

Agricultural Extension Through Participatory Approaches: Lessons from UMADEP, Morogoro, Tanzania

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ABSTRACT

The Uluguru Agricultural Development Project (UMADEP) uses a combination of Participatory Rural Appraisal (PRA), Participatory Technology Development (PTD), Farmer Groups and Farmer to Farmer extension approaches. Experience in the use of these approaches show that farmers in collaboration with extension workers have developed activities which address location specific problems, generated appropriate technological innovations that are sustainable and take into account the socio-cultural and economic milieu of the communities. In addition, this has led to the formation of farmers' groups which facilitate learning, decision-making, and adoption of agreed innovations. UMADEP's experience shows that use of participatory approaches can lead to making extension efforts more responsive to needs of farming communities, cost effective and sustainable.

Key words; Uluguru mountains, participatory technology development, farmer groups, innovation

Introduction

Extension practice in Tanzania, unlike in the west where it espouses an educational philosophy, is guided by a mixture of educational and non-educational orientations. These have had a bearing on the nature of extension approaches that have been tried since colonial times to – date (Table 1). Literature (Mathews and Qaraeen, 1998; Keregero, 1991) reveals that nearly all these approaches are characterized by being regulatory, supply driven, top-down and manipulative. Of late, even the T & V approach, which has been operating in Tanzania since 1989 to-date, has come under criticism for its emphasis on top-down extension management style. It has been described as having limited and stale information to deliver, top heavy management, hierarchical, a fragmented approach to farming, and emphasizing technologies by talking rather than doing. The village extension officers are trained to deliver technologies handed down to them and are not provided an opportunity for critical thinking. In essence, this supply driven system makes it difficult for farmers to truly participate in the process.

The adoption of non-participatory extension approaches has frequently stirred resistance particularly where unpopular regulations and decisions have been imposed. This has also caused growing suspicion among extension beneficiaries (mainly the smallholder farmers) towards the government, its agents and policies thus affecting the performance of the public extension service.

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The current interest in participatory approaches to agricultural development is a reaction to the standard model of extension, which is based on the “transfer of technology” model. The model operates on the principle that outside experts know of new techniques, new processes and the new knowledge and will inform farmers about these. This model is, however, increasingly felt to be inappropriate for many reasons. Some of the reasons are ideological, relating to cultural hegemony, while others are more practical, relating to motivating farmers to learn and to change. Still others have to do with the view to provide farmers with appropriate and/or user friendly advice. Participatory approaches, which involve farmers in their own development and use their indigenous knowledge, have been proposed as an alternative (Rogers, 1996; Rutatora & Rutachokozibwa, 1995; Lassalle and Mattee, 1995).

Table 1: Some Extension Approaches Used in Tanzania over Time

Extension Approach	Focus	Extension Methods	General Outcomes	Period
Focal point	High potential areas in the northern and western parts of the country	Use of force rather than persuasion	Negative reaction on the part of farmers	Colonial (1940s – 1960s)
Progressive	Extension resources focused on early adopters, usually the richer, more educated who had larger than average farms	Individual and group	Good responses from few farmers	Immediate post-independence (Mid- 1960s to late 1960s)
Transformation	Establishment of a series of capital and management intensive village settlement schemes	Regimentation Administrative	Creation of a class of favoured farmers. General resentment by those left out	Post independence (Mid 1960s to late 1960s)
Improvement	Gradual upgrading of existing rural small holdings through extension and credit programmes, improvement of marketing all aimed mainly at progressive farmers	Individual Group Mass	Increased rural class differentiation which was contrary to country's ideology Not successful in low and medium potential areas of the country. Too slow to suit the aspirations of the country's leaders	Post independence (Mid-1960s to late 1960s)
Frontal	A reconsidered approach that came with the Arusha Declaration Extension agents were instructed to use the “group approach” rather than working with individual farmers	Group methods	Signs of increasing over adoption of innovations such as tractor ploughing, fertilizer application or using feed concentrates that may not pay under the prevailing cost price conditions	Post Arusha Declaration (1967 – 1980s)
Training and Visit (T&V)	Transfer of technology through unified extension system. Regular contact between farmers and	Individual (contact Farmer Approach) Adoption plots	Farmers awareness of specific technical messages Less emphasis has	Mid 1980s – 2002

Extension Approach	Focus	Extension Methods	General Outcomes	Period
	extension staff. Continuous training of staff, strengthen research extension – farmer linkages and regular supervision of staff etc.	Group	been placed on capacity building of farmers Single line of command Professionalism	
Participatory Approaches	<ul style="list-style-type: none"> •Promote farmer problem solving abilities while aiming at their empowerment •Place emphasis on greater interaction and group learning through participatory dialogue •Acknowledges farmers' expertise in identifying problems and selecting options for improvement 	<ul style="list-style-type: none"> •Mostly group based and interactive, using techniques such as focus group discussion, brainstorming, work sharing, participatory mapping and modeling •Other innovative ways such as integrating extension with other services such as credit, inputs and market linkages •Links researchers, extension staff and farmers through participatory technology development (PTD) •Involves cost sharing in some cases 	<ul style="list-style-type: none"> •Increased farmers' decision making capacity and stimulate local innovation and more effective resource utilization •Enhanced ownership and full control of activities by farmers •Generation and dissemination of agricultural innovations that are farmer-demand-led •Overall empowerment of farmers and their families •Ability of farmers to express their demand of services is enhanced •Strengthened grassroots farmers organizations and institutions 	Mid-1990 to the present

Source: constructed from various sources

Cognizant of the above, the uluguru Mountains Agricultural Development Project (UMADEP) of the Department of Agricultural Education and Extension at Sokoine University of Agriculture (SUA), Morogoro, was initiated in 1993 using participatory extension/research approaches. The involvement of SUA and in particular the Department of Agricultural Education and Extension is very much in line with the Act No. 6 of 1984 establishing SUA. The Act designated the department as having responsibility for teaching, research and extension in the fields of agriculture, fisheries, forestry, veterinary and allied or complementary sciences. Furthermore, the former Chancellor of the University, the late Mwalimu Julius K. Nyerere (1984), said “SUA. must be answering the needs, and solving the problems of the Tanzanian agriculture and rural life. Its aim must be ... to contribute towards

improved standards of living for the people who work and live on the land, or in connection with the land". With reference to extension, one of the objectives of the University is "to develop, promote and undertake the provision of adult and continuing education alongside the teaching of regularly enrolled students designed to secure the development and dissemination of various applied sciences and technologies required for the enhancement of the rural economy and efficacious solutions of the economic and social problems of rural areas of the United Republic (SUA Prospectus, 2000/2001).

In the following sections a brief introduction to the project is given and the approaches used by the programme are also described. Lessons based on the use of participatory extension/research approaches are outlined and conclusions are drawn on the basis of the experience gained.

UMADEP

As earlier mentioned, UMADEP was initiated in 1993 in order to address major problems (agricultural and developmental problems) facing farmers in the Uluguru Mountains. The project initially started in Mgeta and Mkuyuni Divisions on the slope of Uluguru Mountains and later expanded to cover Mvomero Divisions in the lowlands of Morogoro Rural District. The first two Divisions namely Mgeta and Mkuyuni specialize in horticultural production particularly temperate and tropical fruits and vegetables for commercial purposes. These include cabbage, cauliflower, peas, beans, peaches, pears, mangoes, citrus, bananas and pineapples. The majority of the farmers in these areas are engaged in horticultural production for commercial purposes. Some of the constraints facing these farmers such as: (a) High population density, (b) scarcity of land for expansion of agricultural activities, (c) continued cropping of cultivated areas without fallow and (d) poor road infrastructure and dominance of highly organized middlemen plus others.

The Approaches Used by UMADEP

The project operates using a combination of Participatory Rural Appraisal (PRA), Participatory Technology Development (PTD), farmer groups and farmer to farmer extension approaches. These are described below as follows:

i) Participatory Rural Appraisal (PRA)

Unlike the public extension service which espouses a one way transfer of technology, UMADEP approaches rural development interventions from a different perspective. UMADEP interventions in extension/research are designed based on the PRA which is conducted in various villages in the project area, for the following purposes:

- Introducing project facilitators to the communities
- Establishing rapport with the community

- Attain Mutual learning about the situation in the villages, in terms of problems, potentials, or opportunities, resources, needs and interest of the farmers
- Establishing a framework or plan for development actions
- Seeking commitment from the communities, and
- Identifying starter activities and who might participate in such activities (Mattee, 1998).

As a result of PRA various activities have been identified in the project area, for implementation by different groups of farmers, in collaboration with UMADEP and government extension staff. These include savings and credit, input distribution, dairy goats, production of fruit tree seedlings, furrow irrigation, fish farming, organic farming, potatoes production and road maintenance fruit processing, tree planting, bee keeping etc. By June 2004, there were more than 85 farmer groups altogether involved in various activities in Mlali, Mgeta, Matombo, Mkuyuni and Mvomero divisions.

ii) Participatory Technology Development

To involve farmers in the development of appropriate solutions to their problems, it was deemed necessary to establish a trial demonstration plot in each of the Divisions. The plot reflects farmers' fields and is used as a forum where farmers and professionals meet and discuss technical changes. Several innovations for the production of tomatoes, local varieties of vegetables, new and exotic varieties of fruits and vegetables are tried on these plots.

The major purpose of these plots is to learn about new possibilities and to assess their appropriateness for the area. This learning involves all parties concerned including professionals (researchers from SUA), the field extension staff and the farmers. Thus the demonstration plot is used as a classroom where farmers can learn new ideas and practices. They can also observe the results and discuss the merits and demerits of any new idea or practice. The plot also acts to focus community attention on the fact that the local farming system can be and should be improved.

As a result of farmer involvement in PTD, farmers have adopted various technical innovations in the project area, by learning from what was introduced on the demonstration plot. Such innovations include: tomato production, fruit tree nursery management techniques, growing carnation flowers, planting pineapples in rows, pruning fruit trees, biological control of pests, new fruit and vegetable varieties and many others.

The basic processes which farmers go through during participatory technology development are meant for empowering farmers. Having been empowered, farmers feel free to engage themselves in various project activities and are capable of solving their problems. Empowerment helps farmers to develop a sense of autonomy,

ownership and independence and are able to view the success or failure of a given project activity as their responsibility rather than the responsibility of experts or outsiders.

iii) Working with Farmers' Groups

Generally, it is now recognized that farmer groups can be instrumental actors in most rural development ventures. Through groups, it is believed that farmers can be able to increase their political and economic power to influence policy decisions (especially at their local levels) and to propose plausible solutions to their problems. In addition, farmers' groups are seen as multipliers of innovations as they facilitate the diffusion process and allow more farmers to be reached.

In agricultural extension, farmers' groups are being increasingly recognized as potential intermediaries between extension agencies, and the rest of farmers. For example the National Agricultural Extension project (NAEP II) having realized the weaknesses of the contact farmer approach has opted for contact farmers' group approach.

UMADEP thus encourages the formation of groups, whereby for each group, members can pursue their own interests, there can be group learning, decision – making and action and mutual encouragement in adopting various innovations. As mentioned earlier, the project is currently working with 85 farmers' groups. Experience in working with these groups in the project area, shows that, in order for such groups to be instrumental in the technology generation and dissemination process, three basic factors must be recognized:

- Diversity of farmers groups – to take into account the diversity of interest in the rural community,
- Linkages between different farmers groups – to take into account the global interests in the rural areas.
- Recognition of the independence of each group in running and managing its affairs without uncalled for interference.

iv) Farmer to Farmer Extension

The function of UMADEP in rural areas is not so much to transfer knowledge, technology, practices or information (as espoused by past and existing public extension approaches), but rather to facilitate the identification, retrieval and integration of various elements of problem solving so that new, locally embedded and sustainable practices may emerge. This implies mobilizing a variety of social actors as sources of relevant knowledge, experiences and information, and helping them focus upon specific problems in particular situations.

One of the major sources of relevant knowledge, experiences and information are the farmers themselves. Thus an important part of UMADEP strategy is to facilitate the sharing and exchanging of such knowledge, experiences and information, in various ways such as:

a) Farmers' Exchange Visits

Farmers' exchange is one of the fora whereby a group of farmers from one location visits a group of farmers in another location, after which the host group also pays a return visit to the guest group. The major difference between farmers' exchange visits and study tours is that during such visits, the farmers being visited act as hosts, by inviting to their homes the guests, with each family hosting a guest farmer for the duration of the visit. This allows an in-depth exchange of experiences, a critical examination of the situation found in the host community and building up of strong bonds of friendship and solidarity.

In addition to staying in other farmers' houses, joint farm visits, general meetings, social events and individual discussions on the theme of the visit are conducted in order to share with the visitors the experiences of the local people. After the visit the groups report back to the village mates, on what they have observed, and together decide on what could be tried.

Such exchanges have been made between farmers from the Uluguru Mountains and farmers in other Regions i.e. (Iringa, Tanga, Arusha, Kilimanjaro and Mara), and outside the Country like Rwanda and Uganda but also between various groups in Mkuyuni and Mgeta. Usually such visits have been organized by farmers themselves depending on the interest of the group which is undertaking the visit. Such exchanges have been made with respect to dairy goat keeping, soil conservation, fruit processing, savings and credit, as well as fruit tree nurseries. In each case farmers were able to see for themselves what other farmers were doing and to examine the context to which this was happening and to see similarities and differences between them.

The major role of the extension staff in such an exchange is to facilitate, to make logistic arrangements and to coordinate the programme. The actual exchanges between the groups are left to the visitors and their hosts. This is what makes it a farmer-to-farmer extension experience.

b). Local and National Networks

Both local and national networks have been formed. Detailed description of these networks can be found in the project documents and existing literature (Mattee, 1998). In each case issues of access, independence, sustainability, participation and effectiveness were given due consideration. Of course, these were taken care of by the project design.

Lessons in Using Participatory Extension Approaches

Some of the lessons in using participatory approaches described above include Using a system-orientation or approach to farmers' circumstances. UMADEP's approach is essentially holistic and requires professionals to understand the totality of the farmers' conditions, not only the technological base of production, but also the socio-economic conditions as well as the institutional and policy environment in which farmers operate. In essence, it is mandatory that both the professionals and farmers have a common understanding of these circumstances, including the opportunities and constraints. Innovations based on this common understanding of the REALITY stand a better chance of being adopted by farmers.

Recognition of the contribution of farmers in the technology development process is another derived lesson. Many professionals (Richards, 1985; Chambers, 1983; Rutatora and Wambura, 2000) recognize the technological expertise and the general knowledge of the local environment of farmers, which in many cases is superior (for the local environment) to that of experts. UMADEP sees to it that farmers' indigenous knowledge is fully utilized. In view of this, farmers are constantly engaged in the process of applying, reworking and updating their knowledge in light of new challenges and encounters with new forms of knowledge. Successes that have been registered with UMADEP have hinged upon the successful marriage of new and external knowledge with the farmers' indigenous knowledge. It has been realized that farmers can be very active partners in extension and can set an agenda and direct a process in which government agencies and NGOs can participate to meet the needs of the farmers and their communities.

A third aspect is enabling farmers to shoulder responsibilities for their development. Experience with UMADEP reveals that the sustainability of the results of any development efforts depends on the farmers having a stake in the outcome of the development efforts and on paying attention to the autonomy and independence of the farmers. That is, farmers must view the success or failure of a given activity as theirs rather than the responsibility of experts.

This also relates to the issue of sustainability. A move toward orienting extension services to commercial and cost recovery activity, while at the same time enabling it to become more responsive and accountable to clients aims at finding strategies for sustaining extension efforts. In essence UMADEP focuses on empowerment of farmers or farmer groups, promotes farmer extensionists or motivators and underscores the importance of cost-sharing. Introduction of partial cost recovery from clients is seen as an important part of the mechanism by which extension becomes more farmer-led or centred. If farmers are paying directly for the extension service they receive they have a measure of control over those providing it.

Conclusion

Experience from UMADEP shows that farmer to farmer extension activities can be very effective not only in stimulating farmers and their farm families to adopt innovations, but also more importantly in creating dynamism among farmers to try new ideas, new practices and new approaches. Through PRA, PTD, farmer exchange programme and other community based participatory activities. Farmers assume a lot of responsibility in seeking information and solutions to their problems. In addition, they become responsible for success and failure and are continuously motivated to look out for new opportunities, which they can try in their own situations. With participatory approaches, the role of extension workers is limited to facilitation. In short, it can be argued that extension staff and outsiders can only assist, but farmers themselves need to shoulder their own development but poised to use strategically and effectively any resources, including extension services that are within their disposal.

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