

Building Linkages for Livelihood Security in Chivi, Zimbabwe

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Introduction

By the early 1990s more and more people were recognising the failure of agricultural research and development to meet the needs of resource-poor farmers in the South. For many, the problem was not the shortcomings of specific tools, equipment or techniques, but rather the approach to technology research and extension itself. Alternative, more participative approaches were being adopted and advocated (see for example Chambers et al, 1989). The potential of local knowledge and skills to improve production was also being recognised (for example, Bhalla, 1989). The Intermediate Technology Development Group (ITDG)¹, an NGO focusing on technology development for small-scale producers, was at the heart of this debate. ITDG was witnessing at first hand the 'successes' emerging from participative approaches to technology development in its own field projects, and those of others (ITDG, 1993; Appleton, 1994; van der Blik and van Veldhuizen, 1993).

New challenges were also emerging. PRA techniques were becoming a common tool for rural development professionals, but how could the participative process be best supported by external agents such as NGOs and government service providers? How could it be maintained beyond the appraisal stage through technology development and dissemination (Croxton and Appleton, 1994)? What form of participation would be possible if approaches working at a localised level, with intensive external inputs (usually from an NGO project) are replaced by programmes with broader geographical and social constituencies (Oakley, 1994)?²

A major issue that any NGO has to face as it attempts to answer these questions is its own ephemeral nature. NGOs typically work through timebound projects with a limited geographical focus. This raises the question of how local people's own capacity and capability to manage technical change without external support can be enhanced (Croxton and Appleton, 1994.). What role is there for the 'project' to act as a 'facilitator' of the technology development process?

Closely related to this question is the issue of 'scaling-up'. How can methods that suit an NGO with short-term intensive involvement with a community, be used by service providers with potential for more permanent involvement, and who have a wider geographical mandate, such as government research and extension agencies? The work described here is one attempt to answer these questions.

ITDG has been working in Chivi District, Zimbabwe, since 1991. ITDG is now withdrawing from direct involvement with the local population, leaving behind a more confident farming community and the beginnings of a sustainable process. This paper describes the process which ITDG's Chivi Food Security Project followed and which contributed to this situation. Central to this was the growing recognition of technology development and use as a social process, and the importance of working directly with local institutions, rather than through an intermediary organisation. The many lessons and issues arising from this approach provide pointers to other development projects and initiatives on how to set in motion a process which, right from the start, is aiming towards fostering permanent linkages between farming communities and their servicing organisations, and which can function without the stimulus of external groups.

The Setting

Chivi District is in Masvingo Province, southern Zimbabwe. It is inhabited by the Karanga people, a subgroup of the Shona Tribe. It has a population of 170,000 (1990). A population density of up to 100 per square kilometre, growing at around 3% per year, puts enormous pressure on land. Holdings average 1.2 ha per farmer and sizes are declining. Average annual rainfall is 530 mm. Drought years, defined as years with less than 450 mm rainfall, or crops failing, occur in three years out of five. Subsistence agriculture is the basis of the rural economy.

Objectives, Process and First Steps

While the focus of the project was on food security, the agenda remained fairly open. This was because it was recognised that strategies to improve rural food security also need to develop and support other linkages which permit increased food production to foster growth in a wider rural economy. The technical focus was decided in discussions with local people.

A major thrust of the project's philosophy was exploring and reinforcing local sources of information and expertise. From the outset it was decided that ITDG would not implement an operational project in the conventional sense, nor adopt the role of sole (or main) provider of technical information to farmers. Instead, the project sought to link farmers in Chivi with sources of information which, after ITDG's involvement finished, they could continue to tap themselves. These included government research stations, other NGOs and training institutions, and farmers in other districts.

In general terms the focus has been on low-external input, low investment activities compatible with farmers' resources. This contrasts with the standard recommendations of the government extension service (Agritex) which frequently require a high investment in terms of time, money and risk.

In this paper we discuss how this process has led to improvements in relationships between farmers and external service organisations, in particular the relationships needed for improved research and extension.³

Box 1. Working with Groups

There are many advantages to working with groups rather than with individuals. These include: sharing of knowledge and skills; mutual assistance, eg. exchanging labour on a rotational system, and the sharing of assets (eg. ploughs); rapid generation of ideas to solve common problems; and bulk discounts for purchases, transport and marketing.

One of the key issues for the project team to address was the groups' capacities to manage themselves and to attract members. Leadership training, through Training for Transformation courses (Box 2), was extremely important, and has paid

dividends. The project's cyclical approach to planning and evaluation has also helped to strengthen the groups' capacity to plan, act and review independently of ITDG. Joint planning and shared decision-making improves management skills and increases the democratisation of groups, providing a major foundation for a process that can be sustained without continuous external support.

Membership has changed and increased as a result. Previously the gardening groups had little influence beyond the garden fence, and the farmers' clubs lacked legitimacy because of exclusive membership. The groups are now more representative, are more effective in providing benefits to members and are more powerful in representing members' interests. For example, in Ward 21 the number of clubs has increased from nine to 33 (mid-1996), and their average membership risen from 16 to 30. Total club membership has increased from 161 to 865. At the same time the dominance of affluent farmers has decreased, and membership and leadership is more representative of middle and lower income households.

One of the first steps, after selecting two Wards⁴ in which to work (Wards 21 and 4), was to identify suitable institutions within these Wards, through which the process would operate (Box 1). Two were selected - the Farmers' Clubs and the Garden Groups - as they had the potential to represent a large cross-section of the community. The Farmers' Clubs focused on food production, and the Garden Groups had a high proportion of women in both membership and leadership. Gardening is a significant activity for food production and security, yet generally undervalued by the government extension department.

Linkages to Improve Research and Technology Adaptation

In Zimbabwe, Agritex staff draw their extension messages from research carried out by the Department of Research and Specialist Services (DRSS). After Independence, the government instructed the DRSS to focus more on the communal areas⁵, which, prior to that time, had been neglected. There were problems with implementing this policy, including:

- ?? the negative attitude of researchers towards poor farmers in communal areas;
- ?? resentment by communal farmers, and resistance to researchers' recommendations, which were often inappropriate for their specific conditions;
- ?? declining financial resources, which prevented researchers from undertaking on-farm trials with communal farmers;
- ?? poor involvement of farmers in agricultural research.

A major thrust of the ITDG project was therefore to forge closer links between farmers and researchers. A first step in this process was to build local capacity in technology development, and to explore how to draw government researchers into the process.

Building Local Capacity in Technology Development

During participatory appraisals in Chivi, farmers had highlighted soil and water conservation and pest control as their major problems. The next stage was to undertake studies of traditional and current practices in soil and water conservation and pest control. This process was accompanied by a series of feedback meetings to discuss the strengths and weaknesses of different practices. For many farmers who attended these meetings, this was the first time that any outsiders had sought their opinion on such issues.

The next step was to explore and experiment with technology options. Effectively two parallel types of technology experimentation had been happening in Chivi. On the one hand research station staff were conducting their own trials in farmers' fields (the more conventional model of farmer participation in on-farm research). Researchers were very rigid in trial design, and did not allow any inputs from farmers. At the same time, farmers were themselves testing and adapting new approaches and technologies in an informal way. This experimentation resulted in an interesting development, as non-trial plots consistently outperformed trial plots. For example, in one season Mrs Margaret Kusure hosted a maize trial and she also planted another maize crop of the same variety next to the trial plot. The non-trial plot out-performed the trial plot by nearly 50%. This was mainly because although researchers had total control over their trial plots, being based nearly 200km away they were not able to monitor the crop effectively as it grew. Also, left to their own devices, farmers adapted ideas to suit the particular micro-environment of an individual field (or part of a field). The researchers, by contrast, followed a blueprint design and prescribed rigid management practices.

Box 2. Training for Transformation

Training for Transformation (Hope and Timmel, 1996) has been an important method of supporting and facilitating greater participation, and greater levels of community management and control. This leadership training is based on the concepts of 'consciencization' originally developed by Paulo Freire in Brazil, adapted for a Zimbabwean context. It is a set of awareness-raising techniques that assist groups to analyse their formation and management, their roles, opportunities and constraints, and to plan courses of action together. The training was provided by another Harare-based NGO specialising in this type of training.

Key elements included defining development; examining approaches to community development; group dynamics; planning skills and methods; facilitation skills; social analysis and justice issues; decision-making processes; leadership and communication skills; stress management; gender and development; team management; and self-reliance.

The training starts by focusing on those who are least empowered. This has stimulated demand from below in the social hierarchy, and has sometimes caused some anxiety among those used to being in control. Within groups it has led to greater democratisation of leadership and more transparent decision-making. This in turn has increased effectiveness, so attracting new members and thus increasing representativeness. The emphasis on facilitation, and gender and development have led to women being able to facilitate their own project reviews. Within Agritex there have been changes too, as farmers demand changes in the approach and attitudes of

extension workers. This in turn has resulted in Agritex workers demanding training and these effects have rippled upwards through the organisation.

During the first year of the project, researchers conducted the on-farm trials in the manner described above. Before moving into the second year of trials, a review was carried out to assess performance of the first year's trials. This allowed farmers to bring up their concerns about the way research had conventionally proceeded:

- ?? The area of research being emphasised was not always a priority problem of theirs.
- ?? The resources being used by the researchers were not appropriate, because most farmers could not obtain them - for example expensive chemical inputs or crop varieties.
- ?? The trial design was too complex and the host farmer could not remember the treatments on each plot and share that with other farmers.
- ?? Farmers were not allowed to carry out certain activities without first consulting the researchers. Farmers felt that they had no control over what was happening. With their enhanced self-confidence, built through the Training for Transformation process (Box 2), farmers persuaded researchers to let them carry out trials in a way that used their own knowledge of crop and water management. Two farmers were chosen by each village to form pilot groups to conduct the trials. Further workshops for farmers and researchers were organised at the end of the season to review and evaluate both the management of the trials as well as the results. This new form of collaboration produced more successful results (Box 3).

There was not always agreement between farmers and researchers on the best ways of designing experiments. The project would always make sure that concerns from both sides were brought up in a forum and debated as openly as possible. The second set of trials have been initiated by farmers themselves. For example, millet varieties obtained (through the project) from farmers in another part of the country were tried by a number of farmers.

Box 3. Joint Technology Refinements by Farmers and Researchers

The high wing ridger is a type of plough with two mould boards - one on each side to enable the tool to build ridges by throwing soil either side as it opens a furrow. Farmers tried making ridges with this. They found that although they liked the ridges, the tool was too heavy for their weaker oxen. It was also expensive compared with the single mouldboard plough owned by the majority of farmers. Farmers decided to modify this single mouldboard plough to make it more multi-purpose. By removing the mouldboard and replacing it with two shares, the plough was now able to plough, ridge and weed, and the local animals were able to pull it easily.

Infiltration pits were introduced by innovative farmers to minimise water loss from run-off from the channels of contour ridges originally sited with the help of researchers. Farmers realised that these structures were causing a lot of erosion at the discharge end and they decided to either deepen the channels right through or

dig pits. As these modified structures are now able to hold more water, farmers now use them for growing rice.

New technologies are also evaluated and modified by farmers in each others' fields. Competitions, organised by the farmer and garden groups, have been another important way of adapting recommended practices into methods that suit Chivi farmers. Individual farmers compete for prizes for 'best idea', while neighbouring communities challenge each other to have the most farmers and gardeners participating in trials, and experimenting with new ideas. There was some concern that rewarding individuals sometimes leads to jealousies which actually result in innovators being victimised. Combining individual competitions with community competition makes individual innovator's contributions become important for each community. Innovators then become appreciated and respected, even when failures occur.

The overall effect of these in-field evaluations and competitions was to allow a number of technology options to be refined to suit local social and environmental conditions. The success of this process, particularly the pilot groups' growing self-confidence in managing and controlling it, was again reinforced by the Training for Transformation.

Linkages to Improve Extension

Agritex, the government extension service, has been regarded by the project as a key partner. Traditionally, Agritex's extension messages were based on results from research station trials. They focused on cash crops and high-yielding varieties that require expensive inputs of fertiliser and pesticides. There was little attempt to adapt the message to different physical and social environments. There was no encouragement to experiment with, or adapt techniques. Women's vegetable gardens were usually completely ignored by the extension service, which failed to recognise the valuable contribution that vegetable production makes to household food security. In addition, extensionists focus on 'Master Farmers', often drawn from the more affluent households at the expense of other community members. Like many government bureaucracies, Agritex is extremely hierarchical. There is a rigid chain of command, and extension messages move downward through this. This means that the extensionist in the field (let alone the farmer) is far removed from the researcher who is conducting trials. It is hardly surprising that many farmers find the extension messages irrelevant. Even where relevant messages exist, by the time they reach the farmers information is often out of date. In some instances relevant information never reaches farmers.

These shortcomings, or at least their end result (that farmers don't adopt recommended practices), had been recognised by many for some time. One of the project's objectives has been to explore an alternative approach to extension. This approach would explicitly try to respond to the needs and priorities of marginal farmers. It would try to incorporate and foster a more equal relationship between farmers and extensionists and researchers. It would respect farmers' own knowledge. Most importantly, it would seek to involve government structures (particularly Agritex) to promote sustainable changes in extension practices. Agritex was receptive to such external stimulus. Key staff acknowledged the failure

of their conventional extension approaches, a variant on the Training and Visit approach, to bring about widespread adoption of new technologies. This was combined with declining government funding, necessitating a review of cost-effectiveness. In addition, senior Agritex officers in Masvingo Province were able to see tangible results and learn from experiences on participation from projects active in the Province.⁶

The project sought to engage with Agritex at field, district and provincial levels:

- ?? At field level the project worked closely with the extension workers working in Ward 21. They were included in community meetings and planning workshops. They attended Training for Transformation courses and participated in training and feedback workshops. The objectives here were both to share the approach, as it developed, with the extension workers and also to demonstrate to more senior Agritex officials that field extension staff could adopt such an approach.
- ?? At district level, Agritex officers were informed of the aims and progress of the project. This was done through regular reporting to the District Development Committee, circulating reports and encouraging them to visit the project.
- ?? In a similar way, senior Agritex officials in the provincial office in Masvingo were kept informed through reports, and were encouraged to visit the project. Provincial Agritex officers kept national level Agritex officials informed of the project.

The response to this was an increasing level of interest in the project's approach. Training for Transformation produced tangible benefits in providing skills that allowed the Extension Workers to work more effectively with farmers, and to demand of their supervisors more and different training, so that they could do their job more effectively. These demands percolated upwards through the Agritex hierarchy. This process has been described as a 'discomfort model' of institutional influence (Hakutangwi and Scoones, 1996).

Farmer Participation in Technology Dissemination

Whilst improving linkages between farmers and the government extension service is clearly important, it is the view of farmers and gardeners that 'farmer-to-farmer' dissemination is the most effective way of spreading new ideas. Practice seems to bear this out. The project has strengthened local farmer-to-farmer dissemination capacity by building self-confidence and by building links with other institutions that can supply information and expertise that can be further disseminated by farmer-to-farmer contact.

Box 4. Seed Fairs for Diversity

Seed fairs are an effective way of disseminating ideas about varieties and maintaining and encouraging genetic diversity. Whilst a large number of varieties of sorghum, millet, maize and various beans and legumes were grown locally, individual farmers tended to know of and use only a fraction of these. The totality of local

knowledge was huge, but individual farmers knew only a little of this totality because of insufficient channels for exchanging information between them. These fairs have allowed farmers to see, compare and discuss the different merits of differing varieties. At a seed fair held in May 1997, the best farmer had a total of 105 varieties of crops - a huge improvement on the 1992/93 seed fair when the best farmer had only 23 varieties. Farmer organised seed fairs are now planned regularly.

The technology and information sharing events, such as farm visits and seed fairs, were one important part of the dissemination process (Box 4). Farmers and gardeners were able to see various technologies in their neighbours' plots. They were able to see for themselves the effects and discuss these with their neighbours. They could also see for themselves why some adaptations of a particular technology worked better than others.

Impacts

Project impact monitoring has been weak. While there has been a lot of anecdotal information collected, more rigorous collection of both qualitative and quantitative data has been patchy. One reason for this is that conventional monitoring systems work from predetermined indicators. This approach does not sit comfortably in a project environment which is constantly evolving. During the last 18 months a lot of effort has gone into developing more innovative monitoring methods that are participatory and take account of the process and nature of activities (Box 5). To date, the following impacts have been recorded.

Box 5. The Evolution of Participatory Monitoring

Initially, project monitoring was managed by ITDG staff, who kept records of the project and collected most of the information. However, in 1995 local farmers and gardeners started to take a more active role - they recognised the need to be able to monitor the impacts of their efforts more effectively and wished to ensure that information collected was relevant to them. In a series of community meetings, representatives from farmers' clubs and garden groups developed a number of indicators for increased household food security. These included reduced food handouts, construction of grain storage facilities, a good mulch of crop residues immediately after harvest, number of meals eaten per day to increase to about three, and number of early school leavers reduced.

However, it soon became apparent that it was a time-consuming process for the people recording the changes to submit their records every month - a further difficulty was that many of the recorders were only semi-literate. The whole process was reviewed by ITDG and the monitoring representatives, and it was decided that the large number of indicators should be abandoned. Instead, monitors would seek to identify, with other group members, those few really significant changes having an impact on their livelihoods. This system has now been in place for a year, and both ITDG staff and the community have found it highly informative. It also allows the community to constantly assess and reassess their situation and explore

alternatives, and they, rather than ITDG, are firmly in control of the process.
Source: Croxton and Murwira, cited in Abbot and Guijt, forthcoming

On Technologies

The process taken has exposed farmers to multiple sources of information on technologies, and helped build their self-confidence to seek this proactively. Table 1 illustrates the effects of these multiple linkages on technology choice and use in relation to soil and water conservation technologies.

Table 1. Technology adoption rates and sources

Technology	Source	Uptake (households) 1996 N= approx 1200
Water Conservation for Field Crops		
Tied ridges	Chiredzi & Makaholi Research Stations Institute of Agricultural Engineering, Mutoko	>450
Infiltration Pits	Farmer innovation (from another district)	>850
Rock Catchment	Zvishavane Water Project (an NGO)	14
Modified contour ridges	Farmer designed	>40
Mulching and Ripping	Makaholi research station	>50
Fanya Juu Terraces	Cortill project (Masvingo)	>4
Winter ploughing	Revived traditional practice	>800
Intercropping	Traditional practice	>450
Using Termitaria soil	Traditional knowledge(both to raise fertility and conserve moisture)	>800
Water Conservation for Vegetable Gardens		
Clay pipes for sub-surface irrigation	Chiredzi Research station	>450 (now not increasing as gardener evaluation establishes true costs and benefits)
Mulching	Fambidzani Organic Training Centre (an NGO)	>800
Plastic sheets buried in beds	Fambidzani Organic Training Centre (FTC)	>250
Inverted bottles	FTC	>300
Gully Reclamation	Dept. of Natural Resources	2 gardens & 4 Villages

After C. Watson (forthcoming)

There are also numerous examples of farmers from outside the project area hearing of the activities in Ward 21. Many have visited to see and learn and have returned to their own villages with new techniques to try.

The lesson that emerges from these experiences is that for new practices to spread informally, a facilitatory environment needs to exist. Farmers need encouragement and their confidence built up, so they can confidently share their knowledge. Sometimes it is difficult for them to do so if their environment only allows

information to come from one source, and only allows 'proven' technology to spread. (One of the concerns of the research stations was that 'unproven' technologies might be disseminated). Such an environment arrests the potential for innovation.

On Food Security

Farmers in this drought-prone area report that their yields have more than doubled since the project was initiated in 1991. *"Food security is no longer a problem"* according to community members. Their focus is now shifting to the need for other factors, such as cash, sanitation, housing etc., indicating that people feel more secure about their food production. Another indicator is the lessened dependence of people on food aid. There is emerging evidence that fewer people in the project area needed drought relief support through the 'Grain Loan Scheme' during the drought of 1995 compared with those outside the project area. Sale of surplus vegetables from the gardens have provided huge financial independence for women. A more diversified local economy is in the making, with a greater focus on off-farm enterprises using local resources.

On the Research Process

An important outcome of this process is farmers' growing confidence to relate to research institute and Agritex staff as clients or customers, with specific demands and problems which they want to address. They are no longer prepared to be passive recipients of information. The leadership training has been very important in developing this self-confidence, but is not the sole reason for this change in attitude. Farmers' self-confidence was also built by a project approach that explicitly valued their own skills and knowledge, encouraging experimentation, and constantly seeking to strengthen their capacity to control and manage a technology development process. This in turn has resulted in a remarkable uptake of certain techniques developed on research stations, but which were not adopted to the same degree in the past.

These emerging relationships allow researchers to gain a better understanding of gardeners' and farmers' needs and perceptions, and have the potential to continue long after the 'project' has finished. These are vital ingredients for successful research, but ones that conventional approaches to research and extension frequently ignore. This may be a reason why the technologies developed by these research and extension institutions have largely not been adopted by resource poor producers in marginal communal areas such as Chivi.

Researchers from Chiredzi Research Station, Makaholi, Farming Systems Research Unit who have been working with farmers in Chivi now recognise:

- ?? Farmers are also researchers in their own right;
- ?? Participation of farmers means more than the mere provision of labour and land in trials.
- ?? Researchers can learn a lot from farmers. It is important for both researchers and farmers to share their knowledge and ensure that any future research builds on the experiences of the farmers;

?? Developing any research agenda should be done with the participation of farmers.

The Ward 21 community recently sought funding from a Northern donor (Hivos) for a small grant to fund discrete activities that they feel will assist them continuing to innovate in their food production practices. They have recently used this to facilitate stronger linkages with the Farming Systems Research Unit of the DRSS.

On the Extension Service

Agritex is now developing a strategy to test and adopt a more participatory extension approach in Masvingo Province, using the experiences of ITDG in Chivi District, the Contill Project in Gutu, Zaka and Chivi Districts and IRDEP in Gutu and Zaka.⁷ Extension workers and their supervisors will be trained in implementing a participatory approach to extension. Regular feedback workshops with farmers will support the extension worker and help plan extension work. ITDG and the Chivi project will support this process, providing training and distilling lessons learned in a way that brings out the implications for Agritex staff roles.

A great strength of this plan is that it has been developed by Agritex and has not been devised or imposed by ITDG. This implies a considerable feeling of ownership of the process, and also ensures that the strategy for change is appropriate to the needs and resources of Agritex.

There is also increasing evidence of interest from Agritex at national level. Masvingo Provincial officers have used their experience and knowledge of Chivi to lead a national debate on participative approaches at national level.

On Relationships with Commercial and Public Sector Organisations

In the past, the Grain Marketing Board (GMB) and the Cotton Marketing Board (CMB) were the sole purchasers of grain and cotton in the District. However, following deregulation of the grain marketing sector, new buyers of grain and other commodities are beginning to emerge, although farmers have sometimes found them very unreliable. Farmers in the project area, with increased self-confidence, have now started to lobby the the Zimbabwe Farmers Union (ZFU) to assist them in negotiating directly with these buyers.

A number of multinational seed companies (eg. Cargill; Pannar; Pioneer) supply a variety of hybrid seed to farmers in Chivi District. These include seeds for grain, oil and legumes. Each of these companies has sales representatives active in the District, and they sometimes travel in the company of extension staff to help persuade farmers buy their seeds. Farmers are increasingly confident in dealing with these representatives, asking questions and demanding relevant information, before deciding whether or not to purchase seeds.

Lessons and Unresolved Issues

There are many lessons arising from this process which could guide the way support is given by external NGOs and service providers. First we discuss these, and then we go on to highlight some of the issues which emerged and which have yet to be resolved.

A major contribution of the project has not been technology hardware, but rather the focus on providing options to choose from and nurturing an environment that allows farmers and gardeners to discover, discuss, test and evaluate these choices. The community has been able to analyse their own experiences and, by sharing these inform other stakeholders of their needs, priorities and potential. Through providing workshops, visits and training, the project has created the space for this to happen. The project has had some success in providing solutions to the differing problems of men and women, and other groups. For example, the technology options developed for men and women differed because of their specific needs. The participative approaches have been helpful in identifying these varying needs.

Paying attention to and supporting group activities has been another important process. The democratisation of decision-making within groups was greatly increased through Training for Transformation, resulting in growing feelings of community ownership and control, and a growing self-confidence to manage these. However, it is important to recognise that merely forming groups will not necessarily promote technology development and dissemination. During the 1980s there had been a heavy-handed attempt by Agritex to impose a system of 'co-operative' gardening groups and to prevent individuals gardening. This was not a success and caused a lot of resentment. While most group members prefer gardening in groups, some people would still prefer to garden on their own. In addition, groups can impose their own constraints, particularly when they are very hierarchical and structured, like the Master Farmer groups. In such a rigid environment it is unlikely that more innovative farmers will experiment.

The implications for external support agencies of the process described here depends on the nature of these agencies, which tend to fall into two categories:

- ?? NGOs, who can be flexible in approach and can focus on a relatively small geographical area or social group(s), but who generally have a limited time horizon. The experience recounted here suggests that NGOs should consider reviewing their role and ways of working so that they become facilitators of a process of technical change, rather than merely providing specific services and technical inputs.
- ?? Government agencies, such as agricultural research and extension, and other large-scale implementing agencies, who are typically relatively rigid bureaucratic structures, promoting blueprint solutions to predefined problems across large geographical areas. The implication from this work is that they will be more effective if they can alter their working practices to ensure that the services they offer reflect local needs and aspirations.

Some Unresolved Issues

There are several unresolved issues that are probably not specific to the Chivi case.

- ?? Reaching the poorest. The project is still not reaching the poorest 10 per cent of the community - typically the old, infirm, or single parent households. This has constantly been a cause for concern amongst project staff and has never been resolved. Technical innovation requires a certain minimum level of resources which the poorest often lack. The project has managed to encouraged wider community debate about the situation of the most marginalised households, but has not succeeded in providing direct benefits.

- There are still serious, unanswered questions of equity and whether the process itself has created barriers to entry for some of the poorer households. These are important long-term issues for any project that seeks to have broad, poverty focused impacts.
- ?? Channels for farmers' demands. How can farmers' demands be channelled to ensure that research, extension and provision of other agricultural services are responsive at a national level? The ZFU has the potential to do this, by representing a wide cross-section of farmers. However, it is still a very weak organisation, despite its country-wide infrastructure and contacts.
 - ?? Costs to farmers. The project has been successful in increasing farmers' interactions with other institutions. However, this is not without cost. Information needs to be sought out; social relationships built up and maintained; local political ramifications dealt with and conflicts managed. It is only worth investing in these while tangible benefits are perceived to outweigh the costs. The benefits appear to outweigh costs, but for how long? In Chivi tangible benefits have come primarily from the adoption of new technologies. To a degree the project has managed to capitalise on a number of 'off-the-shelf' technologies. Are there enough of these still waiting to be tried and tested to sustain the benefit stream? If not, what are the implications?
 - ?? Challenging power structures. The long term impacts on local power structures and social relationships is unclear. Certainly the status and power of some individuals have been challenged. Will this result in social conflicts at a later stage, or will the community be able to absorb and adjust to such upheavals? Project rhetoric still refers to 'the community', although all concerned recognise that the community is not homogeneous. There may be a contradiction between the approaches adopted by the project. On the one hand, the participative approaches are based on a perception that there are close linkages between poverty and exclusion, particularly exclusion from decision-making processes. There is an assumption that by promoting methods that facilitate increased inclusion by marginalised groups and individuals, not only will the technology development process be more effective, but also more equitable social structures will emerge. On the other hand, Training for Transformation, which has proved to be an extremely powerful tool to mobilise the technology development process, has its roots in a different set of assumptions. These understand poverty as part and parcel of capitalist society. It recognises that 'ideology' is often presented as 'knowledge' and raises questions on the values that emerge even from local knowledge. Do these two approaches sit comfortably together? How useful is it for outsiders (ie. development agencies) to continue to hold unquestioningly to the concept of the 'community', and is it really possible for outsiders to adopt a role as neutral facilitators of technical change?

Venn diagrams drawn by Ward members illustrating institutional linkages, show that the community has been feeling increasingly distant from government structures in the last five years. However, it is more difficult to determine whether this disaffection itself, or merely the ability to articulate it to outsiders, is part of, or a result of, the project's participative process. Almost certainly, increased self-confidence, a wider world view and the specific skills and attitudes gained through Training for Transformation have had an influence. Just as this has resulted in greater democracy and more efficient and effective management of farmer and gardener groups, so it has provided the basis for expecting and demanding similar democratisation and accountability from local government structures.

Although such disaffection may appear to be just the sort of thing that might worry government administrators, this is not always the case. To a degree the desire to improve and increase the accountability of local government structures has been seen as a positive turn of events. For example, the District Administrator (the District's senior government bureaucrat) has spoken positively of people's growing awareness that officials can be changed through democratic processes, and that these same avenues have the potential to allow a distant government to target their policies and programmes more effectively. However, this example needs to be understood in the context of a policy environment that most farmers still feel lies far beyond their influence.

Acknowledgements

This is an edited version of a longer paper presented at the African Forum on Participatory Technology Development, Nyeri, Kenya in April 1997. The paper draws on many sources, not all of which can be recognised in the references below - many have never been written and insights developed following comments from many individuals. The authors are indebted to many colleagues and others who have provided so much food for thought over the years. In particular, Adrienne Martin of NRI provided useful and helpful comments during its preparation. The (as yet) incomplete and unpublished book by Cathy Watson, describing the Chivi process in great detail, was also a major source.

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