

Testing alternative approaches for research and development in Uganda: The experience of Mukono Agricultural Research and Development Centre (ARDC)

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Abstract Previously, a number of development partners and the National Agricultural Research Organization (NARO) felt that there was not enough improvement in the livelihoods of the people as a direct result of investment in agricultural research. National Agricultural Research Organisation (NARO) created a directorate of outreach ARDCs to get more closely involved with stakeholders in agricultural research and development (R&D) for better livelihoods. Mukono ARDC initiated a pilot study in multi-stakeholder participatory approaches to conduct smallholder farmer-led research in Kayunga and Mukono districts in Central Uganda. The main objectives were to involve smallholder farmers and other stakeholders in identifying constraints to agricultural development, setting a desired future vision, identifying potential solutions and working towards the desired future in two selected districts in central Uganda. A platform was provided for relevant stakeholders to come together to contribute knowledge and experience to the planning process. A Coordination Committee was elected to implement a joint action plan developed by stakeholders. While implementing the study, farmers' research capacity to work in groups was enhanced through group dynamics training. A total of 13 loose farmer groups, composed of 109 and 67 women and men, respectively were formed. Technology options were provided to farmers for innovation and to provide feedback on performance of technologies. Innovation contests were organized among farmers and also primary and secondary schools. The participatory nature of the approach saw the concept grow/evolve from Integrated Crop Management (ICM) to Revitalization of Smallholder Agro-ecosystems, Integrated Farm Management (IFM) and finally, Integrated Rural Resources Management (IRRM). Acceptance by traditional/conventional researchers was one of the challenges to the approach. Researchers had little appreciation of the wealth of knowledge that smallholder farmers have about their circumstances. Clear identification of researchable issues and ensuring multifaceted approaches to validating farmers' practices was another challenge. Sustaining the coordination committee to ensure multi-stakeholder implementation of agreed action plans also posed a big challenge.

Key words: Livelihoods, participatory planning, schools, technology options, visioning

Résumé Auparavant, un nombre des partenaires de développement et les organisations nationales de recherche agricole « ONRA » ont découvert que, il n'y avait pas de changement suffisant dans les activités génératrices de revenus de la population comme un résultat direct d'investissement dans la recherche agricole. Organisations nationales de recherche agricole « ONRA » a créé un comité directeur pour trouver plus fermement impliquer avec le soutien en recherche agricole et développement pour les meilleures activités génératrices. Le centre de recherche agricole et développement de Mukono a initié une étude pilote en multi appui d'approche participative pour conduire les petits fermiers de mener la recherche en Kayunga et dans le district de Mukono au centre de l'Uganda. Les objectifs principaux étaient d'insérer les petits fermiers et autres bailleurs d'appui en identifiant les contraintes de développement agricole, détermine une vision future désirée, identifient les solutions potentielles et travail vers le future désire dans les deux districts sélectionnés au Centre d'Ouganda. La plate forme des bailleurs était forme conventionnellement de contribuer ensemble par les connaissances, l'expérience au processus de planification. Un comité de coordination était élu de faire le plan d'action conjoint de développement. Pendant qu'ils agréaient l'étude, la capacité de travail des fermiers en groupe était augmenté à travers la formation de groupe dynamique. Un total de 13 groupes de fermiers compose respectivement de 109 femmes était forme et 67 hommes ont manque était forme. L'option de technologie était donnée aux fermiers pour l'innovation et de fournir la réponse sur la performance de technologie. Un débat d'innovation était organisé parmi les fermiers et aussi les écoles primaires et secondaires. La nature participative de l'approche a vu le concept grandir graduellement de management de récolte intégrée de revivre l'agro écosystème des petits propriétaires de terrains. La gestion de fermes intégrées «G.F.I » et finalement la gestion des ressources rurales intégrées « G.R.R.I ». L'accord par le traditionnel était l'un de défi de l'approche. Les chercheurs avaient peu d'appréciations de connaissances que les fermiers ont sur leurs circonstances. Identification claire des solutions et l'assurance d'approche multiples de la valeur des pratiques de fermiers était un autre défi. Soutenant le comité de coordination d'assurer les conventions de multi appui, de plan d'action agréé a pose aussi un grand défi.

Mots clés: Surne, planification participative, icle, option technologique, vision

Introduction

In the past the National Agricultural Research Organization (NARO) was criticized for not being conspicuously "visible" on the ground and not contributing enough to

improvement of farmers' livelihoods (Anon, 2003). Donors and national politicians alleged that there was not enough to show for the well-trained staff in NARO and the technologies that go to meet the needs of the farmers. The low adoption of technologies by farmers was attributed

to the inappropriateness of the technologies developed to meet the farmers' needs. Criticism was also made of the methodologies used in disseminating those technologies. This called for a change in the approach of developing technologies. The processes used in generating technologies needed to take on more participatory approaches with the stakeholders. If agricultural research was to be made relevant there was need for full participation of stakeholders, especially the farmers, in the entire process of technology development (Chambers *et al.*, 1989).

Having recognized the need for multi-stakeholder collaboration for accelerating Agricultural Research and Development, Mukono ARDC explored an alternative approach. While carrying out stakeholder analysis it is important to consider potential impact (negative and positive) of institutions operating in target communities. In collaboration with the Agriculture and Rural Development Department of the World Bank, a pilot study in multi-stakeholder participatory approaches to conducting smallholder farmer-led research was initiated in Kayunga and Mukono districts in Central Uganda. The main objectives were to involve farmers and other stakeholders in assessing current levels of livelihoods, identifying constraints, looking for potential solutions and working towards a visioned desired future.

Innovative institutional approaches

Multi-stakeholder participatory planning. A project (named Integrated Crop Management, ICM) was initiated to learn more about the farmers' current practices in order to develop appropriate research interventions. A planning workshop was convened at Mukono ARDC to provide a platform for the various stakeholders to come together to contribute knowledge and experience to the planning process. Participants included farmers from two districts (Kayunga and Mukono). More women farmers were invited because they do most of the smallholder farming in Uganda (Fonteh *et al.*, 1998). Other participants were included farmers, from local government leaders, Research Institutes, ARDCs, Agricultural Research Information Service (ARIS), Private Sector, and NGOs. and local government Current relationships among agricultural service providers were identified and visually presented. Land and farm management strategies, and future visions for land and farm management strategies and relationships among agricultural sector service providers were presented. Priority elements were identified and a consolidated matrix for the action plan formed. The immediate need that was identified and required immediate action was provision of planting material of improved varieties and breeds for farmers to adapt, adopt and scale up. The Centre was tasked with availing the planting materials.

Identification of partners and formation of a Coordination Committee. At the end of the workshop a nine-member multi-stakeholder committee that included farmers, scientists, extension workers, private sectors and local leaders consisting of all different stakeholders, was

elected. The committee was mandated to advise and approve any modifications to the action plan during implementation in order to meet the location specific needs of the farmers. Its diverse composition ensured a blend of ideas that enriched the process. implement the action plan.

Identification of partners. Different stakeholders and institutions were identified during the pre-workshop planning process. However, when During the implementation of the project started in the target parishes more stakeholders were identified. to facilitate implementation of the project. The major stakeholders identified They included were political leadership (at village up to district level), coordinators of the National Agricultural Advisory Services (NAADS) and farmer research groups. Others were community-based organizations (CBOs), non-government organizations (NGOs, e.g. Kulika, Caritas, Envalert), primary and secondary schools in the operational area. Later, a partnership workshop was called to identify roles and agree on a partnership action plan (Table 1). At the meeting it was noted that improvement of livelihood could not be achieved by provision of agricultural technologies alone. Different actors needed to work together to bring about positive change in the livelihood of rural communities no single establishment/institution could bring about desired change among farmers single handedly. E However, each of the partners had a different role to play and provided useful information to guide the discussion comparative advantage of doing things over others. In general terms the partners were able to guide farmer groups in their respective areas of operation as well as being a source of technical advice.

Building farmer capacity through group dynamics training. When field activities (visioning and documentation of ICM practices) started in the target parishes it was noted that farmers were working as individuals. This would also strengthened the capacity of the farmers to demand for agricultural and other development services. When activities started in 2001, there were 53 farmers in three loose groups in Namaliri parish in Kayunga. Farmers underwent 4-day training sessions in farmer research group dynamics. By the end of 2003 tAt the moment there are were 13 farmer groups made up of 176 farmers (Table 2).

Technology options availed to farmers. Mukono ARDC availed technology options to selected farmers for performance evaluation. technology options to selected farmers for performance evaluation. The available quantities could not meet the needs of all the farmers. These were new varieties/breeds of crops and animals that were already in use by farmers. On top of the recommended management practices by research, farmers were advised not to totally abandon use of proven local varieties and practices that "work". They were also requested to try out innovations and provide feedback on suitability and practices adopted. The identified practices were described and documented.

Table 1. Partnership action plan.

Interactions	Why	What	With who	How	When/where
Strengthened and linked farmers groups	Combine ideas create unity Change attitude	Mobilisation Up lift standard of living Set tasks Needs identification	NGOs, ARDC and Extension	Exchange visits Group meetings Facilitate Sensitization	After the workshop August 2002-07-26 farmers groups/parishes
Soil rehabilitation	Increased yields Conserve environment Good productivity	Terracing Practice organic farming Fallowing Water conservation Tree planting	Farmers ARDC NGOs Extension	Training farmers Soil sampling Provide inputs Farmers group	September-January 2003 After the workshop in our farms
Availability of breeds and crops for soil fertility	Increase production Increase income Restore soil fertility Ensure food security Nutrition	Provide improved breeds/crops Improved husbandry skills	Farmers ARDC NGOs Extension workers	Training Mobilising resources	September-January In the farmer groups
Market information systems	Create awareness Option for better markets Make farmer market oriented	Market research/survey Consultation NGOs, ARDC, farmers	NGOs Farmers ARDC	Partners meetings Market visits Improving quality News papers, radio and flyers Mass media	Continuously/November-January Within community Our farmers group
Linkages among NGOs, ARDC and CBO farmer groups	To harmonise partnership/influencing favourable policy Ensure proper information flow Working better	Regular meetings Proper communication channels	All partners	Participatory planning Monitoring and evaluation	Immediately In our farmers groups
Building on ITK	Sustainable, cheap and effective Improve our farming systems Readily available	Interactions Farmer based research	Farmer Extension workers ARDC, NGOs	Explore existing by documentation ITK trials and validation	Continuous On our farms

Farmer group gardens. Farmer research groups had activities that bound members together. In most cases group gardens were used as mother gardens from which individual members accessed planting materials, and a convenient time for them to work together. There was a mechanism for fair sharing of the multiplied materials. The excess was sold off to interested non-members and the proceeds used for other group activities.

Farmer innovations and contests. Contests were one identified as of the alternative technology transfer methodologies and were initiated as a mechanism to enhance farmer innovations and exchange of knowledge and information among farmers. A series of contests was organized in order to foster innovation among farmers. Stakeholders i.e. farmers, NGOs, opinion and political leaders, extension agents and researchers together developed contest themes, guidelines, criteria for judgment and prizes to be awarded. In the process of organizing contests participatory multi-stakeholder meetings were held. A total of 23 farmer research groups (FRGs) participated in three series of contests organized in 2002-3. The process of the contests involved planning, sensitization and judgment for selection of best performers. During While developing evaluation criteria the ranked

high. Initially each of the FRGs was requested to select the best three farmers, based on agreed evaluation criteria. In the second phase, Parish Evaluation Committees were elected and sensitized into developing criteria to screen out the best 10 performing farmers from each of the parishes. During the third phase the Project Contest Evaluation Committees composed of all stakeholder representatives were instituted to make final judgment at project level.

School agricultural contests. After the successful completion of contests among FRGs farmer research groups, The Centre decided to extend contests to other institutions in the project area i.e. primary and secondary schools with . The major objective of the activity was to interest the youth pupils and students in agricultural research and development. Other objectives were to assess students' knowledge of rural resources; create awareness and stimulate students' innovations and appreciation of the importance of natural resource management practices in farm productivity. A total of 15 schools were involved. A number of stakeholders that included The project Coordination Committee, ARDC staff, Science, Agriculture and Music teachers in schools of the target parishes participated in the contest process. met to

Table 2. Farmer research groups in Namaliri parish as of December 2003.

No.	Name of group	Members		Total
		Female	Male	
1	Akwata Empola Farmers' Group	6	5	11
2	Linda Kigweyo Group	12	5	17
3	Zibula atudde Farmers' Group	7	3	10
4	Kyosimba Onanya Farmers' Group	14	9	23
5	Biva muntuyo Farmers' Group	10	6	16
6	Naminya Youth Group	2	5	7
7	Balyejusa Bujjowali Association	7	9	16
8	Muyenga Farmers' Group	12	6	18
9	Ddembe Development Association	8	5	13
10	Tweyambe Farmers' Group	8	4	12
11	Agali awamu Farmers' Group	10	2	12
12	Okwegatta gemanyi Farmers' Group	8	5	13
13	Akwata empola Kira Youth Group	5	3	8
	Total	109	67	176

Table 3. Evolution of Integrated Management of Resources concept among ARDCs.

ARDC	Concept	
Mukono	Integrated Crop Management (ICM)	August 2001
Kachwekano	Revitalization of smallholder Agro-ecosystems	September 2001
Abi	Integrated Farm Management (IFM)	September 2002
Ngetta	Integrated Rural Resources Management (IRRM)	March 2003
Mbarara	Integrated Rural Resources Management	April 2003
DATICs	Integrated Rural Resources Management	May 2004

Challenges of the Integrated Rural Resources Management approach.

brainstorm and agree on the process of conducting the contests. The agreed theme for contests was Sustainable Rural Resources Utilization for Optimum Farm Productivity.

In the Primary school level, competition was based on *opera* related to the theme. All schools within the Project sub-county participated. The number of pupils in each school choir was a maximum of 20. All pupils in the choir were given tokens but the best three schools were awarded prizes. Competition at Secondary School level was based on essay writing. All the five secondary schools in the two sub-counties participated. The number of students was limited to five per school, making a total of 25. All participating students were given a token of appreciation, but the best three students were awarded prizes.

The occasions for the contests were festive days that were attended by most of the people in the villages, including political and opinion leaders. The interest aroused among the young generation on for the management of available resources for livelihood improvement would positively definitely impact on the youth's have a positive attitude towards agriculture.

Achievements of the approach. The Participatory Learning Approaches that have evolved are now being institutionalized in NARO. After conducting the first two workshops a publication as a guide on to conducting participatory planning processes was published (Fernandez and Lusembo, 2002). The publication got was widely spread acceptance in all NARO institutes and has served as a guide during a number of participatory planning workshops especially for operational ARDCs that to date planning workshops have been conducted in five ARDCs. The participatory nature of the approach saw the concept grow/evolve through various ARDCs. The concept that started as Integrated Crop Management (ICM) finally became Integrated Rural Resources Management (IRRM) as indicated in Table 3. appears to be the generally agreed concept among the ARDCs. The participatory planning approach was also now been adopted for District Agricultural Training and Information Centres (DATICs) that are supported by the Danish International Development Agency (Danida). These Centres are:

- Acceptance of the approach by researchers. It is a big challenge to convince the conventional researcher to appreciate the wealth of knowledge that smallholder farmers have about their circumstances. There is need to move from business as usual to innovational strategies.
- The essence of IRRM is to identify what research can contribute to the innovation process. Apparently clear identification of researchable issues, as perceived by farmers, is not easily articulated.
- Ensuring multifaceted research to validating farmers' practices. Smallholder farmers are interested in overall performance of their enterprises in terms of food security and income. They are least interested in the

minute details that individual researchers may busy themselves with.

- Sustaining the coordination committees to ensure multi-stakeholder implementation of agreed action plans.
- Development of an effective communication strategy to ensure feedback into the research system.

Conclusion

The National Agricultural Research Organisation System in Uganda is currently realigning itself towards development oriented agricultural research that focuses on client orientation, farmer demand and market opportunities undergoing a review process. This is intended to make research respond to the needs of the farmers and meet the demands of the markets. The emphasis is on multi-stakeholder involvement and innovation approaches to R&D. The IRRM approach has made a start in this direction and it is hoped that the approach will contribute significantly to the transformation process of bringing a change in the way of conducting agricultural research for improved livelihoods doing business in R&D.

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References

- Anon. 2003. National Agricultural Research Policy. Ministry of Agriculture, Animal Industry and Fisheries. Uganda. 42pp.
- Chambers, R., Pacey, A. & Thrupp, L.A. 1989. Farmers First. Farmer innovation and agricultural research. Intermediate Technology Publications. 219pp.
- Fernandez and Lusembo P. 2002. Farmers Leading Change; A Learning Approach to involving Smallholders in the Revitalization of their Production Systems. NARO Stakeholders. 49pp.
- Korten, D. 1980. Community organization and rural development: a learning process approach. Public Administration Review **40**, 480.
- Lightfoot, C., Dalsgaard, J. P., Bimbao, M. & Fermin, F. 1993. Farmer participatory procedures for managing and monitoring sustainable farming systems. Journal of the Asian Farming Systems Association **2** (2), 67.