC news all over the world and began a firestorm of discussion, through the media, on the pros and cons of a vegetarian lifestyle. Dr. Allen was often misquoted and the study was referred to as "anti-veggie research", "propaganda by the meat industry" and even compared to the Nazis.

Sir Paul McCartney, former Beatle and a vegetarian for over 20 years, phoned a BBC Radio show and dismissed the study as "rubbish". "I really do think this is rubbish. I think the medical profession itself, apart from this one person, come to the conclusion that a veggie diet is good for you and can help with colon cancer and stuff, so I suspect these things are

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New Research Briefs Available from Global Livestock CRSP Projects

The GL-CRSP has recently published new research briefs from PARIMA, CNP and WOOL projects. The publication series, first introduced in December 2001, provides the development community with research results in an accessible format. The research briefs condense project studies into one to two page documents highlighting the important findings. A list of “Further Reading” provides sources of additional information and more detailed descriptions of the research. The briefs also provide the practical implications of the findings. The following titles are available for download at the GL-CRSP web site or by writing the Management Entity.

Developing Institutions and Capacity for Sheep and Fiber Marketing in Central Asia (WOOL)

“Cashmere Marketing: A New Income Source for Central Asian Livestock Farmers.” Authors: Carol Kerven, Serik Aryngaziev, Nurlan Malmakov, Hilary Redden, Aidos Smailov.

Child Nutrition Project (CNP)

“Anemia in Rural Kenyan Children: Role of Malaria, Infection and Poor Diet Quality and Meat Intake.”

Authors: Jennifer K. Long, Constance A. Gewa, Nimrod O. Bwibo, Lindsay H. Allen, Suzanne Murphy, and Charlotte Neumann.

“Intervention with Animal Source Foods to Improve Vitamin A Status.” Authors: Ana Claudia Zubieta, Lindsay H. Allen, Nimrod O. Bwibo, and Charlotte G. Neumann.

“Assessment of Snack Acceptance during a School Feeding Intervention in Rural Kenya.” Authors: Constance Gewa, Suzanne P. Murphy, Nimrod O. Bwibo, and Charlotte G. Neumann.

“Supplementation Increases Physical Activity and Selected Behaviors in Rural Kenyan Schoolchildren.” Authors: Marian Sigman, Shannon E. Whaley, Minnie Kamore, Nimrod O. Bwibo and Charlotte G. Neumann.

Pastoral Risk Management Project (PARIMA)

“Food Aid Among East African Pastoralists.” Authors: Erin Lentz and Chris Barrett.

“Promotion of Pastoral Development in Kenya: Perspectives from the Kenya Pastoral Parliamentary Group (KPPG).” Author: Ali Wario.

“Can Formal Education Enhance Risk Management for Pastoralists? The Case of the Il Chamus of Baringo District, Kenya, 1980-2002.” Authors: Peter Little, Abdillahi Aboud, and Clement Lenachuru.

“Improving Pastoral Welfare in Ethiopia and the Role of the Pastoral Affairs Standing Committee (PASC).” Authors: Abdulkarim Guleid, and Kibre Kasa.

“Herd Accumulation: A Pastoral Strategy to Reduce Risk Exposure.” Authors: Getachew Gebru and John McPeak.

“Constraints Limiting Marketed Livestock Offtake Rates Among Pastoralists.” Authors: Chris Barrett, Sharon Osterloh, Peter Little, and John McPeak.

“Pastoral Risk Management in S. Ethiopia: Observations from Pilot Projects based on Participatory Community Assessments.” Authors: Solomon Desta, Layne Coppock, Seyoum Tezera, and Francis K. Lelo.

“Resource Conflict in the Rangelands: Evidence from Northern Kenya and Southern Ethiopia.” Authors: Amare Yirbecho, Christ Barrett, and Getachew Gebru.

“Managing Pastoral Development in Kenya: Challenges for Policy and Law.” Author: Michael Odhiambo.

“Rectifying Distributionally Regressive Microfinance Systems in Northern Kenya.” Author: Sharon Osterloh.

To download a copy of a research brief, visit the GL-CRSP web site at <http://glcrsp.ucdavis.edu/publications/publications.html>. To receive a printed copy of the research briefs, write to the GL-CRSP Management Entity at University of California, Davis, 258 Hunt Hall, Davis, CA 95616 USA. Or send an email to glcrsp@ucdavis.edu. 📧

LEAP About to Take Flight

Through his scientific and humanitarian achievements, Nobel Laureate Dr. Norman E. Borlaug has been credited with saving millions of people from starvation in third world countries. His collaborative work with scientists in Mexico on a high-yielding, disease resistant dwarf wheat sparked the Green Revolution of the 1960s. Borlaug's distinguished career epitomized the qualities of leadership, scholarship, scientific achievement, international cooperation, mentoring, and passion.

USAID has joined USDA, Texas A&M University, CIMMYT and the University of California, Davis to create the Borlaug Leadership Enhancement in Agriculture Program (LEAP). LEAP will be a fellowship program to enhance the quality of thesis research of graduate students from developing countries who show strong promise as leaders in the field of agriculture and related disciplines as defined by Title XII. The program will support engaging a mentor at a Consultative Group on International Agricultural Research (CGIAR) system center to support and

enhance the thesis research and mentoring experience. Awards will be made on a competitive basis to students who show strong scientific and

For more than half a century I have worked with the production of more and better wheat for feeding the hungry people, but wheat is merely a catalyst, a part of the picture. I am interested in the total development of human beings. Only by attacking the whole problem can we raise the standard of living for all people in all communities, so that they will be able to live decent lives. This is something we want for all people on this planet.

- Norman Borlaug

leadership potential, have a well coordinated proposal between their home university mentor and the CGIAR mentor and whose research is related to

a strong research and support project within the host country. Emphasis will be placed on work that has relevance to the national development of the student's home country. Awards will be made twice a year but applications may be received at any time. The inaugural Request for Application is expected to be released in May. The GL-

CRSP has been selected to manage the program. For more information on the program, please contact Susan Johnson, snjohnson@ucdavis.edu. 🌱

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Selling Cashmere Brings Income for Central Asian Pastoralists New Project Supports Training and Information for Improved Marketing

By Carol Kerven, Macaulay Inst.

Indigenous goats of Central Asia produce cashmere, a high value commodity on international markets. The GL-CRSP WOOL project in Kazakhstan, Kyrgyzstan and Tajikistan: “Developing institutions for sheep and fiber marketing in Central Asia” aims to increase producers’ incomes from selling fine wool, cashmere and other animal fibers. The project held a farmer training workshop in the remote desert region of Kyzyl Orda Oblast in Kazakhstan during April of last year. The workshop was also supported by the British Embassy in Kazakhstan and a European Union-funded research project, headed by Macaulay Institute in Scotland, UK.

High quality cashmere goats have been identified in desert areas of Kazakhstan, where villagers have had

*Leading cashmere expert, Hilary Reden demonstrates how to comb cashmere for workshop participants.
Photo by Alan Crawford.*



very few income opportunities since the collapse of state farms in the mid 1990s. In the last few years, Kazak pastoralists began selling goat fiber at low prices to traders, who export the raw fiber for processing in China, Mongolia and Europe. The producers get low prices as they lack skills in combing or sorting cashmere to meet the requirements of international processors.

The workshop, held over two days, included a video film showing how to comb the downy cashmere undercoat off the goats, how cashmere can be simply graded at farm level and the industrial stages of processing raw cashmere into the final products. Workshop participants were informed that pastoralists in neighbouring Mongolia gain high prices for their combed and sorted cashmere, which provides their main source of income, averaging \$8 per goat. The video “From Goat to Sweater” was made by Carol Kerven from Macaulay Institute, Scotland, and Aidos Smailov, a Kazak researcher with the project. Hands-on demonstrations on how to comb and grade cashmere were provided by one of Europe’s leading cashmere specialists, Hilary Redden, who heads the Macaulay Institute’s Animal Fibre Evaluation Laboratory. She confirmed

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Participants at the workshop came from ten villages in the district and included farmers, local traders, agricultural officials and traditional leaders. Photo by Alan Crawford.

AAAS Symposium on Micronutrient Nutrition and Link to Human and National Development Organized by GL-CRSP

Each year the American Association for the Advancement of Science (AAAS) holds its meeting to provide the public with an opportunity to be informed about scientific advances and their impact on society. This year's meeting theme was "The Nexus: Where science meets society" and under the

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that goats in the region produce excellent cashmere but producers were losing value by cutting the fibre off rather than combing, and not sorting cashmere by quality and color. One hundred cashmere combs were distributed to the participants.

The GL-CRSP project Lead Principal Investigator, Bob Stobart, University of Wyoming, and project member Randy Boone, Colorado State University, also participated in the workshop. The national project partner is Serik Aryngaziev, who heads the Goat Department of the Kazak Scientific Centre for Livestock and Veterinary Research. Workshop attendees included 70 people from ten villages in the district, as well as local traders, agricultural officials and traditional leaders. Participants expressed their interest in learning more about how they can increase their incomes from selling cashmere. 🐐👥

For more information, contact Dr. Robert Stobart, bstobart@uwyo.edu.

heading of "Better Nutrition for a Better World", Dr. Montague Demment, GL-CRSP Director, organized a symposium titled, "Food-Based Approaches to Micronutrient Nutrition for Human and National Development." The symposium highlighted new knowledge and approaches that demonstrate the role of micronutrient nutrition in the development of the world's developing countries and emphasize the importance of food as a means of conveying those nutrients for good nutrition. The message of the symposium is that diverse diets, particularly those with animal source foods, contain a wide array of nutrients that are essential for child cognitive and physical development. Child development is fundamental to the creative and entrepreneurial capacity of nations and directly linked to their ability to make their economies grow.

Symposium speakers included Dr. Lindsay Allen, Director of the USDA Western Human Nutrition Research Center and scientists in the GL-CRSP Child Nutrition Project (CNP), Dr. Kathleen Kurz from the International Center for Research on Women, Drs. Marie Ruel and Howarth Bouis from The International Food and Policy Research Institute. The Symposium was moderated and introduced by Ms. Jacqueline Shafer, Deputy

Assistant Administrator from USAID. The symposium was one of a select few that was chosen for a media press conference. In the hour-long interview process with the press, Dr. Allen indicated that she thought, based on the science, that it was unethical for children to be raised as vegetarians. This remark set off a firestorm of coverage (see article on page 1).

Micronutrient (MN) deficiency, the hidden malnutrition, affects 50% of the children in developing countries, reducing their cognitive, physical, and immune system development. Recent work in Kenya by the Child Nutrition Project of the Global Livestock CRSP (led by Dr, Charlotte Neuman, UCLA) shows that animal source foods have a significant impact on the cognitive function, body mass, activity levels, and leadership behaviors of students. Donors have largely relied on supplementation with pills as a means to provide MN. This approach is difficult to sustain, has little long-term economic benefit, and may even have negative health effects when poorly designed.

Food-based solutions that increase the concentration and availability of micronutrients and increase dietary diversity can be effective components of nutritionally sound, sustainable and economically productive

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PARIMA's Training and Research Activities Appreciated

The following letter was recently received by the PARIMA project and recognizes the innovative work and training by the project in the Liben District of the Guji Zone.

To- GL-CRSP/PARIMA Project

Letter of Appreciation for an Outstanding Contribution to Pastoral Development in the Liben District of Guji Zone

Pastoral livestock Production is the mainstay of livelihood in the drier parts of the Guji Zone. In these areas poverty is deep rooted and chronic and the environment is risky. Very few organizations dare to risk investing in these areas to help pastoralists out of poverty. The pastoral risk Management Project (PARIMA) is one of such organizations which has been operating in the southern Ethiopian rangelands since 2000. The PARIMA Project which is administered by Utah State University in the U.S.A. through the PARIMA Project is lead by the principal Investigator, Dr. Layne Coppock and his assistants in the field. Drs. Solomon Desta and Getachew Gebru and Mr. Seyoum Tezera has been involved in various innovative activities to raise communities knowledge and capacity in the district to identify and implement development interventions that helped empower them to better conserve and create wealth as well as to diversify and increase their income and assets so that they become less vulnerable and more resilient to drought and other types of economic, climatic, and ecological shocks. PARIMA helped 961 pastoral women and men in Liben District of the Guji Zone organize themselves into community based development groups with a foundation on grassroots savings-led, saving and credit associations. The groups involved in several activities including but not limited to non-formal education (NFE), micro enterprise development, livestock marketing, social self help function and various community investment.

PARIMA sponsored several courses and cross-border workshops for pastoralists, traders, and development agents in northern Kenya and southern Ethiopia. In the past four years thousands of pastoralists in the District have been touched in a positive way by this simple, cost-effective peer-peer learning approach. We believe PARIMA's activities in the District have made tremendous contribution to enhance food security and market involvement of pastoralists, as well as contributing to the alleviation of poverty.

The district pastoral development office is honored to present this letter of appreciation to PARIMA for its outstanding contribution towards the long journey and the district began to ensure food security and alleviate poverty among the most marginalized groups of people such as the pastoralists in the district. We would like to applaud PARIMA for its achievements it has recorded so far. The pastoral development office would like to reiterate its commitment to fully support PARIMA's activities. It is our dream to see the project expands to include more pastoralists in the Zone.

With Best Regards,
Sara Arero Sasure
Head, Liiban Woreda
Supreme Office for Rural and Agricultural Dev't

PARIMA Outreach Unit Honored for Outstanding Service to Pastoralists

Over the past few years Ethiopia has celebrated a National Day for Pastoral People. The event consists of technical presentations, panel discussions, and other meetings devoted to improving the image and status of pastoralists and pastoral development throughout the country. The activities are well-covered by the national media. The PARIMA Outreach Unit received a special award of Merit for “Outstanding Service on Behalf of Pastoral People in Oromia State” at last year’s celebration, held in the town of Yabelo in the Regional State of Oromia. The PARIMA group was the only one to receive such recognition from among a field of national and international organizations operating largely in Oromia. The ceremony was witnessed by the President of the Oromia Regional State, H.E. Obbo Junedin Sado, Members of Parliament, and a large audience. PARIMA was represented at the ceremony by Dr. Solomon Desta, Dr. Getachew Gebru, and Mr. Seyoum Tezera. The PARIMA Outreach Unit was recognized for its unique blend of problem-solving action research, information dissemination, and the special ability and dedication to get policy makers, development agents, and communities to work together to confront problems related to pastoral development and risk management.

Recently, the PARIMA project also received a letter



Ethiopian members of the PARIMA Outreach Unit are shown above with the PARIMA lead PI Dr. Layne Coppock during an earlier meeting at the border town of Moyale. From left to right they are Dr. Getachew Gebru (research associate), Coppock, Ato Seyoum Tezerra (field assistant), and Dr. Solomon Desta (coordinator and research associate). Dr. Desta received the award on behalf of PARIMA.

of appreciation from the head of the Liiban Woreda Supreme Office for Rural and Agricultural Development in Ethiopia. The letter recognizes the work the PARIMA project has done in the Liben District of the Gujii Zone (see previous page).

The USAID Mission to Ethiopia has helped support the PARIMA Outreach Unit since 2000. The funds provided are part of the Southern Tier Initiative. The PARIMA Outreach Unit works on behalf of the USAID Mission to Ethiopia as a development facilitator, donor and applied research entity in the southern rangelands. The Outreach Unit has created a new model

for voluntary, community-driven development processes in the region.

The PARIMA Outreach component complements the main PARIMA research project through dissemination of information and provision of non-degree training opportunities.🤝

For more information on the PARIMA project or the Outreach Unit of PARIMA, please contact Dr. Layne Coppock, Utah State University, Dept. of Environment & Society, 140 Natural Resources Bldg., Logan, UT 84322-52315. Tel: 435-797-1262; Fax: 435-797-4048. Email: Lcoppock@cc.usu.edu.

Community Development and Rangeland Productivity

By Eric LaMalfa and Layne Coppock, Utah State University

Using fire to improve grazing, control brush, and reduce tick populations has been a fundamental tradition of Borana culture in southern Ethiopia. Borana elders report that in years past, some traditionally set fires would burn for days across the landscape, and that these fires were important tools to help pastoralists enhance rangeland productivity. When Mengistu Haile Mariam came to power in Ethiopia in the 1970s, Borana elders recall that the use of fire in rural areas was quickly and officially discouraged. During the decades that followed, increases in human and livestock populations on the Borana Plateau have reportedly contributed to a downward trend in range condition. More people means more settlements and this creates problems whereby herds can't move as much, or as far, as they used to. More localized grazing pressure from livestock can shift rangeland composition from grass-dominance to dominance by bush species, especially in

the absence of fire—grasses are typically adapted to fire. Bush can then crowd out grasses indefinitely and result in declines in forage production. When woody plants occur at high densities, their root



Instructor Eric LaMalfa (center, holding drip torch) with course participants and community members who assisted in the demonstration burn. Photo by Getachew Gebru.

systems can even reduce flows of below-ground water to wells. Fire, when properly used, can thus help promote rangeland diversity and productivity and human welfare.

The PARIMA project recently organized a week-long short course on fire management to coincide with the end of the long dry-season on the Borana Plateau. This is the best time to conduct prescribed fires.

Students attending the short-course included professionals from governmental and non-governmental organizations in Ethiopia. Training allowed development organizations and pastoral communities to jointly plan range management activities and use controlled fire, in combination with other interventions, for reduction of noxious brush and ticks on rangelands. The short-course also served as a forum for policy discussions concerning the use of fire in rural Ethiopia. The short-course was taught by Mr. Eric LaMalfa of Utah State University, ably assisted by Dr. Getachew Gebru of PARIMA.

The course began with traditional Borana fire experts speaking on the history of fire and traditional methods of fire use in the southern rangelands. The following changes and observations in the rangeland ecology were reported by Borana elders:

1. Bush has encroached on almost all lands previously occupied by pasture grasses. The example given was that of the Dida Hara plains:

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literally translated, “Dida Hara” means “plains devoid of brush thickets or trees.” This site is now full of brush;

2. Tick infestations previously controlled by fire now occur extensively throughout the year. Although chemical pesticides help reduce tick populations, the cost is too high for most pastoralist households and the chemicals are also known to have negative effects on human and livestock health; and
3. The bush thickets serve as refuges for wild animals including hyenas. Predation, and the spread of wildlife-related diseases, are major causes of livestock mortality and illness. As a result, livestock health and production are below previously achieved standards.

All the Borana elders agreed that efforts to reclaim rangelands would be worthwhile and such effort would be supported by the community. The Boran acknowledged that reintroducing fire would help restore rangelands; however, concerns about the use of fire under current conditions were raised. Decreases in fuel availability from heavy grazing, increased human population, and the abundance of new settlements and farm plots make burning in traditional, indiscriminant ways dangerous and unacceptable.

The Borana elders suggested that the use of fire under the

current conditions can only be accomplished under the direction of experts who can use fire safely considering the social and ecological changes which have occurred. The pastoralists submit that they will act as participating stakeholders in the future use of fire rather than as the sole undertakers.

Local government administrators also spoke to course participants and community members about rangeland management and other socio-economic issues. They stressed the need for communities to work towards self-reliance by addressing local issues without government and non-government organizations instigating the process. The administrators pledged to provide hand tools and extension services for the time being, and to begin the process of dealing with bush encroachment. Concern was expressed that the “food for work” programs previously used to mobilize the community and encourage people to cut back the bush manually had undermined the restoration effort by training communities to only cut bush when there is an immediate food payoff. The solutions suggested included the spreading of a self-reliance ethic and planning for long-term restoration efforts to be under-taken as small yearly projects. Fire is recommended as one of many restoration tools working in combination. The

administrators made it clear that there never was a legal “fire ban,” and there is no current policy constraint which makes any reference to fire on public land. Therefore, communities are given the authority to burn again.

The PARIMA short-course combined hands-on experience with lectures on such topics as prescribed fire and vegetation monitoring, fire safety, use of local weather data, and predicting fire behavior. Discussion topics included policy and brush-control efforts. Small groups discussed elements of a fire plan and what information a standard fire plan on the Borana Plateau might need to contain. Students from Ethiopia shared their experiences fighting wildfires in the highlands during 2001. These fires lasted for three months and burned over 60,000 ha of government forests in the Ethiopian highlands. The fires killed many local people and government employees who were attempting to suppress the fires. The Ethiopian government used military resources and also consulted a Dutch fire suppression company from South Africa. However, following the fires there was no capacity building for future management of wildfires in Ethiopia.

The situation in the Ethiopian highlands is reminiscent of the catastrophic fires in the western US, including the great fire in Yellowstone National Park in the 1980s. The fact that the long-

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Capacity to Burn: Community Development and Rangeland Productivity

standing policy in US national parks was to prevent any and all natural fires for many decades was a contributor to the catastrophe; a fire ban led to a massive build up of fuel loads over many years and a “tinderbox” situation resulted with dire results. One outcome of the Yellowstone fire assessment was a review of fire management policy on public lands in the US, with a changed orientation towards promoting the wise use of prescribed fire as a tool to better manage fuel loads and promote healthier ecosystems. The PARIMA course is therefore relevant to both highland and rangeland circumstances in Ethiopia and has started to build fire management capacity in the agency.

Three sites (Alona, Dembi, and Dikale) were burned for demonstration purposes during the course. Each site was ecologically distinct and had been managed or treated differently prior to demonstration. The sites were identified by communities in June 2004 and grazing was eliminated from the sites in the past year to promote local fuel accumulation. The primary objective of the fire demonstrations was to build confidence and skill among the participants in the use of prescribed fire. Secondary objectives were to demonstrate the effects of the fires on range

Mr. Askebir Tesfaye, development agent from Arero Rural and Pastoral Development Office, uses a drip torch as prescribed in U.S. Forest protocols. Photo by Eric LaMalfa.



vegetation and fuel loading, which will be evaluated in the coming years. The demonstrations also attracted 40–50 community members who enthusiastically participated in the burns.

Course participants expressed satisfaction in achieving the expected learning outcomes. Students particularly emphasized the utility of field exercises for understanding the use and control of prescribed fire. A framework was set for future collaboration and sharing of treatment results among organizations using fire for bush control. The participants formed a task force to make recommendations for fire management policy and officially lift the “perceived ban” on use of prescribed fire by way of a circular (memo).

Participants agreed there is also a lack of resources and training for wildland fire suppression.

Several opportunities exist for the development of fire suppression and fire use programs in Ethiopia. The College of Forestry at Debu University has expressed interest in offering courses in fire use/ suppression and range management, and would also like to participate in fire ecology research. In addition, PARIMA and other organizations participating in the workshop expressed interest in offering the same fire workshop in other regions of Ethiopia and northern Kenya. The next step could be to facilitate the exchange of US fire-suppression experts and materials to Ethiopia. Fire managers in the US would benefit from the challenge of teaching and adapting US fire suppression methods and field organization (i.e., incident command system) to help Ethiopia develop a modern capacity. 🤝

For more information, contact Dr. Layne Coppock, Lcoppock@usu.edu

Participants in Fire Management Course

Name	Organization	Area of training
CHALTU TUFA	Dire District Rural and Pastoral Development Office	Animal Science
ABDULBASIT OMER KEDIR	Raitu District Rural and Pastoral Development Office	General Agriculture
ADAMU TEFERA RIBI	LAGA – HIDA District Rural and Pastoral Development Office	General Agriculture
FEYISA TAFÄ	Oromia Pastoral Development Commission (OPDC)	Tropical Agriculture
ATLAW BELAYNEH WONDEMU	SORDU	Range Management
Dr. ABULE EBRO GEDDA	Adami Tulu Res. Center (OARI)	Range Management
ZEWDU EDEA BEDADA	OARI–Yabello	Animal Sciences
TALEW DERESSA	Liben District Rural and Pastoral Development Office	Forestry
SOLOMON WAKGARI	Save the Children/USA	Range Management
HUSSEN MIYO	SOS Sahel	Forestry
FELEKE ASRAT	Southern Nations Nationalities and Peoples, Pastoral Community Development Office	Agricultural Economics
YOSEPH MELKA AKO	Debu University	Forestry, Range Mgt
BAHERU YIFRU	Yabello District Rural and Pastoral Development Office	Animal Science
ALEMU DIRIBI BEKRE	Fentale District Rural and Pastoral Development Office	Animal Science
CHALCHISIA ZAWDU	Bale Sowina District Rural and Pastoral Development Office	General Agriculture
TESHOME TSIGE	Bale Robe District Rural and Pastoral Development Office	Animal Science
ALIU MUSTEFA	CARE-Ethiopia	Animal Science
ASHEBIR TESFAYE	Arero District Rural and Pastoral Development Office	Animal Science
GETACHEW GUTEMA	Borana Zone Rural and Agricultural Development Coordination Office.	Veterinarian
Dr. NUMERY ABDULHAMID SUFIAN	OARI- Yabello	Veterinarian
FEKADU ABATE	Oromia Pastoral Development Commission (OPDC)	Animal Production
TSEGAYE CHEMEDA	Oromia Rural and Agricultural Bureau, Did Tiyura Cattle Breeding Ranch	Animal Science
JATANI SORA	SORDU	Expert Cooperatives
ABDI JILO	Moyale District Rural and Pastoral Development Office	Forest Husbandry
Dr. GETACHEW GEBRU	PARIMA/GL-CRSP	Animal Science
DADHI AMOSHA	PARIMA/GL-CRSP	Animal Science
SAMUEL TUFFA KAWO	OARI – Yabello	Animal Science
ASTER ABEBE WOLDEMARIAM	Debu University	Animal Science

Common Problems Focus of Study Tour at Yellowstone

The planning activities of the GL-CRSP project “Managing National Parks in the Context of Changing Populations and Economies” continued with a recent study tour and workshop at Yellowstone National Park. Representatives from Tanzania and Kenya were joined by US collaborators for a week-long look at issues common to all. (See box for list of participants). The assessment is developing a collaborative project for shared issues of management, training and research between the Greater Serengeti-Mara and Greater Yellowstone Ecosystems. Participants echoed the comments of Dr. Charles Mlingwa, director of the Tanzania Wildlife Research Institute, who was quoted in the Billings Gazette (2/5/05): “This is the first project of its kind in the history of wildlife management. We realize that there may be common problems. We’d like to see how other sides are approaching those problems.”

The study tour was devoted to exploring two key issues in the Greater Yellowstone Ecosystem, 1) Northern Range overgrazing and “natural regulation” as a policy; 2) management of wildlife on private lands. Participants traveled to study sites in the Paradise Valley, north of Yellowstone National Park (YNP) and to the northern entrance at Mammoth

Hot Springs. In winter, the Yellowstone Park native ungulates often graze in the Northern Range in and adjacent to the park. The population of elk and bison wintering there has increased considerably in the past two decades, particularly in mild winters. Approximately two-thirds of the northern winter range is within YNP and the other third is on public and private lands. Some scientists and members of the public have questioned the appropriateness

of the park’s natural-regulation policy and there is disagreement amongst experts as to whether the area is overgrazed or if current conditions fall within the natural range of variability. African colleagues noted similar challenges in managing migrating ungulates that routinely travel between Park and private lands and parallels with predator management in the Serengeti-Mara ecosystem.

The visit to study sites in

Participants on Study Tour

Tanzania

Dr Charles Mlingwa, Director General, Tanzania Wildlife Research Institute
Justin Hando, Chief Park Warden, Serengeti NP
E. Mwangomo, Ecologist, Serengeti NP
E. Kishe, Director of Resource Conservation and Ecological Monitoring, Tanzania National Parks HQ
Dr E. Gereta, Special Assistant to the Director General Tanzania NP
Benjamin Kijaki, Ikorongo/Grumeti Game Reserves, Wildlife Division

Kenya

Ole Kamuaro Ololtisatti, International Livestock Research Institute
Samson Lenjirr, Rhino Program Coordinator Maasai Mara
Michael Koikai, Senior Warden Maasai Mara
Douglas Sikawa, Senior Warden, Mara Triangle-Mara Conservancy
Paul Montet, Siana Wildlife trust
Francis Nkoitoi, Koyiaki-Lemek Wildlife Trust
Livingstone Kunini Ntutu, Olchorro Oirowua Wildlife Association
Robin Reid, International Livestock Research Institute

Key US Collaborators

Glenn Plumb, Supervisory Wildlife Biologist, Yellowstone National Park
PJ White, Wildlife Biologist, Yellowstone National Park
Kurt Alt, Regional Biologist, Montana Fish, Wildlife and Parks
Pat Flowers, Supervisor, Montana Fish, Wildlife and Parks
Craig Jourdenais, Montana Fish, Wildlife and Parks
Duncan Patten, Big Sky Institute
Andy Hansen, Ecology Department, Montana State University

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Madison Valley focused on the management of wildlife on private lands. The group was hosted by Montana Fish Wildlife & Parks (MFW&P) at their Wall Creek Wildlife Management Area. The Wall Creek site was acquired by MFW&P using funds from the sale of fish and hunting licenses in 1960 to improve the area's value as winter range for elk. The site is an important demonstration project of how best to manage cattle grazing so as to minimize its assumed adverse effects on wildlife. MFW&P uses a rest-rotation system at Wall Creek, complementing its range management plan with that of surrounding private and Forest Service lands. The management has resulted in increases in local elk populations. The agency found that cattle grazing made key forage plants more attractive to the elk, and thus increased the landscape's productivity. Today, the Wall Creek Area supports between 2,000 and 2,500 elk, compared to 250 when the agency purchased the lands. Much of this population growth resulted from changes in hunting restrictions and other factors, but bringing cows back furthered the trend. The group was joined by Mr. John Crumley, President of the Madison Valley Ranchlands Group (MVRG). The MVRG is a consensus based land use planning initiative addressing growth in a traditional ranching area undergoing rapid changes as a result of rural residential development. MVRG is actively



Glenn Plumb, Yellowstone National Park, discusses the issues surrounding elk management in Yellowstone's Northern Range. The Lamar Valley of Yellowstone National Park (background) has witnessed a variety of elk management strategies including strategic elk reduction programs through shooting of thousands of elk by rangers in the 1960s through the current policy of natural regulation. Elk dynamics are particularly interesting to the YESEMA project because, like wildebeest and other Serengeti-Mara wildlife, they spend substantial time outside of the Park. Pictured (L to R), Paul Montet, Ole Kamuaro, Samson Lenjirr, Douglas Sikawa, Benjamin Kijika, Glenn Plumb, Michael Koikai.

addressing local wildlife issues and has been successful in collaborating with MFW&P to help mitigate some negative impact by large elk numbers certain times of the year. In addition, they are collaborating on two wolf programs to deal with the impact on livestock producers. The Madison Valley was of particular interest to the Mara representatives in that the parallels between managing land for cattle and wildlife are an issue that has been challenging Mara management for years.

Following the study tours, participants developed a case

study template for three case studies to be conducted during Spring 2005 in Yellowstone, Serengeti and Mara. A very lively discussion ensued on the differences between a case study useful for researchers and one that would be of value to managers. The group spent time discussing the problem orientation model of Tim Clark, Yale University, and used materials from his books in developing the template for the case studies. The first Leadership Workshop, scheduled for 2006, will focus on the joint case studies and developing a 'common interest' solution to a specific management and policy problem. ♡♡

(continued from page 1)

GL-CRSP and IGC

In addition to project presentations, the conference will include invited speakers. Guest speaker Dr. Tim Clark, Yale University, will provide an operational protocol by which to understand the dynamics of natural resource management problems being addressed in a complex setting of multiple stakeholders.

Guest speaker, Dr. Deborah Rubin will address the trend in supermarkets and how it affects the food systems in developing countries. Supermarkets are emerging in developing countries as a major force in food systems. They are also the latest fadish focus of the international development community. Fad or fact they are likely to be a topic in the future of most agricultural agendas in the near term.

A workshop will also be held on integrating gender into GL-CRSP research. The session will look at key concepts and approaches to improving development outcomes for men and women. Teams will look at incorporating a gender analysis framework into their research design.

An array of meetings are also part of the conference agenda. PAC, TCC and individual project team meetings will fill-out each day for a full and productive conference. 🍷

GL CRSP Papers Accepted by the IGC

LINKS/GOBI, PI: Jerry Stuth, Texas A&M University

1. Jama, Abdi, et.al. A decision support system for monitoring livestock diet quality and performance: Verification Study on Cattle, Adami Tulu, Ethiopia.
2. Kaitho, Robert, et al. Forecasting forage using the PARIMA model in Pastoral areas of east Africa.
3. Angerer, Jay, et al. Forage monitoring technology to improve risk management decision making by herders in the Gobi region of Mongolia.
4. Tolleson, Doug, Jerry, Stuth. Near infrared spectroscopy of feces to predict diet quality in grazing animals: Development of a portable system
5. Gombosuren, Udval. In vitro gas production of pasture dominated by *Artemisia frigida* and *Carex duriscula* species.
6. Damdin, Tsogoo, Sh. Batsukh. Germplasm collection of Mongolian forage plants and production results from plantaion experiments.

PARIMA, PI: Layne Coppock, Utah State University

1. G.A. Keya, M. Ngutu, A. Adongo, I. Tura. Linking research to development in pastoral communities of northern Kenya: a recent experience and key findings in participatory research approaches.
2. A.D. Jillo, A.A. Aboud, D.L. Coppock. Of grasslands and guns: natural-resource-based-conflict among the Waso Borana pastoralists of northern Kenya.
3. S. Desta, D.L. Coppock, S. Tezera, G. Gebru. Avenues for enhancing traditional livelihoods from grasslands: income diversification among pastoral women's groups in southern Ethiopia.
4. M.N. Mutinda, A.A. Aboud, D.L. Coppock. Community perceptions of vulnerable key ecological resources in Baringo District, Kenya.

SUMAWA, PI: Scott Miller, University of Wyoming

1. Gichaba, C. M., Onyando, J.O., W. A. Shivoga, S.N. Miller. Micro-Field Assessment of Infiltration and Surface Runoff using Mini Rainfall Simulator in Upper River Njoro Watershed in Kenya.
2. W. A. Shivoga, M. Muchiri, S. Kibichi, J. Odanga, S. N. Miller, T. J. Baldyga, C.M. Gichaba. Upland land use subwatersheds: contribution to downstream water quality in River Njoro Watershed, Kenya.
3. L.W. Chiuri, F.K. Lelo, M.W. Jenkins, S.N. Miller. Development of a Toolkit for Participatory Management of Rural Watersheds in Kenya.
4. T. J. Baldyga, S.N. Miller, K.L. Driese, C. Maina-Gichaba. Using Landsat Imagery to Analyze Land Cover Change in the Njoro Watershed, Kenya.

WOOL, PI: Bob Stobart, University of Wyoming

1. Boone, R.B., K.A. Galvin, R.H. Stobart. Spatial Relationships in Marketing Successes for Fibre Producers in Middle Asia.
2. Galvin, K.A., C. Kerven, R.Boone and A. Smailov. Production Strategies of Goat and Camel Herders in the Grasslands of Kazakstan: Implications for the Marketing of Fine Fibers.
3. Kerven, C., S. Aryngaziev, N. Malmadov, H. Redden, A. Smailov and K.A. Galvin. Cashmere Marketing is a New Income Source for Central Asian Livestock Farmers.

Dr. Mahmoud Receives Distinguished Award for Excellence in Research

Hussein A. Mahmoud was awarded the 2003-2004 Margaret Lantis Award for excellence in original research by a graduate student in anthropology. The award was established in honor of Professor Margaret Lantis, a Professor Emeritus at the University of Kentucky, former President of the Society for Applied Anthropology and the American Ethnological Society, and a leader and 'pioneer' in applied anthropology in the USA. Mahmoud, who received his Ph.D. degree in anthropology at the University of Kentucky in December 2003, was recognized for his outstanding research on livestock traders and trade in Northern Kenya and Southern Ethiopia. He is the first Ph.D. trainee supported by the PARIMA project of the GL-CRSP and was supervised at the University of Kentucky by PARIMA Co-PI, Peter Little. Pictured is Hussein Mahmoud (right) with his advisor, Peter Little, at a reception celebrating the completion of Hussein's Ph.D. dissertation. 🍷



Dejene Negassa Debsu Named 2005 Jim Ellis Mentorship Grant Recipient

The 2005 Jim Ellis Mentorship Program for Graduate Students grant was awarded to Mr. Dejene Negassa Debsu of the PARIMA project. Mr. Debsu is from Weliso in the West Shewa region of Ethiopia and is currently a PhD student at University of Kentucky majoring in Anthropology. PARIMA co-PI, Dr. Peter Little serves as his major professor.

Mr. Debsu's study will focus on the resource-based conflicts confronting Guji herders and agropastoralists in the Guji Oromo borderlands of southern Ethiopia. To understand the processes that shape current resource use among the Guji, the study will investigate changes in

the land tenure system, the local system of resource management and processes for resolving conflicts, and local perceptions of these changes. More specifically, the study will investigate how the differentiation of wealth and interests among different groups, and state land administration policies affected their access and control of local resources. It will also explore how the rules governing common property in the Guji Oromo area have been modified over time but have failed to resolve recent conflicts with their neighbors, particularly the Gedeo people.

Mr. Debsu research in the Guji community will be greatly facilitated by his linguistic,

geographic and cultural competency in the area. He was a member of the team sent by the Ethiopian government to investigate the 1998 conflict in the Guji area and make recommendations on the level of relief assistance needed for over 10,000 displaced people. Since September 2002, he has worked with Dr. Little as a research assistant under the PARIMA project. In this capacity, he has conducted anthropological analysis of pastoral research materials including qualitative analysis of interview data. In addition, Mr. Debsu has received support from the BASIS CRSP for his master's research in an Oromo area of northern Ethiopia. 🍷

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AAAS Symposium on Micronutrient Nutrition and Development

food systems. Addressing micronutrient malnutrition through animal-source foods builds both the cognitive and physical capacity that developing countries require for national development and to compete in a global and open economy. Making the link between agriculture, food systems, nutrition, and child development is fundamental to a comprehensive approach to the economic development of the world's poor.

The broad argument for linking nutrition to national development was made by Dr. Demment. To alleviate poverty in developing countries, economies must grow. Economic growth that leads to poverty alleviation is fueled by the creative and physical capacities of people. The impact of micronutrient malnutrition is established early in life, leading to growth stunting, lower cognitive abilities, lethargy and poor attention, and greater severity and rates of infection. These effects limit educational progress, physical work capacity, and life expectancy, thereby reducing individual lifetime productivity and the aggregate ability of the population to enhance its well-being and participate in national and global markets. The diets of the poor are largely cereal-based, monotonous and lacking in diversity and micronutrients.

Animal source foods (ASF) have been an important factor in human evolution, a component of what was a historically diverse diet, and an important source of micronutrients. Poverty and micronutrient malnutrition positively influence each other. This poverty micronutrient malnutrition (PMM) trap requires outside inputs to change the state of development in developing countries. Nutrition interventions have been excellent investments in development. More productive interaction between agricultural scientists and nutritionists, supported by a strong federal agenda for development, is needed to break the PMM trap. In the end, food is the means by which nutrients are delivered. Food-based approaches will require long-term commitments, but are more likely to be sustainable because they are part of a development process that leads to long-term economic growth.

Because biofortification is a new strategy, reported Dr Bouis, definitive studies of the impact of this approach must await the results of efficacy and effectiveness trials. In general, however, poor consumers in developing countries acquire roughly one-half of their total iron intake (and a higher percentage of zinc intake) from staple foods. Results from germplasm screening suggest

that iron and zinc intakes can be increased by a minimum of 50% in poor people's diets through conventional breeding. This should result in an appreciable improvement in nutrition and health even for those whose intakes remain below recommended daily rates. Models for analyzing the health burden of iron and zinc deficiency, thereby enabling the quantification, *ex ante*, of the potential benefits of biofortification have been developed. The framework, Disability-Adjusted Life Years (DALYs), is increasingly being used to quantify the burden of disease. DALYs attempt to capture the number of healthy years of life that are lost due to disease. A team of nutritionists and economists has adapted this framework to suit the specificities of micronutrient deficiencies in developing countries. Models are being used for several countries to quantify the health burden of micronutrient deprivation. It is important to point out that these minimum effects are what can be documented with evidence presently available with respect to the use of conventional breeding techniques following a strategy of increasing trace mineral density. Such lines might be thought of as a "first generation" of nutritionally improved varieties. Other generations will

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Child Nutrition Project Invites Policymakers to Hear Research Results

In a direct effort to engage policymakers in the results of GL-CRSP research, the Child Nutrition Project (CNP) of the GL-CRSP organized a conference in February to present the results and implications of their work in Kenya on children and their nutrition. The CNP, led by Dr. Charlotte Neumann (UCLA) and Dr. Nimrod Bwibo (University of Nairobi), has worked for five years to measure the impact of diet on the cognitive and physical development in rural Kenya. Their research found that a small amount of meat (about two oz. every school day) fed over a two-year period had a significant impact on intelligence scores (20% increase), muscle mass, activity levels and leadership behaviors. The positive impact is likely due to micronutrients (iron, zinc, B-12, Vit. A) that are critical to development of the neurological, immunological and muscle systems.

The conference was attended by high-level representatives of the Office of the President, Ministry of Education, Ministry of Health, Ministry of Livestock and Fisheries, ILRI, Rockefeller Foundation, WHO, World Bank, NGOs and the private sector. Presentation of the research results were made by Drs. Bwibo, Neumann and Suzanne Murphy (University of Hawaii). Their presentations familiarized the audience with the pervasive nature of micronutrient malnutrition, its impact on children and the very positive results of small amounts of animal source foods in the diets of children. Dr. Montague Demment, director of the GL-CRSP, introduced the conference goals and objectives and provided a qualitative model that linked nutrition to human capital and economic development. Mr. John Owuor of the Office of the President



Dr. Kilemi Mwiria, Assistant Minister of Education addresses conference participants. Photo by Zakayo Akula.

then followed with a quantitative modeling approach that calculated the return on investment in improving the nutrition of Kenya's children. His analysis showed that rates of return were five times the investment. The conference participants then engaged the audience to set a series of development actions and policies to form the basis for interventions to improve child nutrition in Kenya.

The conference closed with a challenge from Dr. Demment for the group to submit a proposal to the GL-CRSP to support a working group of public and private sector partners within Kenya to advocate for child nutrition as an explicit development objective and begin to take action to enable the conference conclusions to become a reality. 📷



Conference organizer Susan Nyerere (left) works the registration desk as Z. Akula, former Project Administrator for CNP registers. Photo by Susan Johnson.

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follow as more is learned about reducing levels of compounds that inhibit bioavailability and increase absorption, and new genes are added through biotechnology.

Dr. Ruel presented evidence from developed countries which shows that eating a variety of foods from different food groups contributes to improving the quality of diets. People who consume more varied diets are more likely to meet all their nutrient needs. Animal source foods – which are highly concentrated in essential nutrients – also play a crucial role in improving dietary quality. A question that arises is whether simple indicators of dietary diversity (DD) or animal source food (ASF) intake accurately predict dietary quality in developing countries where diets are typically monotonous and rely on a few plant-based staples. Using data from Kenyan school children participating in the GL-CRSP research, Dr. Ruel compared the performance of three indicators of DD and one indicator of ASF intake in predicting diet quality (defined as the probability that the child had an adequate intake of 15 vitamins and minerals). Her research team found that children who ate a larger number of foods or food groups (i.e. who had greater dietary diversity) had a better quality

diet and were more likely to meet their daily requirements for energy and several vitamins and minerals. Greater intake of animal source foods, however, was not associated with better diet quality in our sample because only 14% of the children consumed ASF and those who did, consumed very small amounts (average 17g). Our results confirm that dietary diversity is key to improving the quality of diets even in populations with monotonous, plant-based diets. Animal source food intake, however, contributes little to diet quality when consumed by only a small proportion of the population and in minute amounts such as in poor rural Kenya. Efforts to promote diversity in the diet and to increase the availability and access to animal source foods in resource-constrained environments should be pursued in order to accelerate progress in improving dietary quality.

An applied research study was undertaken in two districts in western Kenya where women traditionally grow white sweet potatoes and vitamin A deficiency is highly prevalent. Dr. Kurtz indicated that the intervention introduced varieties of orange-fleshed sweet potatoes (OFSP) that met women's preferences in terms of agronomic, taste and other characteristics; trained women

in production, processing, preparation and marketing the new varieties; and promoted the consumption of the OFSP, along with other vitamin A-rich foods. Twenty women's groups were identified – 10 per district. In each district, five of the 10 groups participated in on-farm trials – the control or "agriculture-only" groups, while the other five participated in the on-farm trials and received additional support (nutrition education, lessons on food processing, and visits by extension agents and a project-hired field worker) – the intervention or "agriculture-plus" groups. Changes in children's dietary consumption using the Helen Keller International food frequency methodology were measured. Findings suggested that OFSP promoted through the "agriculture-plus" intervention yielded significant benefits for children, and could be used as a key food-based entry point for reducing vitamin A deficiency.

Dr. Allen presentation indicated that diets of many populations in developing countries tend to be of low quality, which means that they fail to provide sufficient amounts of nutrients (most often micronutrients) to meet requirements even when energy and protein intakes are adequate. The main reason for this situation is usually

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US Ambassador to Ethiopia Visits Global Livestock CRSP Pastoral Risk Management Project Sites in Southern Tier

The US Ambassador to Ethiopia, Mme. Aurelia Brazeal, recently went on a fact-finding mission which included PARIMA project sites in southern Ethiopia. The Ambassador was accompanied by representatives from USAID Washington and Ethiopia including Mr. Frank Young, Africa Bureau, USAID-Washington; Mr. Jeff Borns, Director of East African Affairs, USAID-Washington; Mr. Norm Nicholson, USAID-Washington; Mr. William Hammink, Director, USAID-Ethiopia; Mr. John McMahon, USAID-Ethiopia, and Dr. Pedro Carrillo, USAID-Ethiopia. The trip included a visit to communities benefiting from GL-CRSP support. Dr. Solomon Desta and Mr. Seyoum Tezerra represented the PARIMA project and gave the visitors background information on its activities in the area. The project has facilitated the formation of 284 primary and 59 secondary savings and credit and micro enterprise development/marketing groups. The project has also initiated the formation of the Tile Mado cooperative and through the PARIMA Outreach Unit, has built its capacity to provide efficient services to its members. Chachu Tadecha from CIFA (a local NGO in Kenya) also provided



Ambassador Brazeal (left) and Pedro Carrillo, Southern Tier Initiative Program Manager USAID/E listen as Solomon Desta explains PARIMA Outreach activities. Photo by Eric LaMalfa.

information on the cross-border women's tours that have been co-sponsored by PARIMA and CIFA. The dignitaries were able to discuss benefits and constraints with the community groups during the visit. They also had the opportunity to observe the marketing of livestock, market infrastructure and speak with livestock owners and traders. 🇪🇹

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an inadequate intake of animal source foods (ASF) – meats, dairy products, eggs or fish. Diets low in ASF increase the risk of deficiencies of vitamin A, iron and zinc, vitamin B-12, riboflavin and calcium. For example, low ASF intake has been shown to predict night blindness due to vitamin A deficiency in Nepal, and vitamin B-12 deficiency in Mexico, Guatemala and Kenya. ASF are the only dietary source of B-12, and that vitamin B-12 deficiency is highly prevalent

in developing countries even where some ASF are consumed; contrary to previous thinking it is not a condition restricted to veganism, and in fact affects all age groups and both genders. The iron and zinc content of some plant source foods, especially legumes, is reasonably high but only a relatively low amount of these minerals can be absorbed from many plants due to their binding by plant constituents. Relatively small amounts of

ASF can substantially increase nutrient adequacy when added to a plant-based diet. For example, providing 20% of Kenyan schooler's energy requirement as a daily snack containing 68 g meat provided 68% of their zinc requirement, 106% of their B-12 and 26% of their iron needs. If the snack contained 250 mL milk it provided 38% of the calcium, 83% of the vitamin B-12 and 82% of the riboflavin requirement. Importantly, these

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supplements improved arm muscle mass, cognitive function and behavior compared to an equicaloric no-ASF snack or a placebo, and greatly reduced the high prevalence of B-12 deficiency at baseline. There is no way that a diet can be nutritionally adequate unless it includes sufficient ASF, or micronutrients are added through fortification or supplementation.

The symposium highlighted the continuing effort of the GL-CRSP to integrate nutrition and agricultural science to span the barriers that have separated these fields. In development where human capacity is so

important to performance in a globalized and information based market, the link between nutrition and performance is clear and critical. Good nutrition is about quantity and quality. Quantity ensures survival, quality insures performance and good welfare. If developing countries are to

grow their economies, they will do so on the backs of people who are well nourished from fetus to adulthood, whose cognitive capacities are maximized and whose immune system are full functional. It is only when people escape the poverty malnutrition trap that economies will grow. 🐶🐶

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'Rubbish' says Former Beate about Study

engineered by livestock people who have seen sales fall off. From my own point of view, it has been a good thing for me and my children, who are no shorter than other children."

The original information evolved beyond all recognition as it moved from scientific paper to press release to soundbite. Dr. Allen had included a clause that puts the comment into perspective, however very few news organizations included this bit of information. Dr. Allen actually said, "There's absolutely no question that it's unethical for parents to bring up their children as strict vegans UNLESS those who practiced them were well-informed about how to add back the missing nutrients through supplements or fortified foods," and she stands by that statement.

Dr. Allen also made the point, as did other scientists at the news conference, that children have high requirements for

many of the micronutrients as their bodies and brains develop. Coupled with the small size of the gastro-intestinal tract, the demands require that foods have dense concentrations of rapidly absorbable nutrients. Animal source foods have this characteristic and plant foods do not. It is for this reason that World Health Organization (WHO) makes the recommendation that children 6-24 months cannot meet their requirements for micronutrients without animal source foods unless they are supplemented or eat fortified foods. For "old men" like McCartney with low metabolic demands and relative large gastro-intestinal tracts, being a vegetarian is likely to be a healthy approach but children are a different story and we need to be a bit more sophisticated about our approach to nutrition. 🐶🐶

For more information on the GL-CRSP Child Nutrition study, please contact Dr. Demment at mwdemment@ucdavis.edu.

Ruminations

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