

## **CAPRI Research Grants 2000**

### **ILRI: Enhancing the role of community actions in disease control and natural resource management: The control of animal and human trypanosomosis**

In Africa, 245 million households are estimated to lose livestock to animal trypanosomosis annually, while human trypanosomosis derived from cattle affects around 300,000 people yearly. In south-east Uganda, the disease constitutes a serious threat to public and veterinary health, placing some 3.3 million people and 2.8 million cattle at risk. Several methods have been developed to harness the spread of the disease and control the populations of tsetse flies, which carry and spread the disease. The most common are traps and insecticides, both of which necessitate widespread collective action in applying these methods so as to sufficiently control tsetse populations. However, efforts to organize communities around tsetse control have been largely unsuccessful with inadequate and unsustainable levels of participation. This study aims to examine the reasons behind this failure and explore the components that result in more successful collective action.

The theoretical literature contains many diverse opinions of what principles underlie the creation and endurance of collective action. A closer look is needed at what characteristics in different systems contribute to collective action, in essence a refinement of the principles is required to assess under which conditions and for which types of activities do they tend to apply and under which do they not. The study in particular looks at the structure of benefits and costs in shaping incentives for cooperation.

The research approach employs a complementary mix of empirical and participatory methods, in order to strengthen the reliability of the data collected and achieve both analytical breadth and depth. Outputs are expected to enable the identification of natural resource, social and disease indicators, analysis of the relationships between trypanosomosis and natural resource management including land use and disease transmission models, and development of community-action plans that aim at controlling trypanosomosis, improving resource management and reducing poverty. As part of a collaborative research strategy, CAPRI funding will support research which leads to a more in-depth understanding of the factors that influence people's decisions to participate in collective action for tsetse control and natural resource management in general, as well as to formulation of a community-level tool for improving livelihoods.

**Project Leader:** John McDermott

**Project Period:** April 1 2000 – March 31 2003

**Collaborating Partners:** Makerere University, Coordinating Office for the Control of Trypanosomosis in Uganda (COCTU), the Livestock Health Research Institute (LIRI), IFPRI

**Grant from CAPRI:** \$125,000

**Other Funding:** IDRC, European Union

**CIAT: Social capital, collective action, and community agro-enterprise development: Understanding the linkages that contribute to poverty alleviation and sustainable natural resource management**

This proposal draws on evidence that agro-industrialization has negatively affected small-scale industries, smallholder farmers, and the poor. While economic and technical disadvantages are part of the problem, policies that focus only on reducing these barriers may not be sufficient to shift the balance to enable locally-owned agro-industries to prosper. This is because many of the solutions to reducing the transaction costs associated with small scale production and processing involve organization and collective action through such mechanisms as cooperatives, and developing social capital networks that reduce the cost of doing business. Therefore, the purpose of the study is to examine the relationship between social capital and various forms of collective action, including network building – and to better understand how these in turn shape the performance of local, small scale agro-enterprises and the poor. A richer appreciation of these elements and their linkages by policymakers may assist in developing more creative instruments for overcoming the hurdles that limit the poverty alleviating potential of community-level agro-enterprises.

The study will employ an in-depth case study approach of nine rural agro-enterprises located in Colombia. Qualitative and quantitative methods will be combined in order to gain insight on complex processes and relationships leading to particular outcomes, an understanding that would not be possible using statistical methods alone. A common approach across all case studies will enable comparative analysis of results.

Expected outputs from the study include 1) an edited volume on the role of social capital and collective action in the performance of community-based agribusinesses, which will include both the case studies and a cross-study analysis, and 2) an analytical tool for assessing social capital and its contribution to sustainable agro-enterprise development.

**Project Leader:** Nancy Johnson

**Project Period:** April 2000-December 2001

**Collaborating Partners:** Center for Livestock and Agricultural Studies (CEGA), Bogota; Corporacion Colombiana Internacional (CCI), Bogota; National Center of Coffee Research (CENICAFE), Manizales

**Grant from CAPRI:** \$125,000

**Other Funding:** CIAT Core, DANIDA

## **CIMMYT: Collective Action for the Conservation of On-Farm Genetic Diversity in a Center of Crop Diversity: An Assessment of the Role of Traditional Farmers' Networks**

Increasing attention is being placed on the importance of maintaining plant genetic diversity in the wake of broader genetic uniformity produced by agricultural technologies like high yielding varieties. Fears proliferate that loss of these valuable resources carry negative implications for the potential for adaptation of seeds to local environments and farmers' needs and for pest and disease resistance. The project will assess the role of collective action among small-scale farmers in managing and maintaining maize genetic resources in Oaxaca, Mexico, a center of domestication and diversity for this crop. The study will examine how the structure and function of farmers' networks affects access to varietal diversity and seed flows in small-scale farmers' fields and determine how these factors relate to evolution and conservation of maize genetic diversity.

Social science methods such as ethnography, focus group interviews, and surveys will be combined with quantitative population genetics and molecular markers. Research currently underway in Oaxaca is delineating the variables and relationships between individual farmers, seed flows, and genetic diversity. This project will add a new social dimension to the analysis by partitioning the genetic diversity within and among the networks and by testing the hypothesis that networks allow a broader genetic diversity to be maintained. It will also analyze the structure of diversity within the networks and examine the role that different participants play in those networks. In this way, two areas of research that have developed independently up until now will be linked: the study of farmers' role in crop evolution and conservation and that of collective action. By understanding the social rules and institutional systems behind the germplasm flows in traditional farming communities, threats to genetic diversity can be identified and possibly addressed through correctly targeted research and extension.

The project will convene two workshops, a conference, and a meeting with various stakeholders involved in the use and conservation of maize genetic resources.

**Project Leader:** Mauricio Bellon

**Project Period:** June 2000 – May 2003

**Collaborating Partners:** Universidad Autónoma de Chapingo (UACH), Mexico; Institut de Recherche pour le Développement (IRD), France; Instituto Nacional Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP)

**Grant from CAPRI:** \$124,176

**Other Funding:** IDRC, Government of France, CIMMYT Core