

## Report

# Links between sleeping sickness and natural resource endowments and use : what can communities do?

*Final Narrative Report – IDRC Project 100106*

August 2003

International Livestock Research Institute (ILRI), Nairobi, Kenya

***In collaboration with:***

Livestock Health Research Institute (LIRI), Tororo Uganda

Makerere University, Kampala Uganda

University of Guelph, Canada

University of Edinburgh, United Kingdom

Farming in Tsetse Control Area Project (FITCA), Entebbe, Uganda

ARCHIVE  
616.937(676)  
I5

For further information, contact

Dr John McDermott

International Livestock Research Institute,

Box 30709, Naivasha Road, Nairobi, Kenya

Tel: (254-2) 63 07 43, Fax: (254-2) 63 14 99

Via USA—Tel: 1-650-833-6660

Email: J.McDermott@cgiar.org

WWW: <http://www.cgiar.org/ilri/>

## **SYNTHESIS**

This project addressed community-based and research strategies for the control of rhodesiense sleeping sickness in south-eastern Uganda. It was part of a larger research programme with funding contributions from the Department for International Development (DFID- UK; trypanosomosis epidemiology and GIS studies), Farming in Tsetse Control Areas (FITCA-EU; tsetse and trypanosomosis control and environmental monitoring studies) and the CGIAR system-wide program on Collective Action and Property Rights (CAPRI; economic studies). The IDRC contribution supported a PhD student working on collective action in villages (stipend, supervisor support and field expenses), project and community meetings and the travel of ILRI, Ugandan and University of Guelph collaborators on the project.

The main findings of the basket of projects undertaken are: that communities focused on broad development interests, such as water, education, health and agriculture. Sleeping sickness control and treatment measures were part of the community priorities where it was a current problem. Some communities did take specific actions for trypanosomosis control, particularly in constructing and maintaining spray races for tsetse (and other vector) control. The risk for human and animal trypanosomosis varied by natural resource type. Communities did not propose specific natural resource management measures for trypanosomosis control but recognized some natural resource risk factors. Regarding the epidemiology of sleeping sickness, the main impact of the disease was the deaths of undiagnosed and untreated cases. The risk of being undetected increased with distance from a sleeping sickness centre and was also higher in communities that had not had recent experience with sleeping sickness. Cattle are the main reservoir for sleeping sickness and have a very high prevalence of long duration infections in high-risk villages. Infected cattle from endemic areas also spread and supported the establishment of human infective- trypanosomes in new areas. Pending activities include studies on the impact of strategic public sector control measures and placing these in an historical context, and support for natural resource management and land use studies by Ugandan agencies.

**This report is presented as received by IDRC from project recipient(s). It has not been subjected to peer review or other review processes.**

**This work is used with the permission of International Livestock Research Institute.**

**© 2003, International Livestock Research Institute.**

## **RESEARCH PROBLEM** (initial hypotheses and evolution of thinking)

The key research problem to be addressed by the project was to investigate community and researcher developed strategies for improving human health through the control of rhodesiense sleeping sickness in south-eastern Uganda. Strategies could include the most appropriate (feasible, efficacious and sustainable) mix of natural resource management, public health, social and policy interventions. Community-based strategies drew on methods, developed over several years by the research team, in community-based agro-ecosystem health research. Researcher components relied on the inputs of a wide-range of disciplines - epidemiology, ecology, geographical information systems and systems analysis. A key challenge was to effectively link community-led and researcher-led research processes to achieve synergies.

As the project evolved the emphasis of communities was on broader health and agriculture issues. For communities, sleeping sickness was one human health constraint among many and cattle trypanosomosis one of many agricultural problems. The extent to which communities are willing to contribute financially and otherwise to collective actions to control human and animal trypanosomosis is being examined in a related project (funded by the Collective Action and Property Rights Initiative of the CGIAR - CAPRI). Current evidence from community-initiated activities in 6 villages and other villages in south-eastern Uganda is that communities are willing to work together to construct communal spray races and manage them for several months. From a research standpoint, a number of crucial issues arising from the epidemiology studies (funded by UK government's Department for International Development - DfID), requiring public health and policy interventions, became evident during the project. The first was that sleeping sickness could be moved into new areas by cattle movements and become established in local human, cattle and tsetse populations. The second was that the greatest burden of sleeping sickness was in the death of patients not seen or diagnosed and that this under-reporting increased with distance from health facilities capable of diagnosing sleeping sickness.

**RESEARCH FINDINGS** (project's contribution to knowledge from a scientific and policy perspective)

### **1. Community ecosystem analysis and actions**

A participatory workshop approach was used to facilitate diagnosis and assessment of community and ecosystem health issues and then plan and implement activities. This had general utility in the 6 communities intensively studied, but led to greater participation in some villages than others. Participation and implementation of community action plans were greatest when communities had strong support from sub-county teams (local teams of extension staff), when effective procedures for choosing leaders and holding community meetings were established and when strategies and capacity for communicating with institutions outside the community were developed. Communities that had a positive experience in working together were much more likely to engage in subsequent collective actions.

Community workplans and actions did not only focus on the control of human and animal trypanosomosis but tackled broader health and agricultural issues. This is not surprising, as the villagers' main sources of livelihoods were derived from agriculture. Community actions (see Table 1) focused on small infrastructure projects such as water supply, building infrastructure (education and health) and agricultural and veterinary pilot projects. The monitoring, evaluation and management of natural resources and land use were not initially proposed as priority actions by communities. Efforts to integrate natural resource monitoring and management into community activities with support from research teams depended on the input of the FITCA-Uganda project and various government departments and only began at the end of Year 3 of the project (January – December 2003).

Table 1: Summary of community action plans during the project

	Problems	Initial (Year 1)		Subsequent (Year 2-3)	
		Actions	Actors	Actions	Actors
	Sleeping sickness	Training Traps	Community LIRI Serere Health Clinic	Training Traps, spray race Sleeping sickness screening and treatment Bush clearing around houses	Community Sub-county team Serere Health Clinic LIRI / FITCA
	Bulls for ploughing	Restocking	Government NGOs	Restocking Pasture improvement Women's group Training	Community SOCADIDO (NGO)
	Lack of education			Establish adult literacy classes	Community Sub-county
)	Sleeping sickness	Advice on traps Health education	Community Entomologist FITCA Serere Health Clinic LIRI Hospital/staff	Advice / supply of traps Health education	Community Sub-county
	Lack of clean water	Drill borehole	Community District Water & sanitation project staff	Drill borehole Protection of existing springs	Community Sub-county District Donors
	Lack of livestock	Improve local breeds	District vet officer Community (farmers)	Build spray race and provide insecticide	Community FITCA
	Lack of crop farming inputs	Train farmers	DFI Staff Farmers District agricultural officer		
dha	Sleeping sickness	Build health centre	Community Sub-county Catholic church	Build health centre Sleeping sickness screening and treatment Bush clearing around homes Traps	Community Sub-county Donor LIRI FITCA District
	Water borne diseases	Construct borehole	Community	Construct borehole Protecting current water sources (4)	Community Sub-county Donor
	Nagana (animal tryps)			Construct spray race	Community FITCA
ra	Sleeping sickness	Build health centre	Community Donors Sub-county	Build health centre Traps Bush clearing around homes Health education	Community Sub-county FITCA LIRI Donors
	Water borne diseases	Construct borehole	Community Technical persons (NGO)	Construct borehole Protection of existing springs	Community Donors NGOs
ma	Lack of land / Low agricultural productivity	Rent more land Improve farming methods	Community Households Extension staff	Training on farming methods Improved seeds, fertilizers, insecticides	Community Sub-county National agricultural advisory service
	Sleeping sickness	Obtain traps Health education	Community Trappers Technical staff	Traps Sleeping sickness education, screening and treatment Bush clearing around homes Lab and technician	Community Sub-county FITCA District LIRI

cha	Death of livestock	Restocking Veterinary Service	Donors LIRI Community Farmers District Vet Officer	Restocking Livestock group Community animal health and management training Establish fish ponds	Community Community-based organization Sub-county District Vet Officer Health Assistant
	Water-borne diseases			Construct borehole Protection of existing water sources Training on hygienic water Construction of latrines	Community Health Assistant
	Low farm productivity			Training on farming methods and demonstration plots Improving ox traction	Community Community-based organization Sub-county

An important planned activity was to assess how the findings from the 6 intensive communities could be extrapolated to the population of communities in south-eastern Uganda. For this purpose, community surveys in 165 randomly selected villages were conducted in collaboration with the FITCA-Uganda project (design, planning, surveyor training, and database development). Initial analyses of data in a subset of villages (Year 2) showed that community planning and collective action was associated with previous success in such activities. The final analyses of these data were delayed due to poor health of the research collaborator responsible for this and will not be completed until March 2004.

Support to researcher and community-based natural resource management studies conducted by the FITCA project is currently underway in 4 of the 6 intensively studied villages (January – December 2003). These build upon the community development process previously initiated in these villages.

## 2. Patterns of sleeping sickness and animal trypanosomosis risk

Findings were of three types. The first was that the risks of human and animal trypanosomosis were associated with natural resource availability and use, particularly proximity to swamps and bushy areas (first annual report). The second was that there was a clear spatial pattern of sleeping sickness case detection. Reporting was strongly biased to areas close to health facilities with a capacity to diagnose sleeping sickness (first annual report). Thirdly, in two districts, Tororo and Busia, spatial patterns in sleeping sickness cases over a 15-year period showed some long-term focal areas, in which control efforts reduced

cases over a few years but with later recurrence, and other areas in which control efforts had eliminated detected cases in subsequent years (year 3 activity). Extending these studies to other districts over longer time periods was proposed but has yet to be undertaken.

These findings have important implications for targeting the diagnosis, treatment and control of sleeping sickness. Models of sleeping sickness under-reporting, developed with DfID funding, showed that the major impact of sleeping sickness was due to deaths of people that were never examined, diagnosed or treated. This sleeping sickness detection problem was compounded by the widespread occurrence of HIV-AIDS. The patterns of under-reporting showed that case detection was much poorer away from health facilities that were able to diagnose and treat sleeping sickness. This has important implications because some of the highest areas of risk of new infections around swamps and bushlands are distant from health facilities. Case reporting was also poorer in new sleeping sickness areas (Soroti District). Thus, improving the distribution of health facilities able to diagnose and treat sleeping sickness and enhancing their outreach capacity will be important in reducing the hidden burden of unreported cases, all resulting in death.

### **3. Control strategies for human and animal trypanosomosis**

This project emphasized the community role in human and animal trypanosomosis control within a broader, largely public sector, medical and veterinary disease control context. An important opportunity in this project was to link research activities to the FITCA-Uganda project, a large-scale public sector trypanosomosis control program.

Under the FITCA-Uganda project, a survey of animal trypanosomosis was conducted in 165 randomly selected villages across south-eastern Uganda. The design of this survey was supported by the project. Based on this survey of infection status in the cattle populations and available information on sleeping sickness cases, priority zones for trypanosomosis control were identified. FITCA project activities (tsetse control, communication on sleeping sickness diagnosis and treatment, mass treatment of cattle, etc.) have been targeted to areas with highest sleeping sickness risk and with highest prevalence of animal trypanosomosis. It will be important to assess the impact of the FITCA control activities, particularly as the focal

areas of sleeping sickness and animal trypanosomosis transmission are in some cases relatively small and not well identified by the prevalence survey study.

Community control of disease risk requiring collective action has only limited options. Communities were and are most likely to contribute to community spray race for tsetse control. These also have benefits for tick control. Otherwise, communities have other priorities and are only interested in sleeping sickness at times of highest risk. Organized distribution of trapping and mass treatment in high risk areas seems to need public support. The willingness of individuals within different community circumstances is being studied with CAPRI funding. This study will be completed in late 2004.

Livestock movement was linked to the spread of sleeping sickness to new areas. Control measures, such as treatment of cattle before movement could reduce this risk but there is strong demand for restocking of livestock into areas where *T. brucei rhodesiense* could become established. As cattle are the main reservoir of human-infective trypanosomes, mass treatment is a good option for limiting epidemics. Control and treatment of disease in humans is more problematic.



## **FULFILLMENT OF OBJECTIVES (from proposal)**

### **1. To establish relationships between attributes of natural resource endowment and use and the risk of human and animal trypanosomosis, both temporally and spatially.**

The risks of both human and animal trypanosomosis have been assessed spatially.

Human trypanosomosis case data from 1986 to present were used to assess prevalence relative to geographic data such as vegetation type (swamp margins and bushland had highest risk). Diagnosis was most strongly influenced by proximity to treatment centres. Variations in the distribution of sleeping sickness cases over time were also assessed. Publicly-supported tsetse control campaigns did reduce the risk over time. Also, the introduction of human infective parasites carried by cattle led to their establishment in local tsetse and cattle populations in favourable areas. A number of publications have been prepared (largely supported by DfID with a small amount of IDRC funding used for ILRI backstopping).

The project supported the planning and design of community tsetse and trypanosomosis surveys in 165 randomly-chosen (based on a geographic sampling grid) villages by the FITCA-Uganda project.

Based on human trypanosomosis case data and the animal trypanosomosis prevalence study, Ugandan government officers and the FITCA project developed intervention risk maps. Since early 2003, interventions are being tested in high human and/or animal trypanosomosis risk areas. Interventions include combinations of tsetse trapping, support for community spray races, mass treatment of cattle with short-acting trypanocides and improved information for communities. Researchers are assessing both the efficacy of these community-level interventions simultaneously with the household-level response to this (under the CAPRI project).

In an effort to build capacity for the targeting of scarce public control investments, ILRI has supported the Coordinating Office for the Control of Trypanosomosis in Uganda (COCTU) to

establish a Decision Support Unit for Trypanosomosis control with funding from IFAD. This unit will coordinate impact assessment of control efforts and targeting of best-bet interventions to high-risk areas.

The incorporation of natural resource assessment and use data has been much slower than originally envisaged. Input from the natural resource component was to be provided by the FITCA – EMMC (Environmental Monitoring and Management Component). This project has been greatly delayed in its implementation and only began work in the study villages in June 2003.

**2. To determine how communities assess their own agroecosystem and community health, what they consider to be the main factors (natural resource, social, etc.) contributing to poor health (as evidenced by poverty, mortality, etc.), what strategies they consider important to improve health and what indicators they would consider useful in assessing improvements.**

Considerable progress was made initially in having communities assess their own agro-ecosystems and community health and then to develop and implement action plans supported by sub-county teams. Invariably, communities, when given the opportunity, focused on broader health, educational and agricultural infrastructure, information and empowerment interventions. They identified weaknesses in local community-based and governmental institutions as key constraints (see year 1 annual report).

Communities struggled, largely due to lack of external support, in implementing their community action plans in year 2 of the project. At the end of year 2, support to the 6 intensively studied communities was re-evaluated and additional support was provided. Additional community workshops, to assess lessons learned and revise community action plans were held in all villages. Within these revised action plans, most communities identified community education and information as important issues and support was provided. In addition, specific efforts were made to backstop sub-county (LC3) teams to visit communities regularly. This met with less success than previous experiences in Kenya (see final report

(2001) of An Integrated Assessment of Agricultural Communities in the Central Highlands of Kenya (center file 003157-002)), This is probably a function of both a less experienced Uganda-based team and much weaker local institutions and community organizations to support interventions in south-eastern Uganda compared to central Kenya.

Health studies and indicators were well developed in the project, but as with objective 1, the delay in commencing the natural resource and land use research component was a major impediment to integrating community and researcher indicators – a key strength of our earlier Kenyan project cited above. While a constraint to meeting objectives in a 3-year project, the slower pace of project implementation in Uganda simply reflects the real differences in implementing an agroecosystem health approach in different settings with different stakeholders.

Only community-provided qualitative assessments of poverty were incorporated. These were not as rigorously pursued or monitored as in the Kenya study. The Ugandan Central Bureau of Statistics together with ILRI and other partners are involved in a broader poverty study in Uganda that should be completed in 2004. Broad initial trends show that the number of poor people, based on standard indicators, is reducing. This needs to be linked to targeted and gender- and age-disaggregated studies at village level.

**3. To assess which community- and researcher-developed natural resource, social and community health indicators have general utility across communities and regions and which indicators are location specific and to develop participatory community research and development approaches that support the implementation and improvement of natural resource-based strategies to improve health and reduce poverty.**

The combination of human and animal health indicators (number of cases, prevalence, tsetse abundance, etc.) developed and used by the FITCA project to target medical and veterinary interventions are likely to have broad applicability. However, this can only be properly assessed (and refined) in an iterative process based on an impact assessment of these interventions.

We have made specific efforts to use indicators from the initial village workshops as tools for one-day village workshops in 165 villages. If broadly applicable, they provide one strategy for investigating later scaling-up and scaling-out activities. The survey activities and tools used in the villages are described in Appendix 1 and a description of the training programme in Appendix 2. Many of these were pre-tested in a small survey of collective animal health interventions for tsetse control in 5 villages (Appendix 3). We will have a better idea of their broader utility after the large-scale village survey is analysed. This has been unavoidably delayed to the illness of Thomas Gitau, the collaborator responsible for this activity.

In terms of the extendability of the approach to other regions, as noted, there were differences in the pace at which the agroecosystem approach was implemented between the central Kenya and south-eastern Uganda studies. These were due both to differences in the study areas, particularly with respect to recent development history, and of the experience of the field research teams. However, initial experiences, that need to be confirmed over time, indicate that the approach had valuable impact in south-eastern Uganda (see Appendix 4 - Michael Bopp consultancy report to IDRC).

## **PROJECT DESIGN AND IMPLEMENTATION (as per annual reports)**

The annual reports for year 1 and year 2 are attached as Appendices 5 and 6. Activities envisaged for year 3 and the spilling over of activities beyond the 3-year project period were much as foreseen in the year 2 report. Four broad activities will be undertaken post-project. The first is the historical assessment of spatial and temporal trends in sleeping sickness and animal trypanosomosis risk to be conducted by Lea Berrang, a PhD student at the University of Guelph with contributions from 2 University of Guelph staff, Barry Smit and David Waltner-Toews. This is the only budget element for which a no-cost extension is requested. If agreed, unspent project funds would be used to support the visit of Barry and David to Uganda to support Lea's work in 2004. Lea's stipend is supported by the National Science and Engineering Research Council (NSERC) of Canada. The three other planned activities that are on-going at project end are (1) the analysis of the 165-village survey (due to the illness of Thomas Gitau) and the integration of natural resource and land use research indicators with community-based indicators (with results funded and coming from the FITCA-EMMC and FITCA-Uganda projects) and assessments of village and sub-county intervention studies (FITCA-Uganda and CAPRI studies). The FITCA and CAPRI studies continue through 2004.

The design of this IDRC-funded project, as part of a broader-basket of projects, while leading to some delays in implementation over the short-term, provides many more advantages, particularly in terms of sustainability and capacity strengthening compared to a stand-alone project.

## **PROJECT OUTPUTS AND DISSEMINATION**

Expected outputs from the project proposal included:

1. Qualitative and quantitative indicators of natural resource management, poverty and disease risk and impacts that have relevance for local communities and can also be used across communities and countries (end of Year 2).
  - disease risk and impacts indicators complete

- natural resource indicators on-going
  - community-provided poverty indicators should be linked at a later time with broader Uganda poverty studies
2. Mapping and systems analysis of associations between attributes of natural resource management, social indicators, human and animal trypanosomosis risk, and poverty across a spectrum of agro-ecological zones in south-eastern Uganda (end of Year 3).
    - mapping of human and animal trypanosomosis risk linked to natural resource factors and health infrastructure produced for south-eastern Uganda
    - broad-based indicators to be incorporated from other ILRI work by 2005
  3. Temporal and spatial analyses of historical trends in natural resource patterns, human and animal trypanosomosis risk, poverty, major events and their relationships over the past 40 years in this area (end of Year 2).
    - initial data by Martin Odiit – subsequent studies by Lea Berrang, University of Guelph PhD student in 2004.
  4. Simple models to predict poverty distribution, disease risk and natural resource management for targeting trypanosomosis control and other interventions to benefit the poor (end of Year 3).
    - capacity for a decision support unit to institutionalise this function within the Coordinating Office for the Control of Trypanosomosis in Uganda is being established (applicable for the whole country)
  5. Strategies, based on community and research analysis, to enhance natural resource management, reduce poverty and disease risk (end of Year 3).
    - to be incorporated into COCTU, FITCA and Uganda Government strategies. Awaiting information on natural resources and on impacts of interventions currently underway.

**CAPACITY BUILDING** (highlight gender or other marginalized groups under each section)

The project was designed with important capacity building elements that should support its longer-term impacts.

### ***Community and sub-county leadership teams***

As part of the on-going support to the 6 intensive villages, support in developing plans and promoting these to other stakeholders was provided. This aspect was less demanded than in the previous Kenya study and subsequent planned activities by FITCA in these and other villages intend to highlight leadership training in communities. A specific training workshop was held for sub-county extension teams in Year 1 of the project and these teams were supported in subsequent years. Women were specifically recruited into the sub-county teams and women trainers were used for training.

### ***Research Students***

One PhD student, Winnie Musoke, was specifically supported by the project. Winnie's field work is complete and she will complete her thesis subsequently, resources permitted. In addition, activities for two other PhD students were supported by the project. One was Martin Odiit whose studies were supported by DfID. The second was Lea Berrang. Both benefited from ILRI backstopping provided under this project.

### ***Institutions (LIRI, COCTU, FITCA/MoA)***

As noted, the activities of this project were closely linked to on-going activities of a number of Ugandan institutions. The project provided training for field personnel, support in the design and implementation of field research and support for database development and data analysis. Capacity has been established within COCTU for disease control decision-support activities.

## **PROJECT MANAGEMENT**

As noted in previous annual reports, the real strength of this project was in adding value to on-going projects and activities in Uganda. While this led to some delays in implementation, these were outweighed by the great benefits of supporting existing activities and institutions.

Based on the recommendations of IDRC consultant Michael Bopp, only received verbally (see year 2 report), we greatly increased support for community activities, holding community workshops at the beginning of year 3 to help communities assess their progress and revise their action plans; providing additional support to sub-county teams and additional support from Kenya for the Uganda community teams.

Frequent meetings among the different projects were held in Uganda under the broader FITCA-LIRI research programme. Despite this, there were some difficulties on coordination and support for field activities, particularly transport, during the project. It was originally anticipated that transport would be provided in Uganda, but often, ILRI needed to provide vehicles to facilitate field work. In future, it might be advisable to have a greater number of research-development agents, integrated into the field services involved in the project, rather than relying on a PhD student for day-to-day management. This was the case in our previous Kenya agroecosystem project but the success of that personnel strategy in that case was probably the exception rather than the rule.

## **IMPACT**

While additional longer-term impacts are expected, there have been three main impacts of the project to date.

The first is to develop and show the benefits of community-based participatory methods within the health and agricultural communities in Uganda. Capacity was developed in villages, sub-county and district teams and at national level in the FITCA, COCTU and Ministries of Agriculture and Health.



The second is to provide advice to policy makers on medical and veterinary interventions. These include strategies to control the spread of sleeping sickness to new areas in Uganda, strategies to improve the diagnosis and treatment of sleeping sickness to avoid human suffering and death and strategies, now being tested, to improve the sustainability of controlling human and animal trypanosomosis in high-risk target areas.

The third main impact is on decision support to disease control. Capacity has been improved for field studies, both participatory and survey-type, to provide quality information. Capacity has also been established for Ugandan institutions to use that information to support their decision making and within ILRI to better understand how to work innovatively with partners to achieve community and institutional research and development outcomes.

In the longer-term, we expect that natural resource and land use management information will be incorporated into this overall decision-making capacity at all levels from community to national.

## **OVERALL ASSESSMENT**

Overall the project has made an important contribution and fulfilled most of its objectives. Remaining objectives are currently being addressed as described above. The strength of the project was in building on a previously used agroecosystem approach in a new setting and in its strong linkages to on-going research and development activities in Uganda.

## RECOMMENDATIONS

1. We endorse the recommendations of Michael Bopp (see Appendix 6 – only received after the project completion date) in his report on IDRC ecosystem health project in East Africa. Funding permitted, we will seek to evolve the ecosystem health used in Uganda there and in other settings. While much can be accomplished in a 3-year project, subsequent community development and scaling-up and out phases require longer-term engagement.
2. We request a one-year extension from April 2003- March 2004 to allow field support from our University of Guelph collaboration to Lea Berrang, a University of Guelph PhD student, to better develop her study of spatial and temporal factors associated with sleeping sickness risk. This period would also allow for some additional support from Winnie Babirye Musoke in the analysis and write-up of her PhD thesis work.

## PROJECT PERSONNEL

1. Livestock Health Research Institute (LIRI), Tororo Uganda  
Martin Odiit – physician – sleeping sickness control
2. Makerere University, Kampala Uganda  
Winnie Musoke Babirye – PhD student , community studies  
Grace Bantebya Kyumohenda – PhD supervisor, Women and Gender studies  
Sam Mugasi – PhD student (associated CAPRI project)  
Dick Sserunkuuma – PhD supervisor, Agricultural Economics
3. University of Guelph, Canada  
Barry Smit – Department of Geography – project advisor  
David Waltner-Toews, Department of Population Medicine – project advisor  
Lea Berrang – PhD student on spatial diseases risk
4. University of Edinburgh, United Kingdom (through a collaborating DfID project)  
Sue Welburn – advisor to Martin Odiit  
Mark Woolhouse – advisor to Martin Odiit  
Eric Fevre – project advisor
5. Farming in Tsetse Control Area Project (FITCA), Entebbe, Uganda  
Chris Laker – project technical advisor  
Annah Muja Rutebuka – project sociologist
6. International Livestock Research Institute (ILRI)  
John McDermott – project coordinator  
Tom Randolph – project advisor

Robin Reid – project advisor  
Erastus Kang'ethe – advisor on community workshops  
Thomas Gitau – agro-ecosystem approaches



## Appendices

### Appendix 1

#### SEQUENCING OF VILLAGE SURVEY ACTIVITIES AND TOOLS

ACTIVITY	TOOLS	EXPECTED OUTPUT	PARTICIPANTS
<b>Mapping</b>	Mapping	Village boundaries, water resources, grazing areas, forests/thickets, Cattle dips/crushes, health facilities, cattle density, tsetse distribution, veterinary service providers, high prevalence of sleeping sickness/nagana, infrastructure (roads, church school, meeting centers, etc)	4 most knowledgeable people in the village. (2 men & 2 women)
<b>Trend Lines</b>	Focus Group Discussion	Human population movements within the last 40 years Animal population movements within the last 40 years Rainfall Vegetation	All gender
<b>Seasonal Trends</b>	Focus Group Discussion	Human and animal diseases generated during animal and human health constraints analysis Tsetse population distribution Mosquito population distribution Income variations – (peak, low, medium)	All gender
<b>Community Institutions</b>	Venn Diagrams  Ranking	Institutions dealing with human and animal health, crops, micro-finance, and CBOs, and farmer groups. Impact of the institutions in the village Relationship among the institutions	All gender
<b>Evaluation of Collective Action</b>	Focus Group Discussion  Proportional piling	Criteria for success Level of success Type of Organization Level of participation Percentage of beneficiaries	All gender
<b>Health Analysis (Human)</b>	Matrix Scoring	Constraints to human Health and production Coping strategies Opportunities Indigenous technical knowledge Comments	All gender and at least 2 human health service providers
<b>Health Analysis (Animal)</b>	Focus Group Discussion  Matrix Scoring	Constraints to animal Health and production Coping strategies Opportunities Indigenous technical knowledge Comments	All gender and at least 2 Animal health service providers
<b>Evaluation of community</b>	Focus Group Discussions	Programs Objectives	All Gender

<b>based animal health Programs</b>		Actors Resources Sources	
<b>Analysis of Wealth and social heterogeneity</b>	Focus Group Discussions  Matrix Scoring  Proportional Piling	Wealth indicators Proportional of households considered poor, Average & Rich Proportional of Male/Female headed households Proportion of households by religion Proportion of Households by Ethnicity	All Gender
<b>Analysis of tsetse control Methods</b>	Pair wise ranking  Focus Group Discussion	Cost Labor input Reduction in human disease Reduction in Animal disease Availability Effectiveness Preference	All Gender
<b>Evaluation of previous control programs</b>	Focus Group Discussions	Community perception of the successes and failures of previous control programs in the village	All Gender
<b>Evaluation of access to household Resources</b>	Focus Group Discussions	List of Household resources Identification of who has control and Access to the household resources	All Gender
<b>Analysis of information flow</b>	Focus Group Discussion  Proportional Piling	Sources of information Effectiveness of the source information Preference of the languages used	All Gender

## **Appendix 2**

# **REPORT ON THE TRAINING OF VILLAGE ENUMERATORS FOR COMMUNITY ACTIONS IN DISEASE CONTROL AND NATURAL RESOURCE MANAGEMENT, HELD ON 12<sup>TH</sup> – 16<sup>TH</sup> AUGUST, AT LINKWAY BUSINESS SCHOOL, TORORO, UGANDA.**

## **PREAMBLE**

The Community Actions in Disease Control and Natural Resource Management in Uganda are concerned with understanding and formulating interventions to alleviate constraints in human and animal health in twelve Eastern Districts of Uganda. In these districts both government departments and non governmental organizations are involved in efforts to control of sleeping sickness in humans and Nagana in cattle.

FITCA needs to understand how communities living in these districts are engaged in a participatory manner in elucidating the constraints as they see them because it is them who live with the problems and therefore, are the best experts to discuss and offer approaches to the constraints. The notion of community participation in this context means joint analysis of the constraints; suggest opportunities that can be harnessed in developing strategies to alleviate the constraints. This ensures that the communities will own the process and its outcomes. It is imperative that FITCA understands also the community's social and economic institutions and linkages within and without that have high collective action success rate which could be strengthened in order to bring about developmental changes in these tsetse controlled areas.

In order to achieve this, village surveys are planned and the enumerators for these surveys needed to be trained in participatory methodologies so as to standardize data collection and above all help to build capacity in FITCA district teams.

## **PARTICIPANTS**

The participants came from the 12 districts covered by the project namely: Mukono, Jinja, Iganga, Palisa, Busia, Mayuge, Soroti, Mbale, Kamuli and Bugiri. They were of different professions: - Veterinarians, Agriculturalists and Entomologists. Each district had four participants with the exception of Tororo and Mbale which had three and two participants respectively.

## **FACILITATORS**

Four facilitators participated in the training exercise namely, Ms Winnie Babirye Musoke, Annah Muja Rutebuka, Erastus K Kang'ethe and Catherine Barasa. Winnie and Annah are working with IDRC/CAPRI and FITCA respectively, while Erastus and Catherine were consultants to the training workshop.

## **DEVELOPMENT OF TRAINING MATERIALS AND WORKSHOP ORGANIZATION**

In recognition that some the participants may have had no experience in PRA methodologies, the first three facilitators developed training materials covering the selected tools which would be used for the data collection. These tools selected were to help generate data on community resources, animal and tsetse fly distributions, important changes over time and seasons in regard to human activities and major diseases, community institutions, animal and human health analysis, community collective action, community based animal health programs, wealth and social heterogeneity, tsetse control methods, access and control of household resources and information flow (see Annex 1, sequencing of village survey activities and tools).

Brief lecture materials relating to each area were developed and given to the participants during the registration exercise. In material development the goal was to cover the purpose and the application of the tool, while the methodology of using the tool was dealt with in the lecture (see Annex 2, training materials). It was also necessary to focus the expected outputs to suite FITCA. All the lectures were accompanied by a practical session in groups of four while drawing district maps or twelve during all other activities. Each practical activity lasted at least one hour. This provided the participants with an opportunity to apply the knowledge learned and also to get assistance in clarifying some issues by the facilitators. Equally after every activity, evaluation by the evaluator (Ms. Catherine Barasa) was done in an effort to correct the mistakes that may have occurred and therefore help put all the participants on an equal footing (see Annex 3- workshop Programme).

On Thursday, 15th August, the participants also had a chance to pre-test the tools using community members from four villages (Aburi, Kaspondo, Abwanget and Ngelechom of Osukuru Sub County, Tororo) around LIRI. This offered the participants the opportunity see how they are likely to perform in the actual villages in terms of time and phraseology of the questions. It also offered the facilitators the best chance to see what problems could arise in dealing with the field data sheet modeled to correspond with the computer data base to be used later during data analysis (see Annex 4 – field data sheet format).

## **WORKSHOP CONSTRAINTS**

1. The duration of the workshop was not adequate to cover all the materials in depth. A five day workshop would have been adequate. The lectures were given only 15 minutes so as to have all tools and activities covered by the end of the second day. This has its own problems of rushing through the materials hoping to fill in the gaps during the activity sessions. The participants without prior experience in PRA tools were definitely disadvantaged while those with prior exposure may have felt that enough ground was not covered.
2. Transport during the 10 days of workshop organization and running was a problem since no vehicle was set aside for the workshop organizer. Special hire had to be done to transport the participants to the village sites.

## **THE WAY FORWARD**

1. In future, this type of the workshop needs to be held over a period of at least five days in order to cover the materials in depth and still offer adequate time for practical sessions.



2. Transport for the supervisors should be provided in order to facilitate their supervision and collection of quality data. This is as a result of the facilitators having no formal transport during the organizational and training session of the workshop, a scenario that could be easily repeated during data collection and supervision.
3. The tendency for skills learnt to be forgotten increases with time between learning and application. It is important therefore the time lag between this workshop and village surveys be as short as possible.
4. In order to be assured of the quality of the data collected, there is need for supervision or backstopping person. Considering the number of personnel available (Winnie and Annah), more personnel are needed to help cover the 12 districts with differing number of villages. There is need to maximize backstopping at district level and also at the national team. District team composed of the District Entomologist, Agricultural Officer and Veterinary Officer be mobilized to assist the National team.
5. In light of the new tool added (seasonal trends) which was not covered during the workshop, instructing of the enumerators before the start of the exercise is necessary. This could be done on the first day of the exercise in most districts, except Mbale and Tororo where additional two days are needed.
6. Data collection in the villages should start in staggered fashion to accord the National backstopping team to instruct the enumerators on the way to handle the new tool. I suggest that the district with the highest number of villages (Mukono) to be the one to start followed by the next in that order. This procedure will offer the backstopping teams chances to visit the enumerators at least twice during the data collection in each district.
7. I do **not** consider pre- testing the tools again necessary since the tools have been pre-tested by the research team and by the enumerators. The new tool introduced later is no different in terms of handling and time it would take from the time line tool it replaced, the one that the enumerators had pre-tested during the village activity.
8. The two districts of Tororo and Soroti where the invited number of enumerators did not all come to the workshop, special arrangements are need if they are to start the data collection at the same time as the other districts. It would require at least three days to instruct these enumerators on the PRA tools to be employed. Arrangements for such training should be in place before data collection starts in earnest.

## CONCLUSIONS

The workshop was a success and it is hoped the participants gained from attending and will be valuable collaborators in the data collection and any other exercise that this project may choose to engage them in, on participatory assignments. The workshop could have been enriched if manuals on tested methodologies were available for the participants to take away, which they could fall back on in later engagements. FITCA could consider developing such materials focused to its objectives. More crucial for the data collection exercise which occasioned holding this workshop, is the follow up of the enumerators to ensure quality data is collected. It is important that backstopping teams, at District and National level be involved in the supervision.

***THIS REPORT IS PREPARED BY PROF. ERASTUS K. KANG'ETHE.***  
***August 22<sup>nd</sup> 2002.***

## **Appendix 3**

### **The establishment of self-organized animal health services in villages in Mukono District, Uganda: village characteristics and priorities**

**Annah Muja Rutebuka, Winnifred Babirye Musoke, Thomas Gitau, John McDermott**

#### **1. Background**

Animal health services comprise a mix of public and private goods (Holden, 1999). The integrated control of trypanosomosis can rely on a mix of private goods, such as chemotherapy, public goods such as tsetse traps, targets and area-wide control and mixed public-private goods such as chemoprophylaxis and pour-on insecticides (McDermott et al., 1999). Community-based programmes for tsetse control have received considerable support over the years, mainly because most individual farmers will be unsuccessful in limiting tsetse by themselves and need to act collectively.

This rationale makes community-based tsetse control a logical strategy; however, such community-based programmes have invariably failed. Some have failed initially due to poor participation while others have failed to sustain themselves with the withdrawal of external logistical and financial support. (References – Barret and Okali, 1998, Brightwell et al., 2001 and various others.)

One approach to investigating strategies for establishing viable community collective actions for animal health is to identify the few villages that have successfully implemented and maintained programmes and to understand the factors associated with these successes. In this study we seek to compare the characteristics and features of villages who have implemented, with support from a private-sector company, spray races and compare these to neighbouring villages that have not.

#### **2. Community spraying programme in Mukono District**

The idea of communal spraying was conceived by Cooper (U) Ltd a company dealing in veterinary drugs and based in Kampala. According to Mr. Buzabo, the sales representative of the company, they came up with the idea because spraying communally is easier to manage and more sustainable as compared to dipping which is the next alternative. Working with the District Veterinary Officer of Mukono and the veterinary extension worker based at Kasawo Sub County, farmer's workshops were held in various place in the sub county. Farmers were given basic knowledge on diseases and disease control with an emphasis on communal spraying to control ticks and tsetse and stomoxys flies.

Working closely with the veterinary department of Mukono District, Cooper (U) Ltd set up various village committees composed of farmers to oversee the implementation of communal spraying in their various villages. Cooper (U) Ltd promised to donate 1 litre of Decatix to each farmers group that finished construction of a spray race / crush that was approved by a local veterinarian.

Approximately 17 villages have constructed these and have received 1 litre of Decatix. The District Veterinary Department has provided technical support to farmers and has also provided a spray

pump at Kasawo subcounty headquarters that can be borrowed by villages. In addition, Kakira village has its own donated spray pump. A map of Mukono District and Kasawo and Seeta subcounties is shown (Figure 1).

Farmers' associations in participating villages formed voluntary "crush" committees comprising a chairman, treasurer, secretary, advisor and a few additional members. These committees are charged with ensuring that farmers contribute in implementing the communal activity. There is no gender segregation when choosing members of the association or members of the committees.

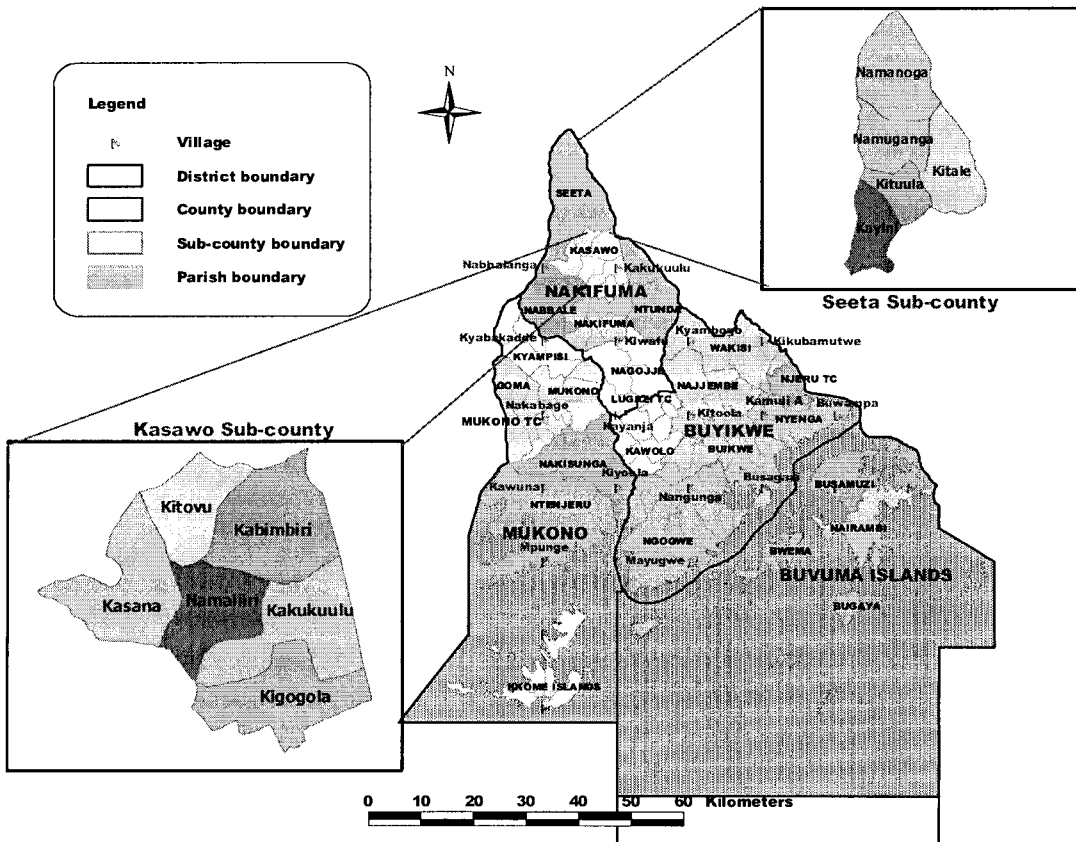
Farmers in the implementing villages contributed labor and other inputs required to construct the crush, and where necessary farmers contributed a little money to pay for items like nails. Informal rules have been put in place to govern the crushes. Most rules put in place generally concern the following:

1. The days when the farmers bring their cattle for spraying
2. The amount of money paid per head (ranges between Ushs. 200- Ushs 500). This money is paid by the farmers to ensure sustainability. In case the drug is used up they can afford to buy more drug or incase the pump is spoilt they can afford to pay for repair.
3. The amount of water each farmer contributes.
4. Sharing of labor.
5. Days when farmers hold their association meetings.
6. Action against farmers who do not attend farmers meetings.
7. Action to be taken against farmers who do not bring their livestock for spraying.
8. Maintenance of the crush (slashing, repairs etc)

Note; these rules vary from village to village.

The Farming in Tsetse Controlled Areas of East Africa Project, FITCA, (Uganda Component) has provided subsequent support to this community-based spraying programme in Mukono District. One of FITCA's objectives is to encourage community participation in tsetse control. The FITCA project has used the opportunity of the existence of the community animal health programme in Mukono to promote community involvement in tsetse control and improvement of livestock health. The FITCA project is currently working with farmers and Mukono District staff to promote the activity. So far, FITCA has supported the farmers by providing Decatix to the farmer groups that were already implementing the communal spraying and the project is in the process of considering how extra infrastructure can be supplied to other villages, both in Mukono and other districts in South Eastern Uganda where FITCA is implementing its activities.

**Figure 1. Map of Mukono District showing its location in Uganda and also the study villages (implementing and non-implementing)**



### 3. Rapid appraisal to comparison villages that have implemented and not implemented the community spraying programme

### 3.1 Selection of implementing and non-implementing villages

Although all the villages in Kasawo and Seeta subcounties were exposed to the same information about communal spraying during farmers' workshops, some villages adopted and some villages did not adopt communal spraying. A rapid appraisal study was conducted to compare characteristics of implementing and non-implementing villages. From the 17 implementing villages in Mukono, 4 were selected. Four neighbouring villages that have not implemented communal spraying were chosen as a comparison group.

### **3.2 Organization of village workshops**

The Mukono district veterinary extension worker based at Kasawo sub county headquarters mobilized participants for the village workshops with the assistance of the local council chairman. Appointments were made with the participants who were asked to select a venue convenient for them.

Workshops were conducted in the afternoon because it was assumed that the participants would have completed at least most of their daily cores. The selection of the participants was made in a way to make sure that a wide range of opinions was received. The selection included, 2 elderly males, 2 elderly Females, two men, 2 women, 2 youth, 4 farmers 2 representatives from the local council one and two opinion leaders in the village. The workshops were conducted in the local languages. This was done mainly because the majority of the participants could neither speak nor understand English or any other language. Conducting the workshops in the local languages understood by the majority of the participants made it easier for the participants to participate with confidence. The workshops were facilitated by a team including 2 sociologists, an entomologist and a veterinary extension worker.

### **3.3 Village survey tools**

To attempt to understand why some villages are successful and organizing and implementing their own animal health services we wish to compare 4 villages that have self-implemented these services to 4 neighbouring villages that have not. The village-level indicators used to compare villages are listed in Table 1.

At the beginning of the session the participants were asked to give a brief background of the villages farming activities with particular emphasis on the community based animal health program activities. Then 2 of the oldest men in the village and 2 of the oldest women in the village were asked to participate making the historical background of the village. The participants chose among themselves members who were very familiar with the village and its boundaries to draw the village maps.

During the rest of the workshop all other members participated in ranking and other prioritization tools. Ranking was done using the Pair-wise ranking tool. Items to be ranked were first listed on cards. Every item was compared with each one of the others in the list. The item selected in each of the pair-wise comparisons was given a mark. The score for each item was used to generate the rank. Proportions were estimated using the proportional pilling technique. In this tool, participants were provided with pebbles and asked to place them into piles based on the perceived proportional distribution among the categories. The number of pebbles used in the piling exercise was calculated as the number of categories times three. For the Venn diagram tool, participants generate a list of institutions and individuals perceived to be responsible for decision-making in the village. These are listed on circles cut-out from paper to represent each institution or individual. The diameter of the circle indicates perceived relative importance – the larger the circle, the more important the person or institution (Rietbergen-McCracken and Narayan, 1998). One circle of average size is used to depict the village and its community and serves as the reference point in the diagram. The rest of the circles are then arranged around this central point with regard to the degree of information sharing and collaboration among them. Separate circles indicate perceived absence of information sharing and collaboration. The distance between circles is proportional to the relative

degree of separation of depicted institutions. Touching circles indicate that some information is shared between depicted institutions. Overlapping circles denote co-operation between institutions, the extent of overlap being indicative of the relative degree of co-operation.

**Table 1. Participatory tools used in village survey**

<b>Type of information</b>	<b>Participatory tools</b>	<b>Expected outputs</b>
Historical background of the village	Time and trend lines	1. Major events (from 1930) 2. Movement of people 3. Major diseases
Community institutions	Venn diagrams	1. Institutions in the village 2. Ranking by impact in the village 3. Relationships among institutions
Collective action	Pair-wise ranking	1. List of most recent collective activities 2. What is the criteria for success 3. Ranking of collective activities by degree of success 4. Ranking by level of participation 5. Ranking by Percentage of beneficiaries
Wealth and social heterogeneity	Wealth ranking Pair-wise ranking Proportional piling	1. Proportion of female-headed and/or male-headed households 2. Definition of female-headed ( <i>de facto</i> and/or <i>de jure</i> ) 3. Households by religion 4. Criteria for wealth ranking 5. Proportion of households perceived to be poor, average and rich
Analysis of animal health	Pair-wise ranking	1. Ranking (reduced productivity) of animal health constraints 2. Listing of coping strategies to animal health constraints
Analysis of disease control measures	Pair-wise ranking	1. Ranking of methods by cost, labour input, availability, effectiveness in reducing incidence of animal disease 2. Preference in control methods 3. Perception of previous control programs
Analysis of community-based animal health programmes		1. What animal health programme activities exist in the village? 2. Who does them? 3. For what reason? 4. What resources are used? 5. Where do the resources come from?

#### **4. Characteristics and participatory results of implementing and non-implementing villages**

Tables 2-7 summarize the characteristics, village institutions, experiences in collective action, and animal health constraints and coping strategies for each of the 4 implementing and non-implementing villages.

The number of different institutions associated with each village and whether they were based internally, externally or both (i.e. internal and external = overlapping) are summarized in Table 3. The major differences between implementing and non-implementing villages that can be noted are associations with central government institutions and projects. Implementing villages had 17 such links while non-implementing villages had only 5. To overcome this lack of central government linkages, non-implementing villages had more community-based institutions, 21 versus only 11 in implementing villages. Interestingly, while central government links at village level were associated with implementation, villagers were not convinced of their impact. Table 4 summarizes the impact ranking of different village institutions. In general, government institutions were considered to have lower impact than NGOs. This relatively low ranking of government institutions needs to be more carefully followed up as it has implications for how community-based animal health interventions should be initiated developed and supported.

Another major finding was that implementing villages had more experience in implementing collective actions than non-implementers. In total, including the communal spraying, the 4 implementing villages had worked together on 12 collective projects while non-implementing villages had worked together on only 4. There were no obvious differences in the perceived success of previous collective actions between implementing and non-implementing villages.

Interestingly, there seemed to be no major differences in the relative ranking of animal health constraints (Table 6) or in the characteristics perceptions of coping strategies adopted to counteract these constraints (Table 7) between implementing and non-implementing villages. For both groups of villages, vector-borne diseases had the same relative ranking and there were similar perceptions on the relative ranking of spraying versus herbs and drugs (either administered by vets or farmers).

In summary, it appeared that organizational features rather than disease perceptions influenced the adoption of the communal spraying programmes.



**Table 2**

**Characteristics of villages that have and have not implemented community-based animal health programmes**

Village characteristics Need to specify	Proportion of villages with characteristic or mean value of variable	
	Implementing	Non-implementing
Population		
Population density		
Distance from main road		
Religion		
Poor		
Women		

Table 3

Comparison of village institutions and their location (internal to the village, external to the village or overlapping – both internal and external) between villages that did and did not implementing a community-level animal health programme.

InstitutionType	Implementing <sup>1</sup>										Not implementing												
	Kakira		Bwegiire		Nakiduduma		Nasejobe		Kakoge		Kitegula		Kituula		Mindi								
	E <sup>2</sup>	O	I	E	O	I	E	O	I	E	O	I	E	O	I	E	O	I					
Central government	2			2	2	1		3		1	1					1							
Government Project	1			2		2		1						1			1						
Local government		1	1	2	1	1		2	1		2		1	2		1	1	1					
National Association	1																1						
NGO	1	1	1							2	2						2						
Community based	1		4	1		3				1	1	5		4	2	1	3	4					
Individual			1		1				1					1									
Private sector		1	1	1		1		1			1												
Total	6	3	8	9	0	7	5	0	5	6	0	2	7	1	5	5	0	6	5	4	6	0	5

<sup>1</sup> External/Overlapping/internal

<sup>2</sup> E=external ; O=overlapping ; I=Internal

Table 4

Comparison of institutions between 4 villages implementing and 4 villages not implementing a community animal health programme in Mukono District, Uganda – perceived impact and median number of linkages for different types of institutions

InstitutionType	Implementing												Not implementing											
	Kakira			Bwegiire			Nakiduduma			Nasejobe			Kakoge			Kitegula			Kituula			Mindi		
	L <sup>3</sup>	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
Central government	2			2	1	1	1		1			3	1			1			1			1		
Government Project	(2)			(0.5)	(1)	(1)	(0)		(0)			(3)	(0)			(0)			(0)			(0)		
Local government	1			1	1							1							1					
	(2)			(0)	(1)				(11)			(2)							(1)			(2)		
National Association		1	1	1		2			3			1				2			2			1		1
		(1)	(3)	(0)		(6)			(8)			(3)				(3)			(11)			(0)		(1)
National Association	1			1																		1		
NGO <sup>4</sup>		(0)		(1)																		(0)		
			3													2			2					2
			(1)													(2)			(0.5)					(5.5)
Community based	1	2	2	2		2			1					2	2	3	1	1	2	4	1	1		2
	(0)	(0.5)	(6.5)	(0)		(0.5)			(0)					(2)	(1)	(3)	(1)	(0)	(6)	(1)	(0)	(1)		(0.5)
National Association		1		1																		1		
Private sector		(0)		(1)																		(0)		
	2	2			1				1			1	1						1					
	(0)	(11)			(2)				(2)			(1)	(2)						(2)					
Individual			1			1						1							1					
			(0)			(1)						(1)							(0)					
Total	4	7	7	8	3	6	1	2	7	1	0	7	4	2	7	3	1	7	7	1	2	3	4	5
	(4)	(1.5)	(22)	(2.5)	(4)	(8.5)	(0)	(1)	(21)	(0)		(10)	(4)	(1)	(8)	(3)	(0)	(18)	(5)	(0)	(1)	(0)	3.5)	(8)

<sup>3</sup> L=low impact ; M=moderate impact; H = high impact.

<sup>4</sup> Non-governmental organisations

Table 5

Comparison of perceived success, participation rate and proportion of beneficiaries for past collective actions by villages that have implemented and not implement community-based animal health programmes in Mukono District.

	Implementing												Non-implementing											
Action	Kakira			Bwegire			Nakiduduma			Nasejobe			Kakoge			Kitegula			Kituula			Mindi		
	S <sup>5</sup>	P	B	S	P	B	S	P	B	S	P	B	S	P	B	S	P	B	S	P	B	S	P	B
Emergencies										16	18	18	15	10	10							16	13	18
Road Const.							11	6	17													8	5	18
Spraying	18	16	17	19	16	19	19	16	17	16	10	18												
Schools	8	6	15	8	7	16																		
Vaccination	20	20	20																					
Water	11	6	19	9	6	19							15	13	18									

<sup>5</sup> S=rank of success; P= rank of level of participation; B= rank of percentage beneficiaries

Table 6

Constraints to animal health and productivity and ranking of their relative importance by village (1 is the most important constraint and 7 the least important)

	Implementing				Non-implementing			
Constraint	Kakira	Bwegiire	Nakiduduma	Nasejobe	Kakoge	Kitegula	Kituula	Mindi
Nagana (tryps)			2	1	6	1	2	2
E.C.F (ticks)	5	1	1	2	6	1	1	1
Poor breeds	2	1			3	3		
New castle disease	1			5			4	5
Swine fever	4	3	3	4	5	4	5	4
Worms	3	4		3	3	4	2	3
Nuisance flies		7	3		3	4		
Lack of adequate pastures	6	6	5		7	8		
Water for livestock		4				7	6	

Table 7

Ranking of characteristics of animal health control methods by focus groups in implementing and non-implementing villages in Mukono District (1 is the worst and 4 is the best )

Control Methods	Characteristics of method	Implementing				Not implementing			
		Kakira	Bwegiire	Nakiduduma	Nasejobe	Kakoge	Kitegula	Kituula	Mindi
Spraying	Availability	4	3	4	4	2	4	2	2
	Cost	3	2	3	3	2	3	3	2
	Effectiveness	4	2	4	3	3	4	2	3
	Labour	3	1	3	3	1	1	3	2
	Preference	4	2	4	4	3	4	3	3
Herbs	Availability	1	1	3	1	4	1	3	3
	Cost	4	4	4	4	4	4	4	4
	Effectiveness	1	1	1	1	1	1	1	1
	Labour	4	4	4	4	4	4	4	4
	Preference	1	1	1	1	1	1	1	1
Drugs by farmer	Availability	3	4	1	3	3	2	4	4
	Cost	1	3	2	1	3	1	2	3
	Effectiveness	2	3	3	2	2	3	3	4
	Labour	1	3	1	1	3	3	1	3
	Preference	2	3	4	2	2	2	4	2
Drugs by vet	Availability	2	2	2	2	1	3	1	1
	Cost	2	1	1	2	1	2	1	1
	Effectiveness	4	4	4	4	4	4	4	4
	Labour	2	2	2	2	2	2	2	4
	Preference	3	4	4	3	4	3	2	2

## 5. Constraints to implementation mentioned by non-implementing villages

During the village workshops villages not implementing the communal spraying provide a number of reasons for non-implementation. In the villages where farmers share the same spray pump they find it very tiresome and inconveniencing because they have to go to collect the spray pump from the sub county headquarters whenever they need it. A pump used communally cannot be reliable. This was expressed at Kakoge village workshop. In some other villages, failure to start the community-based program was attributed to poor mobilization of the farmers. This was expressed in at least all the four villages that were visited and are not implementing the program. Mr. Buzabo of Cooper (U) Ltd noted that in each village that is implementing the program successfully there is a good measure of mobilization by one or more individuals. Farmers themselves admitted that they're some farmers who are more committed to this program than others.

In all the four implementing village the contribution made by the chairmen of the crush committees was acknowledged. All the chairmen contributed plots of land where the crushes were constructed.

Another issue that was raised was the issue of ownership of the plot where the crush is constructed. Farmers in Kakira were very reluctant to start the program because they had no security over the plot. The chairman of the farmers association donated the plot to the farmers with all the documents signed and witnessed, the farmers now feel more secure to invest in the plot. Some farmer groups like in Kituula, Mindi and Kitegula complained that they had not had as much assistance to start off as other villages. They needed to be assisted with at least a spray pump and at least some drug to start with and the rest they could provide for themselves.

There is considerable similarity between the detailed reasons for non-implementation of communal spraying for villagers in the non-implementing villages and the results of the village rapid appraisal surveys. It appears that relatively small resource and organizational constraints can block the implementation of a communal action such as spraying. The perceptions of the community on how important diseases are and what might be done about them appears to be of lesser importance. Thus, while impact assessment will be important for government priority setting, once priorities such as trypanosomiasis are established, more attention should be paid to the process of supporting community actions. While the role of government and private sector in initiating the communal spraying is noted, this rapid appraisal can say little about the ultimate sustainability and impact of such a communal action. As noted in the introduction, sustainability has been a major problem with collective actions, which require cooperation that can be difficult to sustain in the longer term.

## References

- Holden S. 1999. The economics of the delivery of veterinary services. *Revue Scientifique et Technique Office International des Epizooties* 18:425-439.
- McDermott J J, Randolph T F and Staal S J. 1999. The economics of optimal health and productivity in smallholder livestock systems in developing countries. *Revue Scientifique et Technique Office International des Epizooties* 18:399-419.
- McLeod A and Wilsemore A. 2001 The delivery of animal health services to the poor: a review. Appendix 9. In: Perry B D, Randolph T F, McDermott J J, Sones K R and Thornton P K. 2001. Investing in Animal Health Research to Alleviate Poverty. ILRI (International Livestock Research Institute), Nairobi, Kenya, 125 pp (plus appendices).
- Swallow B M. 2000. *Impacts of trypanosomiasis on African agriculture*. PAAT Technical and Scientific Series, No. 2, FAO, Rome, 52 pp.





**Interventions and Impacts: *A discussion of critical issues  
connecting development research and practice.***

Selected excerpts from an evaluation of  
interventions and impacts of three ecohealth  
projects in Central and East Africa prepared for  
the International Development Research Center  
(IDRC), Ottawa, September 2002.

***Prepared by:***

**Dr. Michael Bopp, Ph.D.**

The Four Worlds Centre for  
Development Learning  
Box 395, Cochrane, AB  
Canada T4C 1A4  
Phone: (403) 932-0882

Fax: (403) 932-0883  
Email: [fourworlds@telusplanet.net](mailto:fourworlds@telusplanet.net)



## PART I: INTRODUCTION

The primary objective of the Ecosystem Approach to Human Health Program Initiative is to conduct research focused on improving human health through more effective management of stressed ecosystems within which human beings live and work. The Program Initiative originally described the goal as follows:

*to improve human health by supporting transdisciplinary research on the structure and function of stressed ecosystems on which people depend for their lives and livelihoods and by applying this knowledge to the development of appropriate intervention strategies,*

and more specifically,

*to improve human health and well-being while simultaneously maintaining a healthy ecosystem based on ecosystem management rather than health intervention alone.*

(from the Ecohealth program “Prospectus”)

In practice, the Ecosystem approach can be understood in terms of four inter-related research activities:

1. to systematically describe the agro-ecosystem and natural world dynamics related to the focus of the research or, in other words, to “map” the ecosystem;
2. to systematically describe the social systems and their dynamics as they interact with the ecosystem and the research problematic;
3. to design “solutions” that will address the human health problems at the center of the research; and
4. to test those solutions through effective interventions carried out within the socio-ecological context of the study.

From these general objectives and processes, it becomes abundantly clear that the ecohealth approach is expected to produce tangible impacts and outcomes, both in terms of improved human health, and in terms of more effectively managed ecosystems. Whether or not, and to what extent this happens in any given research context often depends on the actions of a multiplicity of stakeholders, ranging from farmers, households and communities to regional, national and even international institutions, managers and policymakers.

As the Ecosystem Approach to Human Health Program Initiative enters its second four-year funding cycle (2002), much has already been learned about how to

help funded research projects to effectively engage in the first two core research activities described above (namely mapping the socio-ecological context and problem dynamics related to the research questions).<sup>6</sup> The methodological pillars of the Ecosystem Approach, including transdisciplinarity, participation, and gender have presented both challenges and remarkable opportunities to many of the ecohealth initiative's funded research projects.

One of the key findings of a recent evaluation on core ecohealth methodological issues<sup>7</sup> was that it takes most research teams almost all of the first 2 – 3 year initial funding cycle to learn how to work effectively as a transdisciplinary team, and to develop an effective participatory component to their inquiry process. Indeed, simply mapping the socio-ecological dynamics related to the research problematic has proven to be a major challenge to many projects. That evaluation recommended that the Ecohealth Program Initiative needed to consider second phase funding, simply because a single 2 – 3 year funding phase does not allow enough time (in many cases) for research teams to move beyond the initial step of developing a systematic understanding of the socio-ecological dynamics related to the research problem, to the ultimate goal of the research, which is the development of solutions and their testing through viable interventions. It is now apparent that the long range intended outcomes and impacts of many ecohealth research projects are (often) not fully developed until sometime during the second funding phase, which usually occurs in year three or four of the life of the project. This seems to be particularly true related to the testing of interventions, which presents a serious logistical problem for research managers.

Development related research institutions and programs worldwide are increasingly being faced with demands from their funders and development implementers to show the (development related) impacts and outcomes of their work, often in timeframes that are simply too short to be able to provide tangible “results”. This is the case across the entire C.G. system, and it is also true of research programs within IDRC, including ecohealth.

---

<sup>6</sup> See “Transdisciplinarity and Participation: An Evaluation of Transdisciplinarity and Participatory aspects of the IDRC Ecosystem Approaches to Human Health Project Initiative” Final Report (February 2001) prepared by Michael Bopp, Ph.D., Four Worlds Centre for Development Learning.

<sup>7</sup> Ibid.

## The Scope of the Study

The focus of this study is an assessment of the interventions and impacts of three ecohealth projects in central and east Africa.

The purpose however, was not only to evaluate these three projects *per se*, but also to explore the issues and challenges related to designing solutions and testing them through effective interventions. As soon as an ecohealth research team engages stakeholders (at any level) in consultation about the research problematic, an intervention has been made, and very likely, there is already some impact. People's thinking is already beginning to focus on the problem in new ways, and very often institutional and community stakeholders are moved to take action, (typically) long before professional researchers are prepared to suggest anything.

The evaluation questions guiding this study (provided by the Centre) focused on the following areas:

1. the impact of the Ecosystem Approach on finding viable and sustainable solutions to human health problems that are rooted in the management of the ecosystem and its natural resources;
2. the influence of the Ecosystem Approach on professionals and on institutions working in related areas to the types of problems the approach is designed to address;
3. tools and methods developed or adopted by stakeholders as a result of the research process; and
4. the nature and impact of various interventions undertaken (or anticipated) by the three selected research projects reviewed for this study. All of these questions are aimed at demonstrating the impact of the Ecosystem Approach to Human Health Program Initiative. (See Appendix A for detailed questions).

A primary challenge inherent in these evaluation objectives was described earlier. In the case of most ecohealth research projects, it takes 2 – 3 years of activity for the researchers to learn how to function as a transdisciplinary team and to gain experience related to effectively engaging stakeholder groups (including community stakeholders) in participatory research processes. The initial product of this first phase of learning is usually a reasonably useful “map” of the socio-ecological context, and

possibly some researcher-designed technical solutions to address the core research problems.

However, a technical solution, no matter how elegant, is not an intervention. It is an hypothesis. It still needs to be tested and refined in the real-world context of the research, and this can almost never be accomplished except in collaboration with intended beneficiaries and other stakeholders through processes that almost always require adjustment and refinement of the original technical solution.

Put simply, all three of the projects selected for review for this evaluation are too early on in their respective project cycles to reasonably expect matured intervention and impacts as described in their long range project objectives.

Does this mean that it was not possible to evaluate interventions and impacts of the ecohealth approach through the lens of these selected projects? On the contrary. This study will show that in order to understand what terms such as “intervention” and “impact” actually mean in the context of ecohealth research, *it is necessary to look carefully at the methodological process of projects as they are unfolding*. Simply examining the tangible “outcomes” and “results” of completed projects will actually tell us very little about how those results were obtained. Since one of the long range goals of the study is to learn more about how to help funded research projects to develop effective interventions and to obtain sustainable impacts, it was very useful and necessary to examine the “messy” parts of various research programs that are still very much “works in progress.”

In order to broaden the range of real-world examples, I will also occasionally draw on the six case studies done in 2001 for the methodological review.<sup>8</sup> This seems to me entirely justified in that the 2001 study (Transdisciplinarity and Participation) and this one are both centered on core methodological issues and challenges of the ecosystem approach. As well, two of the projects reviewed in 2001 (i.e. Ethiopia and Kenya), were revisited (with a very different focus) for this study.

As to the need of IDRC and the Ecohealth Program Initiative to demonstrate tangible impacts and outcomes of the ecohealth approach (to funders, decision makers and other stakeholders). This study will show:

---

<sup>8</sup> See footnote no. 1.

1. that all of the projects reviewed (for both studies) are in fact having a great deal of measurable impact;
2. that the difficult and seemingly intractable sorts of development problems ecohealth research takes on can in fact be addressed and transformed;
3. that the process of change takes time (often five years or more), which exceeds the current timeline expectations and funding horizons of many development research funders;
4. that pathways leading to sustainable impacts (in terms of solving specific health and natural resource management problems) are being identified and demonstrated by ecohealth research, but that another stage of work is required beyond the initial research, to “scale-up” tested solutions into development strategies that effectively reach whole populations and bio-regions; and that
5. this “scaling-up” phase is not simply a development implementation task. It is a researchable problem that will need to be incorporated into the Ecosystem Approach if the long range objective of the approach are to be realized.





## **PART II: CASE REVIEWS**

### **Case Review No. 1**

#### **“Links Between Sleeping Sickness and Natural Resource Endowments and Use: What Can Communities Do?” (Southeastern Uganda)**

**(IDRC Project No. 100106)**

### **Background**

Based on World Health Organization figures, some 245 million African households that depend on subsistence or mixed farming for survival are vulnerable to some form of trypanosomosis, the parasite which causes sleeping sickness in humans and nagana in cattle.

In southeastern Uganda, there is an area covering some 7,000 km<sup>2</sup> with a population of 2.1 million people (much of it centered around the secondary town of Tororo) that has experienced successive epidemics of sleeping sickness and nagana, in which well over a million people and untold number of cattle have died. The most recent epidemic ended in 1993. It was followed by a period of strict implementation of preventative measures and controls, which resulted in a dramatic reduction in the incidence and impact of the disease on people and cattle.

In the past several years however, these programs have gradually disintegrated (due in part to a devastated national economy). The unsurprising result is that trypanosomosis related diseases are making a remarkable comeback.

The single most critical determinant that impacts a human population's vulnerability to trypanosomosis is poverty which, in rural Africa, is almost always linked to natural resource degradation. The average income of the population living in the (rhodescence) sleeping sickness area of southeast Uganda is less than 1 US \$ per day.

In recent years, there have been significant increases in human population and related natural resource exploitation in the study area. Zones that were once evacuated because of trypanosomosis have recently been resettled. Concurrent with these shifts in population and land use patterns, the economy of the area has suffered severe decline,

which in turn causes people to put even more pressure on the environment in order to survive.

Given the current disintegration of Ugandan government services (related mostly to the state of the economy) across all departments, it is no longer reasonable to expect that government will be able to provide trypanosomosis prevention and treatment services that are at all appropriate to the scale of need that exists in southeast Uganda at this time. For this reason, any solution that is to have even a slight hope of being sustainable and effective will have to be community driven.

On the surface of the problem, technical solutions to address the spread of sleeping sickness and nagana have been known for decades. We know that the primary vector of disease (both in humans and in cattle) is the tsetse fly. Effective tsetse control programs have employed a combination of strategies which include fly traps, control of breeding areas (in or near water), limiting human or cattle exposure through alternative land use patterns<sup>9</sup>, and to a lesser extent, the use of preventative sprays and chemical cattle dipping procedures. Of these strategies, tsetse traps have proven to be particularly effective *if* their use is properly managed and they are well maintained. We also know that the continued spread of the disease, as well as debilitation and death that can result from it, can be greatly reduced through vigilance in early detection and treatment.

Even though all of this is fairly well understood in theory, it is not well known what each of these strategic factors would mean in the areas that are at high risk for trypanosomosis in southeast Uganda. Furthermore, the ecosystem linkages between health, poverty and natural resource use in these areas are not well understood. Perhaps most critically, it is not well known how to move past current social patterns of dependency thinking, disintegrated social capital and grinding poverty to develop community led solutions that will be sustainable and effective in the study area.

---

<sup>9</sup> which eventually led to resettlement of whole villages in southeast Uganda in response to past epidemics.

## The Project

The International Livestock Research Center (ILRI), the Ugandan Livestock Health Research Institute (LIRI), the University of Guelph, and Makerere University (Kampala) are collaborating on a three year (initial) project to “develop community research strategies for improving human health through the control of rhodocence sleeping sickness in southeastern Uganda” (from the project proposal abstract). Other partners that will cooperate on the intervention, testing and scaling-up dimension of the research are the EU-sponsored FITCA (Farming In Tsetse Control Areas) Project, (which in Uganda is being sponsored by the Minister of Agriculture, Animal Industry and Fisheries and the Ministry of Health); and CAPRI: (Collective Action for Property Rights International), an NGO with experience in community mobilizations.

The core of the research is focused on developing, *with communities*, “a better understanding of their agro-ecosystems” and especially the linkages between natural resource management, social factors and health status (particularly sleeping sickness occurrence), and poverty.

The project design calls for joint community-researcher teams working (initially) in six selected project communities in the study area to

1. develop indicators for (a) poverty, (b) disease, and (c) natural resource use;
2. analyze how these three key factors interact;
3. identify existing coping strategies; and
4. identify ways of improving rural natural resource management, reducing the risk of disease (especially sleeping sickness) and improving rural livelihoods.

The researchers understand that there are inseparable causal and relational links between poverty, natural resource management and disease, that each of these factors feeds and influences the other two, and that interventions in any of them can (potentially) impact the entire set of factors that give rise to high incidence of sleeping sickness. The overall research goal is therefore (from the project proposal) to develop strategies for improving human health through the control of sleeping sickness “using the most appropriate (defined as feasible, effective and sustainable) mix of natural resource management, public health, social and policy interventions”. (Ibid).

## **Expected Research Outputs and Results**

The following outputs and results were anticipated in the project design.

1. Community-developed indicators related to natural resource endowment, social capacity, and health.
2. Systems analysis related to natural resources endowments and usage, social realities, human and animal trypanosomosis risk and poverty “across a spectrum of agro-ecological zones in southeast Uganda”.
3. Temporal and spacial analysis of events and historical trends related to NRM, human and animal trypanosomosis risk and poverty.
4. Models to predict distribution of poverty, the risk of disease (especially sleeping sickness), issues in NRM and the need for interventions related to trypanosomosis control and poverty.
5. Strategies (based on a combination of community and research analysis) for NRM, poverty reduction and addressing the risk of disease.

## **Current Status of the Project**

To date, the following project activities have been completed:

1. A preliminary study was conducted by LIRI scientist, Dr. Martin Odiit<sup>10</sup> which identified sub-counties in the study area which are most at risk (based on LANDSAT satellite images and adapted after “ground printing”) of sleeping sickness. This work was based in vegetation and land use maps which provided the basis for an analysis of village level risk of sleeping sickness, as well as an historical data related to the incidence of the disease in the past.
2. Six study communities were selected, two in each of three districts, one high and one low in sleeping sickness prevalence, surrounding Lake Victoria, Lake Kyoga, and the Mpologoma River, all in Southeast Uganda.
3. Local health and agricultural extension workers in each of the sub-counties were trained in PRA strategies to work together with the Field Research Coordinator (Ms. Winnifred Musoke). These teams facilitated six community workshops in the

---

<sup>10</sup> Odiit, M. (2000) “An Overview of Rhodocence sleeping sickness in southeast Uganda”. Presentation at stakeholders meeting – Tororo Uganda, 23-26 May 2000. LIRI coordinated research activities on trypanosomosis and its control in southeastern Uganda.

six study communication. Ms. Musoke is a doctoral fellow working under the direction of Grace Banteby-Kyomuhendo, Ph.D., of the department of Gender Studies at the University of Makerere in Kampala.

4. Participatory workshops were held in all six communities which addressed three components: description of the socio-ecological context; problem analysis and community action plans.

The descriptive phase elicited data related to (a) natural resource availability and use; (b) village institutions; (c) historical background, especially related to sleeping sickness; (d) social structures, especially related to gender, age and poverty, and (e) relevant trends (in disease, agricultural productivity, poverty, etc.).

5. A survey methodology and tools were developed and pre-tested in eleven (11) villages, drawing on experiences from the participatory community studies (as well as from other relevant research projects) related to assessing the usefulness of natural resources, as well as social and community health indicators developed (or adopted) by the project.

### ***Participant Mobilization***

Uganda local government has four levels of councils (designated as LC 1, 2, 3 and 4). LC-I is the closest to the ground at the village level, and it was this level of government (through the auspices of the local council chairperson) that was asked to mobilize workshop participants in each of the six study communities. The LC's were asked to include representatives from all socio-economic levels, as well as women, youth and elder representatives. Workshops were held in central locations, ranging from a school, to beneath the shade of a tree in the village center. Some 35-50 participants were involved.

### ***Methodology***<sup>11</sup>

Specific participatory techniques used included community *spatial/and land use mapping* (indicating among other things the location of each household, the location of

---

<sup>11</sup> This section draws on primary data sources: community visits, interviews with key informants, and a preliminary report prepared by field researcher Ms. Babirye Winnifred Musoke. "Participatory Village Workshops to Develop Community Health Action Plans in Six Villages in Eastern Uganda (May 2002). International Livestock Institute and Makerere University.

various natural resources such as agricultural and grazing lands, forests, rivers, lakes and swamps, as well as infrastructure such as roads, water points, trading centers and markets. Households known to have had incidences of sleeping sickness were also identified and as well, their location relative to areas of higher and lower concentrations of tsetse flies were noted.

*Seasonal calendars* depicting monthly change activities, agricultural conditions, and constraints were also produced. Participants were asked to record rainfall patterns, agricultural activity cycles (i.e. soil preparation, planting, weeding, harvesting, etc.), seasonality of disease, times of high and low need for cash, times of high and low availability of cash, patterns of indebtedness, time of consumption of various foods, as well as food deficits and surpluses, and pattern of hunger, land use patterns for specific times of the year and labour constraints by gender.

*Focused analysis through group dialogue* was carried out to uncover the community's own understanding of the nature and causes of common diseases and "health seeking" behaviours common in the community for significant diseases (particularly sleeping sickness).

*Community generated indicators of wealth and well-being* were used to rank the socio-economic status of various sectors of each of the study communities in order to analyze the relationship between wealth, livelihood, well-being and vulnerability.

*Gender aggregated activity profiles* were developed related to crop and animal production, community work, reproductive work and how all of these are related to exposure to tsetse fly infection.

*Recounting the past (storying)* was used to gather anecdotal accounts of how things have changed regarding community awareness, community participation, government intervention, and strategies employed, all related to trypanosomosis control.

*"Triangulation" of data* was done by using a small group format (with men and women working separately) followed by plenary sessions during which data generated by the various working groups was compared, discussed and refined.

### ***Community Action***

In each study location, workshop participants were assisted to develop a "community action plan" that responded to priority issues and needs identified in the

description and analysis phases of the workshop. “Village action plans were then developed by consensus and committees chosen for coordinating implementation and evaluation” (from the May 2002 Community Workshop report).

### ***Stakeholder Workshop***

Village representatives from all six study communities participated in a “project meeting” held at the Livestock Health Research Institute (LIRI) near Tororo in December 2000. Each community delegation presented their findings, analysis, and community action plans, heard reports from researchers on their progress and plans, and were able to discuss options for future action with members of the project team.

### ***Reporting***

From each community workshop, a separate written report was produced that describes the outcomes for that place in the form of very basic, descriptive data. However, no systematic analysis of the implications of those data relative to the goals of the study seems to have been undertaken at this stage.

A composite summary report that describes the outcomes from all six community studies, as well as the methodology used in the community workshops and some preliminary (researcher generated) interpretation of findings across all six communities was prepared in May 2002 by field researcher Ms. Winnifred Musoke.<sup>12</sup> That report says that community workshops were completed between September and December 2000, which means there was a gap of some 16 months between the time the last workshop was completed and the summary report was produced.

## **Evaluating the Intervention and Impact**

The detail provided above describing the community based studies in the six-selected project communities really described all significant project *activities* to date.<sup>13</sup> Insofar as selected communities in southeast Uganda known to be susceptible to trypanosomosis have been engaged in a co-research process, focused on mapping the socio-ecological context, analyzing trypanosomosis risk patterns (NRM, social and economic conditions that contribute to sleeping sickness) as well as planning and

---

<sup>12</sup> Musoke, Babirye Winnifred “Participatory Village Workshops to Develop Community Health Action in Six Villages in Eastern Uganda”, May 2002, unpublished project document.

<sup>13</sup> If there were any other activities, they were not reported to me.



mobilizing for collective (community driven) action, *there has already been an intervention and there have been impacts*, even though the project is really very early on in its planned agenda of activities.

Let us be clear and specific. Within the context of ecohealth research, an ***intervention*** is the process of implementing solutions believed to be effective in addressing some aspect of a human health and/or natural resource management problem within the socio-ecological context that has given rise to the problem. ***Solutions are*** developed through analysis and testing by researchers (including community researchers). Whether or not a “solution” will be effective or sustainable within the research context is usually difficult to predict until it has been tested extensively through a process of intervention. An ***impact*** is a change in the socio-ecological context and conditions that has occurred as a result of research activities. Some “impacts” are significant (relative to the research problematic), some are not, and some have a delayed or indirect significance that can only be detected under certain conditions (such as community or institutional learning, which only shows itself if the learning is applied).

There is not a project evaluation per se (mid term or otherwise). Our focus is the interventions and impacts dimension of the project. However, the only thing there is to evaluate at this point is the *activities to date as interventions*, and the impacts these activities have had relative to project objectives. Although field activities began in September 2000, there have been significant delays in following up on the initial community workshops with transdisciplinary analysis and a second round of community workshops, leading to the development of integrated strategies for each locality, and eventually a framework for interventions that could be more widely tested, which includes practical indicators of progress in key strategies.

## **Outcomes and Impacts**

Dr. Charles Otim, the director of the Livestock Health Research Institute (LIRI) in Tororo began his comments on the research project with the following:

*This Institute has been here since 1956. I was bitten by a tsetse fly while sitting at my desk in November 2001. Why are the tsetse flies still here? We have the knowledge and the technology to solve the trypanosomosis problem. If it needs to be refined for a particular situation, as scientists we can do that. But how do we get the chairman of LC3's (i.e. local government leaders) to work with us to implement what we know? This is the next level of research we need to address.*

Dr. Otim's remarks sum up very nicely the problem of moving from a researcher designed technical solution to an intervention that actually solves the problem on the ground in particular ecosystems and human communities. This is really the nub of what this research project is all about. As mentioned earlier, principle researchers John McDermott and Martin Odit (and their partners) had clearly identified fundamental lines of action that are needed (in general) to prevent sleeping sickness before the project began.

In summary, they are:

1. Natural resource management (i.e. vector and environment management related measures).
2. Public health education and mobilization.
3. Disease prevention, detection and treatment.
4. Poverty alleviation – because poverty drives a high proportion of high risk generating behaviours.
5. Community capacity development for collective action that will be effective in addressing key risk factors, including poverty.
6. Public policy shifts, such that a coordinated and sustained effort is maintained by appropriate government departments, both to address trypanosomosis directly, and to support a broader integrated strategy that addresses natural resource management, human and animal health and poverty.

As Dr. Otim pointed out, one of the challenges lies in convincing key stakeholders (at various levels) to invest resources and energy into taking the necessary steps, and in providing them with the information, tools and technical support they will need in order to scale-up an intervention program across the entire region represented by the study communities.

On the way to developing the partnerships, frameworks, strategies and tools that will be required, there are still important unanswered questions that center on the transdisciplinary analysis needed in order to understand the linkages between health, poverty, and natural resource management for different types of socio-ecological settings. Finally, there is the strategic challenge of designing an effective intervention approach to key stakeholders at the level of households, communities,<sup>14</sup> administrative districts and beyond.

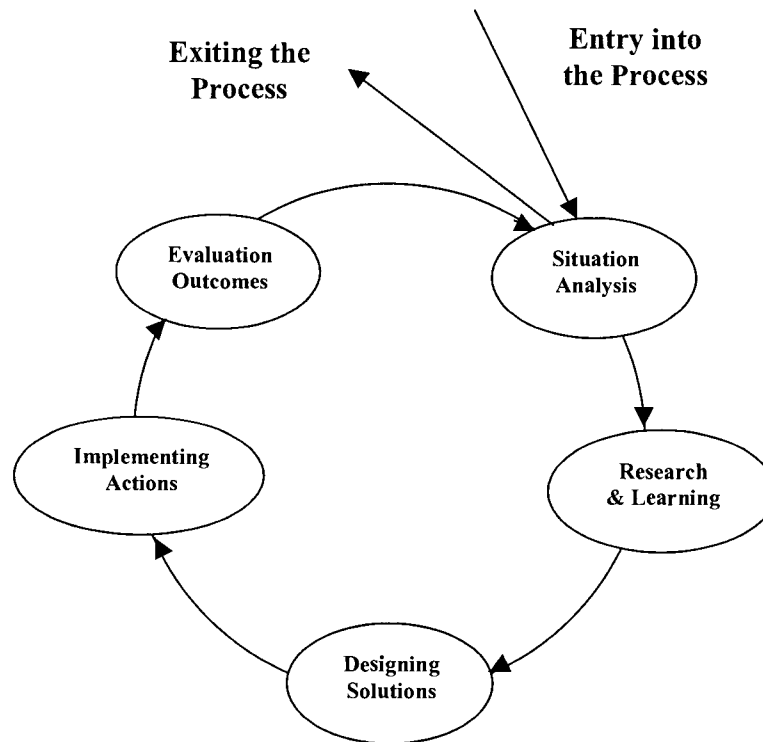
## **Methodology as Intervention**

---

<sup>14</sup> Such as farmers associations, health communities and local government.

The project methodology combines participatory inquiry, participatory action research, and a variety of targeted scientific studies, but the primary methodological path begins and ends in stakeholder engagement, beginning at the community level.

Essentially, such participatory approaches proceed toward the research objectives something like a spiral staircase moves the traveler toward his goal at another level of a building. One seems to go round and round the same point, but actually with each step the researchers travels deeper into the research problematic. A typical round of activity involves (a) analyzing the situation, (b) learning for solution building (i.e. either out of the analysis, or from other sources), (c) designing solutions, (d) implementing actions following the design, (e) evaluating outcomes of the actions taken, and then again (a) situation analysis – however this time it is hoped that the situation will have changed as a result of the actions taken in the previous round (see diagram one).



**Figure 1 – The Participatory Research Cycle**

By engaging the representative communities in a participatory exercise of mapping their own socio-ecological context relative to sleeping sickness, and to known (and related) determinants, such as poverty and natural resource management, and by supporting them through an initial analysis and action planning process, researchers have (at least in part)

1. Roughed out a map of the ecosystem, as it relates to the research problematic (preliminary though it is at this stage).
2. Identified important social factors related to health behaviours, economic conditions and barriers, community mobilization, and relevant stakeholder involvement (or non-involvement) with the problem (again at a very rudimentary level).
3. Mobilized a significant group of community actors to act upon their own analysis and learning in order to improve health conditions.

Although much is still missing from this picture in terms of the intended impacts and outcomes of the research project, what has thus far been achieved represents a kind of first draft rough sketch which reveals some of the essential shape and elements of a final solution. The “final solution” in the first phase of the project will be a composite of the processes and outcomes of all six communities, synthesized in the form of a process map that will describe how to effectively engage ground level (and other) stakeholders, specific indicators for monitoring progress related to key determinants (human and animal health, natural resource management and poverty), and a menu of strategic options to be selected from and adapted to address sleeping sickness in a variety of socio-ecological conditions which can be adapted to fit virtually all localities within the area at risk for sleeping sickness in southeast Uganda.

## **Assessment of Specific Impacts**

### **1. Stakeholder Engagement**

The research team has engaged six sets of local stakeholders which, in each locality, involved representation from a majority of village households, LC 1 representatives<sup>15</sup> and local extension workers from the Ministries of Agriculture and Health. Researchers attempted to incorporate local extension workers into the

---

<sup>15</sup> LC-I is the lowest rung (i.e. closest to the grassroots) of a four tier local and area government system in Uganda.

facilitation team, but found that there was a very low level of understanding and skills related to participatory approaches (local workers tended to be bossy, top-down and sometimes heavy handed). In response researchers provided a training workshop to introduce extension workers and local government leaders to participatory methods and skills. This training was carried out by a Ugandan NGO, and even their trainers tended to be more directive, and less facilitative than researchers wanted. This problem illustrates a key challenge to the core research methodology of this study (which is inherently participatory), and that is the sheer lack of orientation and training in participatory approaches in the study area, and in Uganda generally.

Despite these challenges, study communities were engaged in the beginning stages of the core research activities, as were important local stakeholders, with the following results:

- a. Local knowledge and memory was consolidated into a systematic descriptive analysis (still preliminary, but definitely moving in the right direction) related to key dynamics of the socio-ecological systems of each community in relation to sleeping sickness.

In effect, knowledge and experience that was known “in pieces” (i.e. different bits held by different parts of the community), was gathered up and arranged into a coherent pattern (i.e. a map) that even in its rudimentary early stages, is still useful in understanding the links between key determinants of sleeping sickness.

- b. Through this process, awareness was raised, and considerable community learning took place, about sleeping sickness per se, but also about the interrelated web of factors that generally impact human health, well-being and prosperity. In fact, we now know that single issue health campaigns are often unsuccessful because they try to abstract a problem from its context by dealing only with “the problem”, and ignoring other factors that are co-related through common dynamics within the system.

This round of mapping and analysis seems to have described the links between natural resource management, poverty and human health, and as such cast a wider net (in its analysis) that sleeping sickness as an isolated problem. Naturally, other health issues (in addition to sleeping sickness), such as contaminated water, malaria and nutrition were prevalent concerns of most of the communities in the study area.

- c. The fact that community action plans were made, and follow-up action did indeed take place in at least three of the six communities, indicates that the process was empowering, in the sense that participants gained knowledge, confidence and collective will that enabled self-determined action to take place.

Interestingly, none of the actions taken were directed at sleeping sickness. In Bugwera, the local “health committee” (formed to act on the workshop concerns), did restoration work on a community well and constructed latrines to protect water quality which was impacting children’s health at the village school, and developed a demonstration garden plot to introduce new varieties of food crops (to address concerns about the lack of availability and diversity of nutritious foods). These activities were carried out as a direct result of the action planning that occurred in the community workshop, and without financial or technical assistance from outside the community.

Another concern addressed by the Bugwera committee was the shortage of classroom space in the local school. The first solution proposed was to send only the boys to school. After more discussion this idea was abandoned because it was “bad for girls and for the community as a whole”.

In times past, dependency thinking had shaped the people’s response to such problems. Bugwera people were used to waiting for “them” to come and fix the problem (i.e. government, or some outside provider). As a result of the experience gained from the community workshop, and the subsequent actions taken to address long standing problems that were carried out with no outside money or technical assistance, the committee decided to tackle the classroom shortage issue. A delegation was sent to the Ministry of Education in Kampala, and a deal was struck through which the minister supplied funds for building materials and the community built the needed classrooms.

With each of these seemingly small accomplishments, the community is learning more about how to analyze problems, to develop solutions, to build appropriate partnerships, and to be accountable to each other for the outcomes of their collective efforts. This process of capacity building and social capital development is fundamental to establishing the foundations for a sustainable solution to sleeping sickness, as identified in the research problematic.

- d. Local government partners were engaged at the LC 1 level, and received (rudimentary) training and experience in participatory research as an approach to engaging grassroots people to solve problems.
- e. As a result of the stakeholder workshop (with representatives from all communities and partner organizations) awareness was raised at higher levels of regional government (LC 1-3), and collaborative arrangements were made to focus health department energy on sleeping sickness. For example, through an arrangement between LIRI and the Tororo district health department, a worker now focuses on sleeping sickness treatment, and the department has restocked supplies for detection and treatment of sleeping sickness. Similarly, in another study area (Sereve), the community health center is now collaborating with LIRI for sleeping sickness screening and treatment, which was not occurring before the community workshops.

So, at least in the study areas, the relevant government departments are much more aware than they were of sleeping sickness, (remember that government control and response programs had all but stopped functioning) and at least some level of response capacity to the problem of sleeping sickness has reappeared.

### ***Critique***

These are remarkable outcomes, given the very embryonic stages of this research program. Most ecohealth research projects are not (however tentatively) impacting core intervention issues, until much later in the research process. However, there are also significant gaps and important issues that will need to be addressed as the project moves on, if the long range intended impacts of the project are even to be achieved.

### ***Community Participation and Engagement***

Unfortunately, the gains that have been made can easily be diluted and lost as life moves on in the six pilot communities, unless there is timely and systematic follow-up, encouragement, and technical support, and unless the cycle of inquiry, planning, action and reflection is renewed, deepened and reinforced by continuous engagement and support by the research team over a number of years. While a good start has been



made, it is only a start. Already too much time has elapsed between the initial workshop and subsequent stages of the work.

Field coordinator Winnifred Musoke has really carried the primary burden of the project work up to this point, and she has done so with considerable alacrity, demonstrating skill, a sound (but basic) knowledge of participatory approaches, and with considerable personal dedication. It appears however, that she has done so without much involvement from her direct supervisor at Makerere University and without the benefit of a great deal of support from the principle researchers.

Although the “PRA techniques” used were participatory in the sense that they engaged community members in providing information, the overall process<sup>16</sup> lacked depth in that it did not deeply engage community stakeholders in analyzing what the data thus far collected actually means in their socio-ecological context relative to the key determinants of health known to be connected to sleeping sickness (by previous research), namely natural resource management, poverty and overall health behaviours and responses.

Furthermore, the various techniques employed seem to have been driven by researcher developed categories of inquiry. There is nothing inherently wrong with researchers providing categories of inquiry, but if the inquiry frameworks were reviewed by a community research team, it is quite possible that other (and sometimes quite important) categories could be added. For example, in the preparation of seasonal calendars, participants were asked to list common diseases and when these occurred, rainfall patterns, agricultural activities, cash flow patterns, food surplus and shortages, land use patterns and seasonal labour constraints. This list may well have been perfectly adequate for the study communities, but in some rural African communities, another factor that influences what happens is the cultural, ceremonial and religious life of the community. For example, if a predominantly Christian community holds immersion baptisms and other important gatherings at the edge of the river, these activities may expose many people who might otherwise not be at risk to tsetse flies and (if ceremonies are held at night) to anopheles mosquitoes carrying malaria. Sometimes the annual round of religious and cultural activities put a serious financial burden on the poorest, who feel obligated to make contributions of food, work, and money to support a community activity. These are only examples intended to illustrate a basic principle.

---

<sup>16</sup> As far as was reported in project documentation and interviews with key project personnel.

*The communities own knowledge system, categories of experience and analysis should be incorporated into a participatory inquiry process.* Nothing I read or was told by project stakeholders would indicate that this has yet occurred in any systematic way.

### ***Other Local Stakeholders?***

A weakness in the initial community engagement process was that community organizations (such as committees, farmers groups, church groups and NGO's and community institutions (such as LC 1, 2, 3 and 4, and churches) were not directly engaged as stakeholders, nor represented in the planning and implementation of the first community workshop.<sup>17</sup> LC-I chairmen were asked to assist the researchers, and as a result, there was a solid representation from community households (which is a very good result).

However, organizations such as farmers groups, women groups, and community committees were already working in areas directly related to the research problematic long before this research project began, and they will likely continue to work long after this project is gone. In the long run, these groups will have to play important roles in implementing various aspects of any sustainable solution that is developed.

---

<sup>17</sup> Local councils at level I (grassroots), II area, III county, IV district.

### ***Another Community Committee?***

In each of the six pilot communities, a community action plan was developed, and a “health committee” was formed to coordinate the plan’s implementation. While this is the way many development programs operate (i.e. creating their own community committee to work with), it is important to ask whether or not, if given the chance to decide for themselves, all six communities would have chosen exactly the same form for a new committee, or whether either an existing group, or a coalition of community groups might have been proposed to coordinate the work. There are no right answers to the question, “which is the best way” but there are many wrong ones. For example, it can be counterproductive to create new community organizations driven by a process originating from outside the community. Often the same key people serve as “sparkplugs” to most community development initiatives, and these few individuals are very often split between many demands on their time and energy. A new committee may not be an inefficient use of the community’s human resources. Sometimes the creation of new groups by outside projects generates jealousy and disunity, because it is perceived that certain individuals now control “that project”. None of these problems may be occurring in the study communities, but if they are, the long-range sustainability of solution building carried out through collective action may already be in jeopardy.

## **2. Transdisciplinary Work**

In addition to the community stakeholders already engaged with the core research questions, the research team itself consists of scientists from the following disciplines: medicine, veterinary epidemiology, entomology, agricultural economy, land use management, livestock health and sociology. The full capacity of these various disciplines has not yet been applied to the core ecosystem research task of mapping the socio-ecological systems in relation to the research problematic. This work would need to be done *in partnership* with community representatives who participated in the community workshop, and who would serve as the disciplinary experts related to local knowledge.

This step is, of course, key to developing the best possible analysis from the data already collected, and to planning the next steps related to each of the six pilot communities. It is also fundamental to the generation of research outcomes such as

health and NRM indicators, and the design of a battery of solutions that can be tested and refined through a subsequent set of interventions.<sup>18</sup>

In the final report (2001) of An Integrated Assessment of Agricultural Communities in the Central Highlands of Kenya (center file 003157-002), which John McDermott explained) provided a prototype methodology now being refined in the Uganda Sleeping Sickness Project, John McDermott, Thomas Gitau and David Waltner-Toews state the following.

*The interactions between communities and researchers were an essential feature of the agro-ecosystem health process in the project ... Researchers effectively complimented community-based actions. Essentially all community based actions ... required technical expertise and links to technical and administrative organizations outside the village (pp 21-22).*

Up till now, the Ugandan Sleeping Sickness Project has not had enough of precisely this kind of researcher – community collaboration. These two realities of ongoing (scientific and community) work have to be synchronized and coordinated. Much like the wings of a bird, these two essential elements must be held in balance, such that neither one is overpowered by the other. In the Uganda Sleeping Sickness Project (for whatever reasons) the influence of the scientific team has not yet been felt.

In conversations with team coordinator, Dr. John McDermott, two things became clear to me. First, starting with the community inquiry was a deliberate strategy, and it has proven to be extremely effective in laying a solid foundation for solutions based on collective action. There is now much to build on that would have otherwise been missing when the time came to test interventions. In fact, this strategy illustrates one important approach to including “intervention” as a discipline within the transdisciplinary circle of the research team, and undertaking lines of inquiry from the very beginning of the research project that make the process of intervention itself part of the research problematic.<sup>19</sup>

Secondly, John McDermott made it clear that there have been delays in the forward momentum of the research, which now need to be rectified. In my view, what is now needed is a field team retreat, (including community representatives) during

---

<sup>18</sup> Presumably, initial transdisciplinary analysis of data was begun at the Tororo Stakeholder’s Workshop, in December 2000, but no documentation was shared with me that indicates what resulted from this work.

<sup>19</sup> As discussed earlier, the project was handicapped for the lack of skilled and knowledgeable participatory practitioners.

which the various disciplinary specialists work together (based on data already collected) to

- a. construct a map of the ecosystem (six separate maps, and then a composite in relation to the core research questions;
- b. construct a map of the social systems (six separate maps, and then a composite) which includes all stakeholders at all levels; leading to
- c. the development of a number of composite scenarios that represent the range of socio-ecological contexts in the study area;
- d. identify gaps in knowledge and understanding for further community based research, and for specific scientific studies, and from these, plan the next phase of research;
- e. develop a menu of possible solutions suggested by the data thus far collected (linked of course to the base of knowledge and experience researchers bring to the project);
- f. identify possible intervention strategies for testing “solutions” that are ready to be tested; and
- g. make a stage two research and intervention-testing plan.

While I realize that steps like this may seem obvious to these researchers, the fact remains that almost two years have passed between the first community workshop and the present. In participatory work, timing is important, and maintaining momentum is critical. If communities in southeast Uganda could have solved the sleeping sickness problem on their own, they would have done so long ago. Similarly, if the legion of scientists and experts that have worked on sleeping sickness in Africa for almost 30 years could have solved the problem on their own, they would have done so. The ecosystem approach brings these two groups together, and describes a pathway to a sustainable solution. But this collaboration requires sustained face-to-face interaction, and mutual engagement (i.e. the scientists and the stakeholders) in an interactive action and reflection process.

## **Recommendations**

### **1. Link problem analysis explicitly to the determinants of health**

A key underlying question in any ecohealth research project is what are the primary determinants of health within the ecosystem under study, and how are these determinants linked to the core problem of the research (in this case trypanosomosis). This is important to know for a variety of reasons. Overall health is related to resiliency and vulnerability. Often the only way to prevent sickness is to systematically work on the factors that determine well-being. Specific diseases are usually linked to a cluster of determinants. The project already plans to map the relationships between natural resource endowment and management, (i.e. ecosystem mapping), poverty and health. Thus far the focus of health data collection has been on cataloguing disease patterns. A more explicit look at factors that influence health in general, and sleeping sickness in particular will assist researchers to develop more effectively targeted interventions.

### **2. Systematically identify and engage stakeholders beyond the community level**

A “stakeholder” can be defined as any person or group whose participation is required in implementing a sustainable solution. Thus far the project has only nominally engaged local government officials and extension workers at the community level. The implementation of a long range scaled-up solution to sleeping sickness in southeast Uganda will require the sustained involvement of institutional actors at all levels of Uganda government, as well as significant support from key NGO’s, research institutes, and development programs.

At a time when government capacity to respond is seriously impaired by a financial crises, the research process has shown that many rural Ugandans in the study area view disease vector control as a government function. This view has left communities waiting for solutions to appear – a typical dependency syndrome response. And yet, it is the government, which holds some of the key cards, such as the management of health and veterinary services, and the enforcement of environmental management policy.

The problem to be resolved is how can communities, government departments and other key NGO actors work together to build a viable and sustainable solution to the problem of sleeping sickness in southeast Uganda?

An important task for this research project is to build viable relationships and networks between key stakeholder groups, and to assist them to collectively develop a workable and effective set of strategies that can, and likely will be sustained. This is best accomplished by involving all-important stakeholders very early on in the research process, so that they are educated about and committed to solutions as they emerge.

**3. Identify community capacity development needs related to the implementation of sustainable solutions, and include community capacity building as a part of the intervention package that is being designed and tested**

A central aim of this project is to develop community driven, and where possible community implemented solutions that will be both effective and sustainable. A great deal is thereby expected of communities (and not without reason) for which many rural African communities are not now well prepared. Factors such as leadership, management of programs and resources, the capacity to develop and work from a community vision, and the ability to engage community members in constructive and sustained participatory development processes are examples of capacities for which learning is often needed.<sup>20</sup>

The community workshops introduced a pattern of problem identification, inquiry and learning, planning, action and reflection. This basic process can now be built upon to prepare communities to be the principle implementers of intervention leading to sustainable solutions.

**4. Shift from a “collective action” to a “community development” focus**

Collective action is working together to solve a problem, implement a solution or deal with an emergency. Community development often includes collective action, but is a much more comprehensive process of inquiry and learning, building of essential relationships and partnerships, designing, testing and implementing solutions, and evaluating progress. Indeed, the participatory research cycle described earlier (see page 19) is also one way of describing the essential dynamic of community development. The core of community development is the development of common oneness (or unity), of thought and action that not only is sustained, but also that is invested in the process of solving common problems. There is much to learn about how

---

<sup>20</sup> See “Assessing Community Capacity for Change”, Michael Bopp, Kathy Garmann, Judie Bopp, Lori Baugh Littlejohns, and Neale Smith (2000) Four Worlds Press, Calgary.

such a process can be fostered and assisted to develop to the point where it is self-sustaining.

To conceptualize what needs to happen in the pilot communities in order to develop a sustainable solution to the problem of sleeping sickness as the implementation of a few measures through “collective action” may well be to seriously underestimate the dimensions and complexity of the transformation that will need to take place, considering that the primary determinants to be addressed are related to poverty and natural resource management neither of which are lacking in complexity. The full range of factors that have to be transformed includes individual knowledge and thinking patterns, as well as collective attitudes, values and habits, and a dense web of relationship patterns (political, economic, social and cultural), that shape family and community life, the community’s relationship with the natural environment, as well as their relationships with the political and economic systems of southeast Uganda.

The development of social capital, knowledge, skills and institutional strength that this will require needs a sustained process of community development (from within), which will of course include collective action, but will also include the development of community capacity to sustain a process of change and development over a period of many years.

For these reasons, it is recommended that the project introduce a community development perspective into its processes of community engagement. To prevent such an approach from drifting away from the core research issues, as well as to assist the project team to ensure that “soft” process concerns such as participation and social capital development are effectively linked to the key strategic issues, it is recommended that a logical framework such as the following be developed and used.

In the sample framework below, six (6) determinants of sleeping sickness status (identified in the research proposal) are shown as follows: a) natural resource management; b) disease vector control; c) health measures implementation (i.e. early detection and treatment); d) poverty alleviation; e) community capacity investment; f) appropriate public policy development and implementation.

These core determinants will need to be addressed by community development activities that are supported and made possible through six domains of capacity that require systematic strengthening. They are: a) learning and knowledge development; b) social capital development; c) participation and empowerment; d) accessing and



effectively managing resources; e) leadership and organizational capacity; and, f) appropriate stakeholder engagement and partnership.

Community Capacity Development							
	Learning and Knowledge Development						
	Social Capital Development						
	Participation and Empowerment						
	Accessing and Managing Resources						
	Leadership and Organizational Capacity						
	Appropriate Stakeholder Engagement						
		Natural Resource Management	Disease Vector Control	Health Measures Implementation	Poverty Alleviation	Community Capacity Investment	Appropriate Public Policy
		Key Determinants of Health					

**Figure 2 – Linking Community Capacity Development with Key Determinants of Health Related to Sleeping Sickness**

The likelihood that a particular determinant will be effectively and sustainably addressed by community and other stakeholders is directly proportional to two inter-related factors; a) capacity development in each of the six identified community capacity domains<sup>21</sup>, and b) the application of each of the capacities to that particular determinant.

Just as indicators are needed for progress related to NRM or health outcomes, they are also needed to measure community capacity to carry out a sustained program effort<sup>22</sup>. For example, indicators about “Learning and knowledge development” might cover such issues as what needs to be learned, who needs to learn, and evidence that learning has actually taken place. Some researchers have used a ranking scale (e.g. 1 – 10 or 1 – 7), and asked participants to use the indicators of capacity to rank how much capacity is in fact present at the time of the ranking<sup>23</sup>. Asking groups of community stakeholders to rank their own capacity based on community generated indicators produces two kinds of useful data; a) the ranking itself, which although subjective is still indicative of the actual state of affairs related to that capacity; and b) the interpretation of the ranking provided by participants which often reveals useful descriptive data that can be very helpful in understanding what is really happening or not happening relative to the indicators.

In summary, the reason for focusing on community capacity development in this evaluation report is to make the point that this research project aims to develop solutions that can be carried out by sustained community action. However, it can be a big jump from “can be” to “would be” carried out, and often the difference is community capacity. A comprehensive community development approach not only assumes that building human and institutional capacity is a necessary part of the work, but it also systematically links capacity development to the strategic lines of action “the community” has chosen to work on, and calls participants to account in terms of the effectiveness of the work in advancing the process systematically towards the goals.

## **Summary of Tools and Methods the Project is Developing**

---

<sup>21</sup> Please note that these are only examples of community capacity domains. There are many other capacities that could be relevant, and they need to be identified by the research team.

<sup>22</sup> See bibliography on Community Capacity and Health at the end of this section.

<sup>23</sup> See Riften, S. (1988) “Primary Health Care: on Measuring Participation”, *Social Science and Medicine* (9), 931-940

The following tools and methods have been developed.

1. The use of a participatory action research approach applied to ecohealth research. Many projects use the rhetoric of participation. This project has actually focused thus far in much of the life of the project its methodology around community participation. Once refined, this approach (which was first successfully tested in the IDRC sponsored Kiamba agro-ecosystem study, eastern highlands, Kenya, completed in 2000, centre file 003157-002) will be applicable to many ecohealth research contexts.
2. A tool kit of qualitative and quantitative indicators of natural resource management, poverty and disease which can be used to establish a base line, and then to measure progress in comprehensive ecohealth and health development work, including work on trypanosomosis.
3. Based on satellite photographs, maps of vegetation cover and land use linked to village level of risk have been completed on the wider study area.
4. Fitca (one of the partners) has completed a trypanosomosis prevalence on cattle survey in 165 randomly collected villages, which further adds to information on spatial risk.
5. Simple models to predict poverty distribution, disease risk and natural resource management requirements for targeting trypanosomosis control and other health and anti-poverty interventions.
6. A framework to guide the process of interventions and a menu of strategic options to address sleeping sickness in a variety of socio-ecological contexts, suitable for scaling-up across southeast Uganda.
7. A survey instrument for measuring the distribution of disease prevalence in relation to known risk factors (tailored by the village studies and other work) has been piloted.

## **Selected Bibliography on Community Capacity and Health Promotion**

Chaskin, R.J. (2001). *Building Community Capacity: A Definitional Framework and Case Studies from a Comprehensive Community Initiative*. Urban Affairs Review. 36(3), 291-323.

Crisp, B.R., Swerissen, H., & Duckett, S.J. (2000). *Four Approaches to Capacity Building in Health: consequences for measurement and accountability*. Health Promotion International. 15(2), 99-107.

Goodman, R.M., Speers, M.A., McLeroy, K., Fawcett, S., Kegler, M., Parker, E., Smith, S.R., Sterling, T.D., & Wallerstein, N. (1998). *Identifying and defining and dimensions of community capacity to provide a basis for measurement*. Health Education & Behaviour. 25(3), 258-278.

Hawe, P., Noort, M., King, L., & Jordens, C. (1997). *Multiplying health gains: The critical role of capacity-building within health promotion programs*. Health Policy. 39, 29-42.

Jackson, S.F., Cleverly, S., Burman, D., Edwards, R., Poland, B., & Robertson, A. (1999). *Toward indicators of community capacity: A study in four Toronto communities*. (ed.). Toronto: Centre for Health Promotion and Department of Public Health Sciences, University of Toronto.

Labonte, R., & Laverack, G. (2001). *Capacity building in health promotion, Part 1: for whom? And for what purpose?* Critical Public Health. 11(2), 111-127.

Labonte, R., & Laverack, G. (2001). *Capacity building in health promotion, Part 2: whose use? And with what measurement?* Critical Public Health. 11(2), 129-138.

McKnight, J., & Kretzmann, J.P. (1997). *Mapping community capacity*. In M. Minkler (Ed.), *Community organizing & community building for health*. (pp. 157-172). New Brunswick, NJ: Rutgers University Press.

*Notes:* Adapted from mapping community capacity (1988) Evanston, IL: Centre for Urban Affairs and Policy Research, Northwestern University.

Parker, F.A., Eng, F., Schulz, A.J., & Isreal, B.A. (1999). *Evaluating community-based health programs that seek to increase community capacity*. New Directions for Evaluation. 83, 37-54.

Poland, B. (2000). *Social capital, social cohesion, community capacity, and community empowerment: Variations on a theme?* In Blake Poland, Lawrence Green, & Irving Rootman (Eds.), *Settings for Health Promotion: Linking Theory and Practice*. (pp. 301-307). Thousand Oaks. CA: Sage.

Smith, N., Littlejohns, L.B., & Thompson, D. (2001) *Shaking out the cobwebs: insights into community capacity and its relation to health outcomes*. *Community Development Journal*. 36(1), 30-41.

## **Appendix 5**

### **Annual Report to IDRC**

**Project:** Sleeping Sickness, Poverty and Natural Resource Management (Uganda)

**IARC:** International Livestock Research Institute

**Project File:** 100106

**Reporting Period:** April 1, 2000 to March 31, 2001

#### **1. Research Progress**

The overall objective of the research project is to develop community-based strategies for improving animal health through the control of sleeping sickness using the most appropriate (feasible, efficacious and sustainable) mix of natural resource management, public health, social and policy interventions.

There are 3 specific objectives of the project. These are listed below together with the work carried out, results obtained, planned activities for the next period, evaluation of progress made, lessons learned and implications for future research.

##### **1.1 Specific Objective 1:**

**To establish relationships between attributes of natural resource endowment and use and the risk of human and animal trypanosomosis, both temporally and spatially.**

##### **a) Work Carried Out**

Martin Odiit has compiled data on sleeping sickness cases in Tororo and Busia Districts from 1987 – 1999. All villages in these Districts were georeferenced and the distribution of positive and negative villages was compared spatially to GIS data on: (1) population (from the 1991 population census), (2) vegetation types (Uganda National Biomass Project) and the location of health facilities (clinics and hospitals). Temporal clustering of sleeping sickness by village over the reporting period was also investigated.

##### **b) Results Obtained**

The distribution of reported sleeping sickness cases was associated with all 3 spatial factors investigated. Sleeping sickness incidence was inversely related to population density ( $p < 0.04$ ). Associations between positive sleeping sickness villages and their proximity to certain vegetation types ( $< 1.5\text{km}$ ) was assessed both crudely and adjusted for the villages distance from a clinic or sleeping sickness centre. Bushland, woodland and swamp vegetation types were all significantly associated with proximity to sleeping sickness villages ( $p < 0.01$ ). Proximity to sleeping sickness centres was also strongly associated with reports of sleeping sickness. There was a significant association of higher reported cases residing closer to sleeping sickness centres ( $p < 0.01$ ). This proximity bias was also reflected in a variation in the ratio of early:late stage sleeping

sickness cases. The proportion of early cases was 50% within 5 km of the main sleeping sickness centre and 30% if the village was between 20 and 30 km away. A paper further detailing factors associated with under-reporting of cases is in preparation.

Temporal clustering of sleeping sickness cases was also noted. During 1987-1999 five significant clusters of sleeping sickness were reported with radii ranging from 0.3 to 10.3 km. A preliminary investigation of these foci indicated that a shift to rice growing (developing rice fields in swampy areas) was linked temporally to becoming a sleeping sickness focus.

### **c) Planned Activities for Year 2**

Based on these preliminary results, more detailed spatio-temporal investigations of changing agricultural land use patterns and their relationship to sleeping sickness occurrence will be conducted in Busia and Tororo Districts. Satellite images from 4 different time points (February 1980, 1987, 1994 and 2001) spanning the period with sleeping sickness case records will be processed, georegistered and ground-truthed. Changes in agricultural activities and sleeping sickness trends, particularly associated with changes in agricultural land use (clearing bush and swampy areas for farming activities), will be assessed.

To assess longer-term and broader geographical trends, sleeping sickness, agricultural land use, and natural resource trends will be investigated from the 1940s for the greater south-east Uganda rhodesiense sleeping sickness area. A PhD student to be enrolled at the University of Guelph has been identified and she will begin this work in January 2002.

In collaboration with the Farming in Tsetse Control Areas (FITCA) project in Uganda (EU funded) a trypanosomosis survey will be conducted in 165 villages, selected by geographical grid sampling, across south-east Uganda. This will give a broad-scale picture of animal trypanosomosis risk that can be assessed using existing data layers on population, vegetation type and access to infrastructure (roads, clinics, main towns, etc.).

### **d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

Good progress has been made on this objective. Earlier hypotheses on the role of the expansion of agricultural land use into favourable tsetse habitats have been supported and this will be followed up in more detail in year 2. Longer term perspectives on this problem will be started in year 2 but results will not be available until the end of year 3.

A key issue will be to develop strategies to fit these important project findings into outputs of use by Ugandan policy makers, land use planners, district staff and communities to reduce sleeping sickness and animal trypanosomosis risk, enhance agricultural livelihoods and improve natural resource management. Systems analysis of land use change is envisaged in year 3. These findings also will need to be placed in a community-based context by linking them with activities under objective 2.

Activities under objective 1 have been funded by the Department for International Development (United Kingdom), the Uganda Government, ILRI and IDRC. In year 2, activities will also be funded by the FITCA-Uganda and FITCA environmental impact projects and the National Science and Engineering Research Council (Canada), which will provide a PhD fellowship.

### **Specific Objective 2:**

**To determine how communities assess their own agroecosystem and community health, what they consider to be the main factors (natural resource, social, etc.) contributing to poor health (as evidenced by poverty, mortality, etc.), what strategies they consider important to improve health and what indicators they would consider useful in assessing improvements.**

#### **a) Work Carried Out**

Participatory village workshops were conducted in 6 purposively sampled villages between September and December 2000. Two villages were selected in each of 3 Districts (Kamuli, Soroti, Tororo), one a high incidence sleeping sickness village and one a village without sleeping sickness. Village workshops had 3 components: description, problem analysis, and development of community action plans. In the descriptive phase, villagers described through participatory techniques: (1) natural resource availability and use, (2) village institutions, (3) historical background, (4) social structures (gender, age, poverty), and (5) trends in disease, agricultural productivity, and poverty plus daily and seasonal calendars. The problem analysis phase involved the use of participatory ranking techniques to build consensus (triangulating on common problems) and prioritize issues. Village action plans were then developed by consensus and committees chosen for coordinating implementation and evaluation.

To support villages in implementing, monitoring and evaluating their action plans, 6 teams of 3 sub-county village extension workers (usually community development, health and agricultural extensionists) were trained in participatory methods in November 2000 and linked with the village action plan committees. The sub-county is the governmental level having trained extension staff that is closest to villages.

A subsequent monitoring and evaluation visit was made by project staff to each of the 6 villages in February – March 2001.

#### **b) Results Obtained**

The “proceedings” of the village workshops, including resource maps, ranking matrices, etc., have been compiled. Village representatives (2-3 per village) attended a project meeting held at the Livestock Health Research Institute (LIRI), Tororo in December 2000. At the meeting they presented their problem analyses and community action plans, heard researcher progress and plans, and had a chance for formal and informal discussions with all members of the project team. This interaction was very useful in creating a shared understanding of issues and needs.

Common problems identified in the village workshops were:



- the role of poverty and ill-health as crucial constraints to farming and other daily activities was highlighted;
- technical and informational inputs for farming, including implements and information on best-practices, were not available; and
- safety networks to deal with pressing problems such as drought, insecurity (Soroti), and lack of land (Busoga) were poorer than before – villagers felt that the current administrative system and local organizations were less responsive to their needs than the previous system of local clan leaders.

Villagers, especially those far from main roads and towns, felt isolated and were not optimistic about their options. However, in developing their community action plans they did include proposals for cost-sharing projects in health and education to be developed and implemented with governmental and non-governmental organizations.

#### **c) Planned Activities for Year 2**

Activities in year 2 will be to support and follow through on the village-led initiatives started in year 1. The sub-county teams will play the main supporting role and project staff will also provide assistance, particularly in preparation of plans and proposals to governmental and non-governmental organizations. Attention will be given to helping villagers enhance their monitoring and evaluation capacity.

#### **d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

This project has relied on lessons learned and methodologies developed during an IDRC-funded agro-ecosystem health project conducted in Kiambu District, Kenya from 1997-2000. As in that project, there are two key questions we are grappling with that are not easy to address in a 3-year project. The first is how to assess the sustainability of activities. Our strategy will be to focus on developing village capacity and resilience. The second is how to extrapolate lessons learned from individual, intensively-followed communities to inform wider development activities. This will be the focus of activities under specific objective 3.

#### **Specific Objective 3:**

**To assess which community and researcher developed natural resource, social and community health indicators have general utility across communities and regions and which indicators are location specific and to develop participatory community research and development approaches that support the implementation and improvement of natural-resource based strategies to improve health and reduce poverty.**

##### **a) Work Carried Out**

Discussions have been held with the FITCA-Uganda project regarding village baseline surveys. A geographically-based sample of 165 villages has been chosen and sampling will begin in 165 villages in August 2001.

##### **b) Results Obtained**

No results were obtained on this objective in year 1.

### **c) Planned Activities for Year 2**

In collaboration with the FITCA-Uganda project, results and proposed indicators from the 6 IDRC-project villages will be used in developing a rapid appraisal instrument to provide descriptive information on topics covered in the 6 village workshops for all the 165 villages in the FITCA baseline survey. This will provide crucial information as to what concerns are common among villages in different contexts and what common indicators might be of value.

In addition, the FITCA-Uganda sociologist is planning to develop participatory development activities in 1-2 villages per District (there are 11 districts in the FITCA project area). Ms. Musoke will collaborate in this activity. This will also provide information on the generalizability of results and tools and be useful in assessing the robustness of approaches proposed based on findings in the 6 IDRC-project villages.

### **d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

To be assessed in year 2. Activities under objective 3 will be a major focus in year 2.

## **2. Administrative Report**

There have been no changes in project staff from those described in the research proposal.

Given the ambitious objectives agreed with IDRC, developing linkages with other projects and groups was viewed as essential to achieve the project's objectives. Excellent progress has been made in developing inter-project synergies. IDRC project activities are linked closely with 4 other projects:

- A project on collective action for natural resource management focusing on economic decision making issues funded by the CG-system wide Collective Action and Property Rights initiative (CAPRI)
- A project on better understanding the epidemiological links between animal and human sleeping sickness and the implications for policy makers and technical staff to better control sleeping sickness funded by DfID (UK)
- The FITCA-Uganda project
- A project funded by the European Union under FITCA to assess the environmental impact of FITCA activities. ILRI is responsible for the aspects associated with monitoring natural resource management and use changes, particularly at village level.

In joint project meetings coordinated by LIRI, collective activities for the five projects have been agreed as follows:

1) Spatio-temporal risk of human and animal trypanosomosis as a function of natural resource endowment and use [DFID, IDRC #1; CAPRI #4]

- 2) Environmental and natural resource changes as a function of human and animal trypanosomosis and its control [FITCA – environmental impact, IDRC #1 and CAPRI #4]
  - 3) Community decision-making with respect to health and natural resource management including human and animal trypanosomosis risk management [IDRC #2 and #3 and CAPRI #3, 4, FITCA, DFID]
  - 4) Economic decision-making for collective action for various trypanosomosis and tsetse control options [CAPRI #1 and #2]
- The individual project objectives to be achieved under each collective activity are noted in square brackets after each activity.

To coordinate activities, frequent project meetings have been held. Two meetings with all stakeholders were held in Tororo, one in May 2000 and one in December 2000. In addition, meetings on specific topics have been held: one on economic research design (at Makerere University, October 2000, sponsored by CAPRI), two on design of FITCA-Uganda baseline surveys (Nairobi, January 2000 and Makerere University, March 2001), and one on trypanosomosis epidemiology (Tororo, March 2000, sponsored by DfID).

Ms. Winnifred Babirye Musoke was recruited as a PhD student and registered at Makerere University beginning June 1, 2000. Winnie is registered in the Department of Women and Gender Studies under the supervision of Drs. Grace Bantebya-Kyomuhendo of Makerere University and John McDermott of ILRI. During the first year Winnie has developed her research plan, submitted a research proposal to Makerere University and accomplished much of the research work described under objective 2. Winnie has made two visits to Nairobi during the study period to consult with ILRI colleagues and Dr. McDermott has made supervisory visits to Uganda at approximately 6 weekly intervals.

Drs. Barry Smit and David Waltner-Toews attended the first project meeting in May 2000 and subsequently held more detailed discussions with Ugandan and ILRI collaborators. Dr. Waltner-Toews also visited East Africa in October as part of another project and took time to participate in the economic research meeting. Drs. Paul Coleman and John McDermott of ILRI each visited Guelph for consultations with Guelph colleagues on the project during the first year of the project.

### **3. Summary**

The project is progressing as planned with work conducted and results obtained under all planned activities for year 1. Important synergies have been developed with other research and development projects that will ensure that the ambitious objectives set for this project can be met and that research results will make important contributions to improving health, natural resource endowments and livelihoods.

We would welcome comments and suggestions from IDRC staff on this project. Dr. McDermott will be in Ottawa July 5-6 and would like, if possible, to discuss this project with IDRC staff at that time.

## Appendix 6

### Annual Report to IDRC (2)

**Project:** Sleeping Sickness, Poverty and Natural Resource Management (Uganda)

**IARC:** International Livestock Research Institute

**Project File:** 100106

**Reporting Period:** April 1, 2001 to March 31, 2002

#### 1. Research Progress

The overall objective of the research project is to develop community-based strategies for improving animal health through the control of sleeping sickness using the most appropriate (feasible, efficacious and sustainable) mix of natural resource management and public health, social or policy interventions.

There are 3 specific objectives of the project. These are listed below together with the work carried out, results obtained, planned activities for the third year of the project, evaluation of progress made, lessons learned and implications for future research.

##### 1.1 Specific Objective 1:

**To establish relationships between attributes of natural resource endowment and use and the risk of human and animal trypanosomosis, both temporally and spatially.**

##### a) Work Carried Out

Given the detailed case data at village level in Tororo and Busia Districts and the preliminary relationships between crudely defined bushland, woodland and swamp vegetation (see Year 1 report), Martin Odiit has focused on refining land use / vegetation classes using a current (February 2001) LANDSAT satellite image to provide a more detailed assessment of spatial risk. This land use / vegetation classification was originally done as an unsupervised classification (just using the most obvious visual clusters in the image) with subsequent ground-truthing. As a result of the ground-truthing, it was decided to completely reclassify the image based on the ground observations and a reclassified image has been developed. Martin is currently conducting a spatial analysis of case distribution based on this new classification. There are still plans to extend the analyses to earlier time periods that span the period of Martin's case series data (1986-present). This work will be done as part of a broader study of spatial-temporal trends.

In January 2002, a University of Guelph PhD student, Lea Berrang, began her PhD program. The topic of her thesis will be *Sleeping Sickness in Uganda, 1900-2000 – an integrated analysis of spatio-temporal risk*. Lea spent the period from mid-January to mid-May in East Africa gaining an understanding of the field situation, searching for and assembling historical data and developing her research proposal. Lea's proposed research will have three main components: (1) a qualitative analysis of trends in

sleeping sickness risk at national level from 1900 to present; (2) a quantitative sub-regional analysis of changing risk patterns in south-eastern Uganda from 1940/50 to present and (3) a more detailed analysis of spatio-temporal changes in village-level risk. Lea is currently in the UK searching for and assembling data and will do her PhD coursework at Guelph from July 2002 to August 2003 and then return to East Africa to conduct further research.

The FITCA project has completed a cross-sectional survey of trypanosome prevalence in cattle in 165 randomly-selected villages that will provide further information on spatial risk. The tests employed to detect trypanosomes have relatively poor sensitivity and ability to distinguish between trypanosome species but will provide a reasonable measure of relative risk of detected infections between the randomly-selected villages.

### **b) Results Obtained**

Vegetation cover and land use maps based on a recent satellite image have been completed by Martin Odiit and his analysis of the relationship between those classes and village-level risk is on-going. Martin has also completed two papers, one on the economic burden of sleeping sickness on local communities and the second on estimating under-reporting of sleeping sickness cases. He estimates that there are 15 unreported deaths for each reported death. One of the main factors associated with under-reporting is distance from a sleeping sickness clinic.

Preliminary historical information on the risk of sleeping sickness and its association with agricultural activity and natural resources has been collected.

### **c) Planned Activities for Year 3**

We had planned to investigate spatial-temporal risk across 4 different time points (February 1980, 1987, 1994 and 2001) spanning the period for which we have detailed sleeping sickness case records at village level. However this activity was not completed during year 2. Some progress will be made on this in year 3 but it is expected that much of this will be done after September 2003 when Lea Berrang completes her courses at the University of Guelph.

One activity, begun in year 2 that will increase in year 3 is collaborating with other groups who have been working on land use and land cover assessment in Uganda. This includes ICRAF and IFPRI, the Land Use and Land Cover Project based at Louvain in Belgium and CIPEC (Centre for the Study of Institutions, Population, and Environmental Change), at Indiana University. All these groups have developed land use / cover assessment methods at differing resolutions that will be evaluated for their utility to answering more specific questions about agricultural change and sleeping sickness risk.

The field-work by the Farming in Tsetse Control Areas (FITCA) project on trypanosomosis risk has been completed. Assistance will be provided in the analysis of this data and in putting it into a GIS database along with existing data layers on population, vegetation type and access to infrastructure (roads, clinics, main towns, etc.).

#### **d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

Progress has been slower in year 2 considering that rapid initial progress in year 1. We expect that faster progress will be made in year 3 as considerable experience in classifying satellite images has been gained by project team members and more support is available from ILRI with the recruitment of a new GIS / land use specialist. Thus, we should be able to complete an assessment of current influences on land use and trypanosomosis risk in the next one year. This work will be linked with results from community-based assessments under objectives 2 and 3. However, the assessment of long-term trends will not be undertaken until September 2003 and will probably take 18 months to complete.

Activities under objective 1 have been funded by the Department for International Development (United Kingdom), the Uganda Government, ILRI, IDRC, FITCA-Uganda and the National Science and Engineering Research Council (Canada).

#### **Specific Objective 2:**

**To determine how communities assess their own agroecosystem and community health, what they consider to be the main factors (natural resource, social, etc.) contributing to poor health (as evidenced by poverty, mortality, etc.), what strategies they consider important to improve health and what indicators they would consider useful in assessing improvements.**

##### **a) Work Carried Out**

The main activity has been the conduct of follow-up visits to the 6 participatory action research villages described in the year 1 report. These visits were made at quarterly intervals by Winnie Musoke, the PhD student sponsored by the project.

Winnie has also devoted a large proportion of her time to revising a research proposal that had been submitted to Makerere University, developing a detailed outline of her thesis in consultation with her supervisors, Grace Bantebya-Kyomuhendo and John McDermott, and in revising her report on the initial village workshops (reported last year). Winnie has also collaborated with the FITCA-Uganda sociologist, Annah Rutebuka, in conducting village surveys to compare villages that have implemented (5) and not-implemented (5) community-level projects to construct and maintain spray races for the control of ticks and tsetse flies.

##### **b) Results Obtained**

Of the 6 participatory action research villages, 1 has made considerable progress in implementing their community action plans developed in year 1, 3 have made modest progress and 2 have made only very limited progress. Our initial strategy is to facilitate community identification, evaluation and implementation of action plans to firmly establish their ownership of the participatory research activity. The villagers recognize that they are responsible for the process, unlike in traditional NGO / GO projects that they are used to. With this principle established, it is now planned to have follow-up community workshops to revisit the issues raised in the initial village workshops held

in late 2000 so that communities can reevaluate their progress and revise action plans based on their experiences to date.

### **c) Planned Activities for Year 2**

Activities to support and follow through on the village-led initiatives started in years 1 and 2 will continue. Early in year 3, village workshops to reevaluate the initial community action plans will be held. Depending on the outcome of those village evaluations we may modify our activities in the 6 study villages (see section d below).

### **d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

The project benefited from a visit by Michael Bopp, an IDRC consultant assessing the IDRC agro-ecosystem health program. Although not the primary objective of his visit, Michael provided very useful insights into progress on this objective. His main advice was:

1. it would be useful to hold village workshops to reevaluate the initial community action plans and progress made;
2. village support networks, both the village support teams established (see year 1 report) plus NGO links, need to be improved to support villages better; and
3. village monitoring and evaluation efforts need to be better supported.

Michael also advocated more direct research collaboration between villagers and the project's multi-disciplinary research team.

Based on Michael's input and the experience of project staff in year 2, the following plans for year 3 have been made. First, a village workshop will be held to re-evaluate the initial community action plans. In response to the outcomes of the village workshop, specific activities will be strengthened as required as well as more generic support through the village (sub-county) support teams and links with NGOs working locally or on activities that are a village priority. Also as a result of the village re-evaluation workshops we plan to promote greater village capacity for monitoring and evaluation and greater opportunities for links with researcher monitoring and evaluation. These activities will need to extend beyond March 31<sup>st</sup> 2003 if they are to provide more than preliminary results.

To reiterate a point made in the first annual report. In this village participatory action research, there are two key questions we are grappling with that are not easy to address in a 3-year project. The first is how to assess the sustainability of activities. Our strategy will be to focus on developing village capacity and resilience. The second is how to extrapolate lessons learned from individual, intensively-followed communities to inform wider development activities. This will be the focus of activities under specific objective 3.

Activities under this objective have been funded by IDRC, FITCA-Uganda and ILRI.

### **Specific Objective 3:**

**To assess which community and researcher developed natural resource, social and community health indicators have general utility across communities and regions and which indicators are location specific and to develop participatory community research and development approaches that support the implementation and improvement of natural-resource based strategies to improve health and reduce poverty.**

**a) Work Carried Out**

Subsequent to developing the plans for a large-scale village survey of 165 random-spatially-sampled villages with the FITCA Uganda project in year 1, a survey methodology has been developed and pre-tested in 11 villages in year 2. The methodology drew from experiences under objective 2 and from experience in previous projects. However the training of district staff and the implementation of the survey have been delayed until the FITCA project is ready to proceed. This is now expected to be in August and September 2002.

**b) Results Obtained**

No results were obtained on this objective.

**c) Planned Activities for Year 2**

The same plans, postponed from year 2 to year 3 remain, namely: "In collaboration with the FITCA-Uganda project, results and proposed indicators from the 6 IDRC-project villages will be used in developing a rapid appraisal instrument to provide descriptive information on topics covered in the 6 village workshops for all the 165 villages in the FITCA baseline survey. This will provide crucial information as to what concerns are common among villages in different contexts and what common indicators might be of value."

**d) Evaluation of Progress, Lessons Learned, Changes in Future Research**

Clearly the delays encountered mean that additional time beyond March 31, 2003 will be needed to meet this objective. We now expect that an initial analysis of the large-scale village survey will not be completed before early 2003 and thus their integration with outcomes from objective 2 and assessment within the FITCA-Uganda project and other settings will go beyond March 31, 2003.

**2. Administrative Report**

There have been no changes in project staff over the past year.

As noted in the first annual report, given the ambitious objectives agreed with IDRC, developing linkages with other projects and groups was essential. These linkages are well established and while they strengthen the medium and long-term prospects for the impact and sustainability of activities initiated under this project, maintaining these linkages has also led to some activities proceeding more slowly than anticipated. The other projects linked to the IDRC-funded component include:



- A project on collective action for natural resource management focusing on economic decision making issues funded by the CG-system wide Collective Action and Property Rights initiative (CAPRI)
- A project on better understanding the epidemiological links between animal and human sleeping sickness and the implications for policy makers and technical staff to better control sleeping sickness funded by DfID (UK)
- The FITCA-Uganda project
- A project funded by the European Union under FITCA to assess the environmental impact of FITCA activities. ILRI is responsible for the aspects associated with monitoring natural resource management and use changes, particularly at village level.

The first 2 projects have progressed relatively rapidly, particularly the second project, funded by DfID, that functions as an independent research project. The two EU-funded FITCA projects have progressed more slowly than anticipated. Thus, project activities linked to the FITCA projects have been delayed (e.g. village surveys and data from trypanosome prevalence and tsetse challenge surveys). Joint project meetings coordinated by LIRI, based on the joint objectives of the 5 projects have continued and collaboration between researchers and administrators of these projects has been good. Joint project meetings were held in May, August, October and December 2001 and in January 2002. The second was held at Makerere University and the rest at LIRI, Tororo.

Ms. Winnifred Babirye Musoke has continued as a PhD student, registered at Makerere University. During year 2 Winnie made 3 visits to Nairobi to consult with Drs. McDermott and Gitau, and attended a workshop on collective action methodologies held in Nyeri, Kenya co-ordinated by IFPRI and ICRAF (under IFPRI's collective action and property rights initiative). In addition, Dr. McDermott made supervisory visits at approximately 2-monthly intervals. The Makerere University supervisor, Dr. Grace Bantebya-Kyomuhendo has been occupied organizing an international meeting and has had some health problems but is now able to meet with Winnie more regularly.

Dr. David Waltner-Toews attended a joint project meeting held at Makerere University in August 2001 and held more detailed discussions with Ugandan and ILRI collaborators. Dr. McDermott visited the University of Guelph in both June 2001 and January 2002 (financed from other sources) and had discussions with Drs. Waltner-Toews and Smit on the project. Ms. Lea Berrang began field work on temporal-spatial analysis of sleeping sickness risk from mid-January to mid-May 2002.

### 3. Summary

The project has progressed more slowly than anticipated in the second year, primarily because of delays faced by our Ugandan collaborators. The important synergies developed with other research and development projects have been maintained. These will be crucial in helping to meet as much as possible the ambitious objectives set for this and its collaborating projects. We anticipate making substantial progress in year 3 but also anticipate that some key project activities will need to be extended beyond the current project completion date of March 31, 2003.



We would welcome comments and suggestions from IDRC staff on this project.