The Challenge of University Engagement in International Development: a focus on animal agriculture

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Presentation

- A bit of history and the present funding/research environment
- Future projections
- Some projects that are representative of international development trends
  - Human nutrition
  - Predicting risk in pastoral systems
  - Coping with risk
  - Institutional capacity building
- The USAID funding landscape
- Some questions to ask before making departmental decisions
Present international development funding environment

- Short-term focus
- “Results oriented”
  - Research
  - Human and institutional capacity building
- Monitoring and evaluation
- High transaction costs
- Faculty incentives
Role of Animal Production in the Developing World

- Livestock’s Long Shadow: FAO
- Small holder focus
- Market linkages
- Transition from small to large scale production systems
  - Management: intensification & diversification
  - Disease issues
  - Quality challenges
  - Environment
  - Nonruminant/ruminant
- Pastoralism and marginal lands
  - Risk management
  - Extensive to intensive
- Human and Institutional Capacity Development
- Animal science issues embedded in larger social and economic issues
Role of Animal Production in the Developing World

- Projections for 2050
  - 9-10 Billion people
  - More than double world food supply
  - Large increase in consumption of ASF (animal source foods)
  - Past rates of increase in food supply will not do it
  - Most population increases in the developing world
  - Greatest gaps between potential and actual yields in developing countries
  - Need for developing country capacity
  - Feed the Future: from field to human capital
Some Successful Examples of Animal Agriculture in a Crosscutting Context

- Meat consumption and child cognitive and physical development ([http://www.vimeo.com/14063199](http://www.vimeo.com/14063199))
  - Nutrition CRSP
  - GL-CRSP
    - Child Nutrition Project
    - ENAM
More than one billion people, nearly a sixth of the world’s population, suffer from chronic hunger.

Negative impacts on:
- Immune system function
- Child cognitive and physical development
- Work productivity
- Lifespan
- Quality of Life
BUILDING HUMAN CAPACITY: Nutrition and Child Development: 30 years of commitment

- Nutrition CRSP Research 1980s: Kenya, Egypt and Mexico
- GL-CRSP Conference 2003: Journal of Nutrition Supplement
- GL-CRSP ENAM Project (2005-10): Ghana
Fogel estimates that half of the economic growth in the UK in the industrial revolution was due to increased capacity of people and explained by nutrition’s impact on human health, productivity and life span.
1977 NRC conducts “World Food Study”
Does moderate malnutrition have impact on human function?
Energy thought to be main causal factor
In response USAID funded the N-CRSP
Observational, non-intervention study in Mexico, Kenya, Egypt
The most important findings were:

- faltering in height and weight of children occurs early and was not caught up later in life.
- quality was a much stronger determinant of nutritional status than was the quantity.
- Animal Source Foods were predictor of cognitive function.
- at that time, the findings were "recognized as being on the cutting edge of modern nutrition science".
- Sadly ignored because not an intervention study.
Role of Animal Source Foods to Improve Diet Quality and Growth and Development in Kenyan Schoolers

Principal Investigators

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Raven's Scores

Graph showing the scores of different groups over time:
- Control
- Calorie
- Milk
- Meat
Behavior during play

Compared to all other groups, the MEAT GROUP:

• Had greatest increase in % time spent in high activity levels, and least % time in low activity.
• Spent more % time in leadership and initiative.
• Were more talkative, playful – and “disruptive”
Animal Source Foods to Improve Micronutrient Nutrition and Human Function in Developing Countries

Proceedings of the conference held in Washington, DC June 24-26, 2002

Guest Editors
Montague Demment
Lindsay Allen

Published as a Supplement to The Journal of Nutrition

Official Publication of the American Society for Nutritional Sciences

Online at www.nutrition.org
Building Human Capacity to Accumulate Resources: ENAM
Enhancing child Nutrition through Animal Source Food Management

PI: Grace S. Marquis
Iowa State University/McGill University
Esi Colecraft
University of Ghana, Legon

This research is a component of the Global Livestock Collaborative Research Support Program (GL-CRSP) that is supported by USAID Grant No. PCE-G-00-98-00036-0
Survey: What limits children’s consumption of ASF?

Results:
- Knowledge of nutritional impacts of food groups
- Income of household
What income generating activities work best for women?

What is necessary for success?
- Nutritional education
- Microfinance
- Training in poultry raising and other IGAs
ENAM

• Outcomes
  ◦ Increased income for women
  ◦ Increased consumption of ASF by children
  ◦ Increase in protein, calcium, iron and zinc in diet of children
  ◦ Improved child nutrition status (wgt/age)
  ◦ Improved household food security
• Rural Banks now involved
Post-ENAM

- Well over $2 million has been loaned and 2,000+ women are participating.
- The majority of the original women participants are now sending their kids to private school.
- Four of the ENAM field officers are now working for the rural banks.
- One ENAM trainer alone is responsible for over 80 new groups in and around Accra.
- The education/microfinance model for ENAM is now the business model for loans through the Akuapem Rural Bank.
Lessons learned

- Build human capacity at all levels with particular emphasis on women.
- Invest in research to improve the effectiveness of implementation.
- Multi-dimensional perspective is important.
- Good development takes time.
- Project leadership, strong and balanced, is essential to success.
- Continuity is critical.
A Key to Development

Human capacity to innovate
FOOD SECURITY

PREDICTION

RISK

HUMAN CAPACITY

DIVERSIFICATION

RESOURCE ACCUMULATION
GLCRSP
Livestock Early Warning System, TAMU

Predicting RISK LEWS

MAJOR THRUST OF LEWS:

1. Create an effective methodology that integrates new tools for early warning into a system that will detect changes in the state of livestock and grazing.

2. To institutionalize the methodology in sustainable organizations and develop a network of collaborators to implement a full-scale livestock early warning.
LEWS Structure

- On ground monitoring fecal samples & NIR measures
- Satellite remote sensing (NDVI, weather)
- Historical weather patterns
- Plant growth models
- Satellite transmission
Southern Kenya: Forage Deviation (%)

% Deviation From Long Term Mean
- Above Normal
- Normal
- Watch
- Warn
- Alert
- Emergency
- Disaster
- Not monitored
- Wetlands
- Game Reserve
- Roads

*Images produced by the GL-CRSP Livestock Early Warning System (LEWS)
Livestock Information Network and Knowledge System (LINKS) Connecting to Markets

- On ground market monitors
- Text messaging reporting system
- Spatial model to track flow
- Information dissemination via cell phone, space radios and internet
- LINKS
Managing Risk: PARIMA

PASTORAL RISK MANAGEMENT
UNDERSTANDING THE SOURCES OF RISK &
BUILDING THE CAPACITY TO MANAGE RISK

LAYNE COPPOCK, PI
UTAH STATE UNIVERSITY
Pastoral people have lived on the Borana Plateau of southern Ethiopia for centuries. But their traditional way of life is threatened by recurrent droughts, human and livestock population growth, and increased competition—even armed conflict—over ever-scarcer pasture and water.

The GL-CRSP Pastoral Risk Management project (PARIMA) conducted research, training, and outreach to help people diversify their livelihoods away from complete dependence on livestock. This is the story of PARIMA and some of those people.

This film was made possible by The Global Livestock Collaborative Research Support Program and U.S. Agency for International Development

More information about PARIMA is at http://glcrsp.ucdavis.edu

Run time: 15 min. © 2010 Robert Caputo

PARIMA
PASTORAL RISK MANAGEMENT
IN SOUTHERN ETHIOPIA

A FILM BY ROBERT CAPUTO
Some Successful Examples of Animal Agriculture in a crosscutting context

- Pastoral Risk Management (PARIMA) ([http://www.vimeo.com/12800413](http://www.vimeo.com/12800413))
  - Role of risk
  - Research to understand risk
  - Investment in human capacity
  - Swiss RE, Oxfam, UCD index insurance trial
Capacity Building Helps Pastoral Women Transform Impoverished Communities in Ethiopia

D. Layne Coppock,1* Solomon Desta,2 Seyoum Tezera,2 Getachew Gebru2

Poverty, drought, and hunger devastate people on Africa’s rangelands. We used an action-oriented approach from 2000 to 2004 to build capacity among thousands of pastoralists to diversify livelihoods, improve living standards, and enhance livestock marketing. The process included collective action, microfinance, and participatory education. Poor women previously burdened by domestic chores became leaders and rapidly changed their communities. Drought occurred from 2005 to 2008. We assessed intervention effects on household drought resilience with a quasieperimental format that incorporated survey-based comparisons of treatment groups with ex post controls. Interventions led to major improvements in trends for quality of life, wealth accumulation, hunger reduction, and risk management. Human capacity building can be a driver for change, generating hope and aspirations that set the stage for the use of new information and technology.

Historically, African pastoral societies had low densities of people, large livestock herds, and access to vast grazing lands. This allowed for subsistence food production (e.g., milk and meat), accumulation of animal wealth, and sustainable use of natural resources. Unfortunately, this situation has changed (7, 2). Pastoralists today are often poverty stricken and beset by hunger. Efforts to “develop” pastoralism have had little success (3-5). Human population growth, overgrazing, annexation of key resources by outside entities, physical insecurity, and underinvestment in pastoral areas contribute to declining per capita food production, reduced vegetation cover, increased soil erosion, loss of herd mobility, and more marginalized people. Multyear droughts pose grave threats to pastoralists because crop failures and massive death losses of animals escalate into crises for food availability, income generation, and asset preservation. Technical options to increase food production or lessen pressure on natural resources remain elusive, largely because of environmental and social constraints. Alternatively, nontechnical options focused on human capacity building could have positive effects through livelihood diversification that improve risk management (2). Diversification could emphasize more involvement in commercial livestock production and non-

livestock microenterprises to balance traditional livestock production. This could help communities become more resilient when coping with drought (6).

Once considered a prime example of sustainable pastoralism in eastern Africa, the Borana pastoral system of semiarid southern Ethiopia (Fig. 1) exemplifies the changes noted above. The people have become poorer and more vulnerable due to population growth and lack of development investment, a trend exacerbated by impacts from multyear droughts in 1983-1985, 1991-1993, 1998-1999, and 2005-2008. Each drought resulted in the deaths of about half of all livestock, losses having a cumulative value in the hundreds of millions of U.S. dollars (7). More details concerning the people and system dynamics are given in (8) (study area). The main objective of this research was to determine whether pastoral livelihoods on the Borana Plateau could indeed be diversified in a sustainable fashion to lessen or reverse the downward spiral at the household level.

Starting in 2000, we used an action-oriented, participatory approach to engage the pastoral community to refine problem diagnosis, chart pathways for change, and identify and implement interventions. This integrated the ideas, skills, and resources of numerous partners (i.e., pastoralists, researchers, development practitioners, educators, and donors). The process is described in (8) (treatment background). In short, the acute need for livelihood diversification was confirmed, a problem that required capacity building. Stepwise capacity-building interventions were undertaken (Fig. 2), including: (i) inspiring the Ethiopians to improve their circumstances by exposure to problem-solving methods and linking them to forward-thinking, successful peers in northern

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Opportunities for Engaging Partner Universities for Capacity Building (HED)

- Example: Putting Learning into Distance Education (Univ. of Maryland & Stavropol State Agrarian University)
- HED grant (http://www.hedprogram.org/)
- $125K for 3 years (‘06-’09) with $332K match
- SSAU formed regional consortium with four other smaller ag universities in North Caucasus region of Russia
- Had worked with SSAU since ‘01 via ACDI/VOCA Farmer-to-Farmer Program
Funding: USAID

- Resources to respond to RFAs (Sandra Russo, Program Development, IC, UF)
- Be connected to USAID in Washington, DC and the field (Walter Bowen, International Programs, IFAS)
- Missions
  - Mission strategy
  - How your idea will make the Mission look good?
  - What is it that you bring that is unique?
- Connection to private sector
- Advertising yourself
- USAID to campus
- Transaction costs
- Faculty engagement
USAID Funding

- Specific sources
  - Borlaug LEAP
  - Africa US Higher Education Initiative Partnerships
  - HED
  - New RFA HICD
  - $100M RFA
- CRSPs
- FTF
Other Sources

- Foundations
- World Bank
- Sabbatical leave opportunities
- Jefferson Fellows
What Universities Do Best in Development

- Educate
- Research that generates and extends knowledge and technologies
- In combination that builds human and institutional capacity that creates and sustains development
The Campus Environment: making the case for international development

- **Strategic vision**
  - What are your institutional strengths?
  - Research to implementation continuum: where do you want to be?
  - Country focus or rapid reaction model?
  - Topical focus: what focus do you want to be known for?
  - Combination topical-country-region

- **Benefits to articulate**
  - What does ID do for Florida?
  - For University of Florida? For Animal Science?
  - What does it do for students?
Possible Actions

- Endowed Chair/program
- Graduate group on international development
- Hire faculty committed to ID, possibly connected to graduate group
- Campus campaign to highlight the importance of animal agriculture in developing countries with a global perspective
- Campus census to determine international links and efforts: compendium of success stories
Possible Actions

- Embed ID into curriculum
- What are student interests in international?
  - World poverty
  - Hunger
  - Inequality
  - Environment
  - Climate change
  - Traditional animal science?
US Responsibility

- What is the responsibility of the US for global issues?
- What should be our role as universities?
Thank you