

## Enhancing innovation processes through local competitive agricultural technology funds in Uganda – experiences and lessons learnt

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### Abstract

Throughout the world, stakeholders in agriculture are demanding greater participation in the research process. The competitive allocation of public R & D resources to promote institutional pluralism and partnerships in delivering research services currently account for over 12% of all agricultural research funding worldwide. The “Client-Oriented Agricultural Research and Dissemination Project” was set up by the National Agricultural Research Organisation in eastern Uganda, to test locally-governed competitive agricultural technology funds (CATFs) as a means of enhancing innovation processes by strengthening client-orientation in research & dissemination service delivery. Key design criteria for the CATFs included: increased stakeholder involvement in decision-making, management and the funds award process; increased pluralistic provision of research & dissemination services; mobilisation of under-utilized capacity & infrastructure; Increased use of contractual approaches; and strengthened accountability to clients. Operational procedures are outlined; and lessons learnt and advantages and disadvantages of this approach to research management are discussed.

**Key words:** Agricultural research management, funding, R&D resources

### Introduction

As agriculture becomes increasingly liberalized and commercialised, public research systems are having to embrace wider goals of poverty reduction and environmental preservation, as well as serving a wider variety of clients (*i.e.* policy makers, environmental groups and consumers as well as farmers), all demanding greater participation in the research process (Byerlee *et al.*, 2002). Attempts by public research systems to address these new challenges include institutional pluralism and partnerships in delivering research services, competitive allocation of public R & D resources (currently accounting for over 12% of all agricultural research funding worldwide; Byerlee *et al.*, 2002), and mechanisms to strengthen links with stakeholders.

Uganda has adopted poverty eradication as its primary development objective, and is pursuing a policy of decentralisation in all aspects of government, including provision of agricultural advisory services (PMA, 2000) and more recently agricultural research services. In 2000 the National Agricultural Research Organisation (NARO) established the “Client-Oriented Agricultural Research and Dissemination Project” in eastern Uganda, as part of its efforts to enhance innovation processes by increasing stakeholder participation and client-orientation in agricultural research. The project is piloting locally-governed competitive agricultural technology funds (CATFs) as a means to enhance innovation processes, establish strategic

partnerships and strengthen client-orientation in research & dissemination service delivery in the region.

The introduction of a competitive funding mechanism means considerable institutional change; not only in the host organization and its partners, but amongst stakeholders in general (GTZ, 2001). Whether the introduction of a CATF really leads to enhanced innovation and development benefits depends on a number of conditions such as the number of potential applicants to the fund, the experience and ability of rural society to supervise and enforce contract arrangements, and the legal framework (Echeverria, 1998). Institutionalising a CATF takes time as all participants in the institutional arrangement have to learn to perform their roles adequately (GTZ, 2001). Table 1 summarises some of the major developmental objectives and associated issues in strengthening client-orientation in service delivery through CATFs.

Following stakeholder consultations in 2000, the project facilitated the establishment of an independent funds management committee to review proposals, award funds, monitor progress and report back to constituent stakeholders. As of December 2003, the committee had reviewed 590 applications and approved 43 for funding; 39 projects had been funded, involving over 50 Government offices and 40 CSOs, with over 3,400 farmers (1,382 women, 1,889 men and 115 youths). All funded projects are collaborative efforts of several organisations; 23 of which were led by NARO scientists, 11 by NGOs, and 5 by government organisations.

This paper examines the experiences and lessons learnt, with regard to the development objectives listed in Table 1.

## Experiences and lessons learnt

### *Increased stakeholder involvement in decision-making and management*

#### *Selection of representation of farmers and other stakeholders*

The single most important aspect of the project was the establishment and operation of the fund management committee. Preliminary meetings with stakeholders considered various ways in which farmers, and community-based organisations in general, could be represented on the Fund Management Committee. It was concluded that district-level public extension, NGOs, the private sector and farmers organisations should be represented, as well as NARO and Makerere University (Table 2). Later, a national-level representative of the revised public extension system “NAADS”, was included. The stakeholders recommended that representatives of farmers, NGOs, public extension and the private sector should be elected through an “Electoral College” framework (Figure 1), by secret vote, with NARO acting as observer only. Representatives of NARO, the University and NAADS could be selected by the heads of those organisations (Table 2). Agreed criteria for nomination to the electoral college were:

- Acceptable to those (s)he will be representing;
- Willingness and availability to attend meetings and retreats;
- Willingness and availability to review proposals in their own time and in meetings; Broad-based experience in agriculture;
- Member of an organisation/ group with a high reputation for performance and integrity;
- Familiarity with participatory approaches to development;
- Previous experience in monitoring & evaluation;
- Fig 1 around here

Articulate communicator and ability to present ideas clearly (written and verbal);

Previous collaboration with NGOs/ Research/ Farmers/ Extension; Gender balance. However, only three of the 24 representatives sent to the Electoral College were women, and none of these were finally elected to the Fund Management Committee. All those elected fulfilled all other criteria admirably. A greater degree of gender balance might have been achieved if a certain proportion of positions had been initially reserved by the stakeholders.

#### *Committee Procedures*

The operation of a committee with members of widely different backgrounds and experiences poses its own challenges – in this case, the tendency of the “professionals”

to dominate discussions. Procedures to address this that emerged as most effective were:

- Formal voting by show of hands on all issues;
- Requiring all members to write their comments and observations on concept notes and proposals on cards; and using these cards to guide short discussions on each proposal;
- Agreeing criteria for evaluating concept notes and proposals (Table 4);
- Scoring proposals and concept notes according to the agreed set of criteria;
- Reviewing only the highest scoring proposals

#### *Identifying demand for research and dissemination services*

Research priorities were derived from participatory needs assessments carried out in 1998 and 1999 (Akwang *et al.*, 1998, 1999) by NARO scientists, public extension and NGOs. Using a set of participatory procedures and techniques, agricultural problems and opportunities facing smallholder farmer communities were identified, classified as either research, extension or policy issues, and synthesized for the Teso and Lango farming systems. The agreed priorities were publicised and scientists and development workers were invited to present research proposals addressing these priorities.

Proposals demonstrated demand for particular services in a variety of ways:

- By reference to the needs assessment studies;
- By reference to PRAs or needs assessments carried out in the region by other organisations;
- By reference to written requests from public extension, farmers, farmer groups and other CSOs for particular services or products (access to improved seeds and breeds, training in particular technologies, etc.)
- By reference to the results of proposal preparation grants. These were established to facilitate potential applicants to meet with potential implementation partners and with farmer groups to develop project proposals and concept notes. This was a particularly effective aid to proposal development – almost all proposals developed following a preparation study clearly demonstrated demand, practical working arrangements with partners, and attainable objectives. There were relatively few applications for preparation grants however; mainly because applicants feared missing a chance to apply for the main project funding.

All of the above were effective in demonstrating demand. The project preparation grant was particularly effective and the mandatory incorporation of this into other competitive funds should be seriously considered when setting up competitive funding systems.

The principal weakness of the approaches above was the difficulty in priority setting on the basis of the information

provided, as discussed below.

### ***Prioritising research and dissemination services***

The priorities synthesized from the participatory needs assessments of the region provided the overall framework for evaluating proposals and concept notes. The committee used these, together with their own expert knowledge of development opportunities and constraints in the region, to judge the need for, and potential impact of the different project proposals. These procedures resulted in democratic and stakeholder-owned decisions broadly in line with local and national policy, and projects that addressed farmer-demand; but observations of the process suggested one major weakness: *The potential impact of research interventions* were not included in the original needs assessment studies, and so were not systematically discussed with farmers and other stakeholders. This was partially addressed by relying on the expert knowledge of the committee members, who considered potential impact when scoring proposals (see Annex 1 for criteria used). A more systematic approach to judging potential impact, integrated with the original needs assessments, however, should have resulted in a better-focused set of guiding priorities, clearly derived from farmers and stakeholders instead of just from their representatives.

### **Increased transparency in funds award process**

#### ***Separation of funding & implementing projects***

The separation of research/dissemination service delivery from funds award and management has often been recommended to ensure demonstrable impartiality in the funds award process (Gill and Carney, 1999; GTZ, 1999). However, the same reviewers also note that this may not always be practical; *especially* if there is only a small pool of professionals in a country. In such a case, excluding some professionals from service delivery may lead to loss of efficiency and performance in the national research/dissemination system.

Given the relatively small size of the Uganda research/dissemination “pool”, it was agreed that complete separation was impractical, and NARO would establish a project management unit to administer the funds according to the decisions of the Funds Management Committee. Experience to-date in finding established professionals to undertake independent reviews of proposals and technical reports is testimony to the practical difficulties that result from the desire to have a very clear separation of the two types of services.

Stakeholders remain sceptical that the project management unit is truly independent, however, and it is concluded that it would have been better if the project management unit was demonstrably separate from the main service delivery agency.

#### ***Use of merit-based criteria for funds award***

A set of criteria were developed with the committee for review of applications (Table 4). Each committee member

reviewed applications separately, and the applications with the top average scores were discussed individually by the committee, until the funding ceiling was reached. Comments and observations are recorded on cards, and discussions on each application follow the themes revealed by the cards. Formal votes on whether to accept or reject the applications are recorded. Observations of this process indicate:

- Committee members of differing backgrounds *may* interpret criteria differently – it is useful to pre-test these before use;
- Review of scores and discussions reveals little individual bias;
- The use of a relatively large committee (17 members in total) reduces any possibility of individual bias influencing results;
- Writing comments on cards and debating each application according to the common issues revealed by the cards is an effective and speedy way of ensuring that all members’ opinions are voiced and recorded;
- Analysis of the scores indicates good agreement between the scores of the specialists (project management unit, senior NARO management) and the overall committee [overall 70% of those applications which the specialists would have selected were in fact selected by the committee, Table 3];

A weakness of these procedures is that where members have widely differing views on an application, its average score may be reduced to the point where it is not discussed because the funding ceiling has already been reached. A solution to this would be to start with a discussion of contentious applications – those with a standard deviation greater than 33% of the mean, for instance.

#### ***Different criteria and procedures for different types of research services***

Different types of research and dissemination services are needed to respond to different types of problems/opportunities. For instance, issues of marketing systems, gender and livelihood implications of improved technologies, different socio-economic groups access to resources, *etc.* are issues raised by stakeholders that require a socio-economic focus. The criteria listed in Table 4 are not very useful in addressing socio-economic projects - many social sciences methods to address particular issues are not based on participatory approaches *per se*, but are the most appropriate for addressing that issue. More important criteria are the design of the research questions, how the sample frame is developed and sample chosen, how the information is elicited, and how the data is analyzed.

It is recommended that the use of specialised calls, together with specialised review criteria and procedures, be embedded in the development of future competitive funds.

**Table 1. Development objectives and issues associated with strengthening client-oriented approaches for agricultural research and dissemination through CATFs**

Objective <sup>†</sup>	Issues
1 Increased stakeholder involvement in decision-making and management	a. How are farmers and other stakeholders represented? b. Demonstrating demand for research & dissemination services c. Priority-setting for research & dissemination services
2 Increased transparency and effectiveness in funds award process	a. Separation of financing and implementing research/ dissemination services b. Use of merit-based criteria for funds award c. Different criteria and evaluation procedures for different types of research services
3 Increased pluralistic provision of research & dissemination services	a. Capacity to provide research and dissemination services b. Conditionalities & “level playing field” for all service providers c. Participation and partnerships d. Financial management e. Private sector involvement
4 Mobilisation of under-utilized capacity & infrastructure	a. Provision of operational funding only may lead to reduced priority given to competitive project
5 Increased use of contractual approaches	a. Experience & ability of organisations & stakeholders to supervise & enforce contract arrangements b. Flexibility: responding rapidly to new needs & opportunities
6 Increased accountability to clients	a. Participatory approaches to M&E b. Communications and understanding clients media preferences & needs

<sup>†</sup> Developed from Gill & Carney (1999), GTZ (1999, 2001), Echeverria (1998)

**Table 2. Fund Management Committee**

Appointed Members		Elected Members	
Institution	No.	Institution	No.
Director of Research, NARO	1		
Head, Project Support Unit	1	Public Extension, Teso and Lango	2
Director, Monitoring and Evaluation, NARO	1	NGOs, Teso and Lango	2
Agricultural Research and Dissemination Centre	2	Farmer Groups, Teso and Lango	2
Managers, Teso and Lango			
Makerere University	1	Private Sector, Teso and Lango	2
National Agricultural Advisory Services	1		
Project Technical Advisers	2		
<b>Total</b>	<b>9</b>		<b>8</b>

**Table 3. Comparison of concept note ranking by the project management unit, compared to that of the whole committee**

	Number of CNs in the project management unit selection that were also in the whole committee selection			
	Round 1	Round 2	Round 3	Round 4
Top 10 Concept notes	7	7	9	8
Top 15 Concept notes	11	12	14	13
Top 20 Concept notes	16	16	-	17

**Table 4. Project review score sheet**

Criteria	Score 5=v.good 1=v.poor	Explanatory Notes For The Project Review Score Sheet
Project Code No.:		
1	Institutional collaboration	Strength & relevance of stated partnerships with GO/ NGO/ IARCs / CBOs/ Farmer Groups/ Universities/ Colleges, etc ?
2	Inter-disciplinary team and approach	Relevant disciplines represented and working together as a team
3	Technical capacity of Project Leader	
4	Technical capacity of implementers	
5	Quality of Background & Justification	Is proposal based on up-to-date knowledge of related research, available technologies, their use & market for outputs ?
6	Methodology	Are experimental design and/or procedures appropriate for problems addressed ?
7	Approach	Is the project approach participatory, innovative, sound?
8	Activities & Workplan	Is the timing of activities realistic? Are the activities sufficient to achieve outputs ? Are they necessary ?
9	Cost Effectiveness (Budget)	Are activities & inputs reasonably budgeted?
10	Feasible project outputs	Can the project outputs be achieved through the described activities?
11	Feasible ways of disseminating project outputs	Are the dissemination activities realistic, properly budgeted & included in workplan?
12	Realistic, measurable indicators	Are the Objectively Verifiable Indicators realistic measures of project outputs (QQT)?
13	Economic viability	Will the technology/ service be <i>affordable</i> to small-holder farmers, and will it be profitable?
14	Demonstrated client-demand	Does the proposal <i>demonstrate</i> client demand for the stated outputs?
15	Identified beneficiaries or end-users	Does the proposal describe an identifiable community of beneficiaries or end-users of the project outputs?
16	Transferability to other areas/ end-users	Will project outputs be useful to other areas/farmers?
17	Gender	Will project outputs impact positively on disadvantaged sectors of the community (women, youth, elderly, <i>etc</i> )? Is this indicated clearly in the proposal?
18	Impact on poor people	Will project outputs impact positively on poorer sectors of the community? Is this indicated clearly in the proposal?
19	Contribution to NARO/DFID project outputs	Will the project's purpose contribute towards achieving NARO/DFID project outputs?
20	Logical framework	Does the logical framework provide clearly stated purpose, outputs, indicators and assumptions ?
TOTAL		

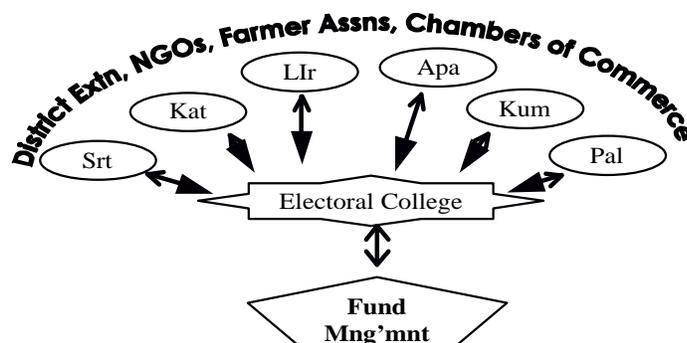


Figure 1. Election of fund management committee members

### ***Increased pluralistic provision of research & dissemination services***

#### ***Capacity to provide research & dissemination services***

Pluralistic provision of R & D services can only be achieved if capacity exists in multiple organisations. This may not always be so, and should be evaluated before setting up a competitive funding system. In the case of eastern and northern Uganda, indications were that capacity did exist. Over 590 applications were received and 39 projects funded, indicating that according to the fund management committee at least, modest capacity does exist in the region. 23 of these projects were led by NARO scientists however, indicating that the main source of agricultural research capacity is within the national research system, as would be expected. Significant capacity exists outside however – 11 projects are led by NGOs for instance.

An independent review of the projects annual technical reports in 2002 noted several implementation issues, but endorsed the overall selection of projects and their research/dissemination objectives. NGO participation has suffered from abrupt staff changes resulting in loss of capacity to provide a particular input. Similarly, sudden departure of government and university staff on advanced training courses has also resulted in loss of capacity to provide particular inputs. Particular capacity issues are discussed further below.

#### ***Conditionalities and “level playing field” for all service providers***

Conditions imposed by the project include: no payment of salaries, no purchase of capital equipment, no support to higher degree training. These influenced the ability and interest of NGOs and Universities to compete – government employees’ salaries are paid by GoU whereas NGOs normally include salaries in their project budgets – University staff often need research projects to contribute directly to post-graduate degrees, *etc.* A solution would be to allow a fixed percentage overhead (33% ?) for all applicants, government institutions included.

#### ***Participation and partnerships***

Review of the project proposals, training workshops, and monitoring of the CATF-funded projects indicates considerable variability in the type and quality of participation practised – roughly  $\frac{3}{4}$  could be classified as or contractual or collaborative participation (following Biggs 1989 classification), and only  $\frac{1}{4}$  as collegiate. Internationally supported NGOs seem to have the highest capacity for proposal writing & implementing collegiate-style, participatory type projects, but generally have to out-source technical expertise. Many NARO staff also have good capacity for proposal writing & implementing participatory type projects, that can be classified as collaborative or contractual. Local NGOs and local government extension staff seem to have least experience with proposal writing and participatory approaches. Most, but not all, university-

led proposals received were extractive in nature, with farmers’ roles seen as testing solutions designed by university staff.

Ideas of partnership in agricultural research are relatively new in Uganda’s research and education systems and although some researchers have been utilising partnership approaches for some time, overall experience in the national research system is limited to-date (Tenywa, 2002, Mangheni, 2002 personal communications). Project experience so far is that internationally supported NGOs seem to have the highest capacity for partnership approaches to projects, followed by NARO – most of the projects led by these agencies have developed Memoranda of Understanding between the different partners and with farmers. [It is normal practise for most international NGOs to work in partnership with government departments in Uganda, with government staff providing technical skills for projects.] Most proposals developed by university staff, local NGOs and local government have presented more individualistic approaches with relatively limited institutional partnerships. In all cases some partners are invited to provide very specific inputs, and only a few projects routinely involve all project implementers in periodic reviews and monitoring. Approximately  $\frac{1}{2}$  of supported projects developed Memoranda of Understanding with project implementers and farmers – it is strongly recommended that all pluralistically implemented projects be required to do so.

#### ***Financial management***

A pluralistic approach to service delivery brings special financial management problems. Few organisations have exactly the same procedures for accounting and disbursement, and often have different schedules as well. All CATF-supported projects have been tardy in accounting for funds received, reducing the amount of funds in circulation that can be advanced to projects when they do account. Comments that delays in funds receipt have delayed project implementation indicate a continuing difficulty of many implementers to appreciate the implications of the funding cycle on financial management.

The project has tried both quarterly and monthly accounting schedules, and recommends the monthly schedule as the safest and most effective.

Common delays in financial management include relatively poor and very slow financial services by rural banks, helping farmers groups and other partners to understand correct accounting procedures, and difficulties in getting financial staff of big organisations of the need to adapt their customary practises to accommodate those of other partners engaged in pluralistic service delivery. Time is required for organisations to adapt their systems to new ways of doing things, and this should be allowed for in the design of pluralistic service delivery systems.

All of the above, and the “normal” implementation delays experienced in on-farm research and pluralistic service delivery, mean that slippage in implementation schedules is inevitable – the design of pluralistic service delivery systems should also take this into account.

***Private sector involvement***

Local companies and entrepreneurs found little to attract them in the project – group and individual discussions indicated predominant interests in “safe”, known enterprises (e.g. maize mills) and little interest in new and untested technologies. Projects on post-harvest processing and animal health vaccines have managed to attract some interest and participation from private sector agencies, but on a very small scale, and principally as interested observers.

***Mobilisation of under-utilized capacity & infrastructure***

NGO, university and local government organisations that are awarded funds provide their own technical, administrative and logistic facilities, and “farmer catchments”. All of these resources are mobilised towards achieving NARO’s mission in Uganda, and so represent a substantial mobilization of additional capacity for NARO and for agricultural development in the region. As a result the project worked with over 3400 farmers, 69 farmer groups and 90 organisations, with only modest physical resources.

The inevitable disadvantage of this is that those organisations that apply must have alternative core funding and activities. The core activities take precedence over the additional project(s) won through competitive systems and/or as partners to other organisations initiatives. Consequently technical and financial reporting is of lower priority, and often delayed when timetables clash.

**Increased use of contractual approaches*****Experience and ability of organisations and stakeholders to supervise and adhere to contract arrangements***

Many local organisations have limited experience in precise adherence to the schedules and details of contracted agreements. Similarly, most government research and dissemination organisations’ predominant experiences have been with institutional block-funding. Under institutional block-funding, management usually has much greater leeway in resource allocations – a trusted implementer may easily secure additional funds for interesting issues arising from on-going research, for instance. Accordingly, contractual agreements for agricultural research/dissemination projects, which have traditionally been done another way, are often taken as broad guidelines rather than precise requirements. Project implementers have been surprised and disappointed to find that such follow-on funds cannot be allocated without reference to all other new requests for funding, using the same criteria as those for new applications. This inexperience of some implementers has also been reflected in project proposals that whilst complete in themselves, were designed with a crucial follow-on in mind. Such follow-up projects were considered using the same criteria and procedures as all other projects being considered, and were not always successful.

***Flexibility***

Related to the above is the problem of addressing additional activities not budgeted for originally/ responding rapidly to new needs & opportunities – too much flexibility allows project to become something different from that approved by the committee, too little can result in project failing to achieve purpose. This can be partially addressed by building some flexibility into the competitive system, rigorously based on the to risks & assumptions identified in projects’ log-frames.

**Increased accountability to clients*****Participatory approaches to M&E***

Beneficiary involvement in monitoring and evaluation is a key aspect of accountability to clients. The use of *ex ante* assessments of the likely impact of the project by beneficiaries and implementers (Oruko, 2002), and using these assessments to develop monitoring indicators is a relatively simple and effective way of promoting participatory monitoring and evaluation, and ensuring adequate accountability to clients.

***Communications and understanding clients’ media preferences and needs***

Client involvement, understanding and endorsement of project outputs may be hampered by communication issues – both for participating clients, and those not directly involved in the project itself. Accordingly, the design of the project proposals require applicants to develop information materials with their participating farmers, and for relevant uptake pathways, if appropriate. Leaflets, brochures, manuals, posters, a video and audio cassette have been produced with participating farmers, and more are being finalised. Whilst the technical quality has proved to be variable, this is an important aspect of accountability to clients and is strongly recommended as standard practise for all client-oriented projects.

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