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CLIENT-DRIVEN CHANGE AND INSTITUTIONAL REFORM IN AGRICULTURAL EXTENSION: AN ACTION LEARNING EXPERIENCE FROM ZIMBABWE

Jürgen Hagmann, Edward Chuma, Mike Connolly and Kudakwashe Murwira

Abstract

This paper describes the development and the institutionalisation of a participatory approach to innovation development and extension which took place through an action learning process in Zimbabwe. In order to scale up this approach through institutionalisation within the agricultural extension department it was necessary to adopt a complex and multi-faceted strategy. The development of 'learning cases', the exposure of extension officers to these cases, as well as deliberate trespassing and provoking action were means used to raise awareness and commitment for change. An informal network of projects which were all pursuing participatory development acted as a lobby group to strengthen the influence of the approach and bring it into mainstream thinking.

Once commitment for change had developed in the extension department, operationalisation of participatory extension approaches became a major challenge. This reform required substantial changes in the organisational culture, roles, relationships and attitudes of individuals and groups. Changes of that nature are presently being addressed in an organisational development programme within the extension department, which includes a learning process to facilitate behavioural and attitudinal changes.

The paper concludes that the institutionalisation and operationalisation of participatory approaches takes far more than simply the training of staff in participatory methods. These are complex interventions which require considerable commitment from all actors, sound strategies, flexible methodologies, a conducive atmosphere for learning and a focus on human relationships rather than technical and formal issues.

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Acronyms

AEW	agricultural extension worker
AGRITEX	Department of Agricultural Technical and Extension Services (Zimbabwe)
AKIS	agricultural knowledge and information system
CARD	Coordinated Agricultural and Rural Development programme (Zimbabwe)
ConTill	Conservation Tillage project
DR&SS	Department of Research and Specialist Services (Zimbabwe)
GTZ	Deutsche Gesellschaft fiir Technishe Zusammenarbeit (German Agency for Technical Cooperation)
LAE	Institute of Agricultural Engineering (Zimbabwe)
IRDEP	Integrated Rural Development Programme (Zimbabwe)
ITDG	Intermediate Technology Development Group (Zimbabwe)
NGO	non-governmental organisation
OD	organisational development
PEA	participatory extension approaches
UZ/IES	Institute of Environmental Studies, University of Zimbabwe

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1 INTRODUCTION

The Conservation Tillage project (ConTill), a joint venture of the Zimbabwean Department of Agricultural, Technical and Extension Services (AGRITEX) and GTZ, was initiated in 1988. Its aim was to develop new technologies and extension messages in order to reduce soil erosion in smallholder farming. This was to be achieved through scientific research in two different agro-ecological sites, one in the subhumid area close to Harare, the other in the semi-arid area near Masvingo in southern Zimbabwe.

ConTill started work on research stations but later shifted its focus towards working with farmers in their fields when it was found that conventional concepts of mandated research and extension proved to be incompatible with farmers' reality. In the Masvingo branch of the project acknowledgement of this reality as the determining factor for land management through a learning process caused a drastic re-direction of the project focus towards farmer-led research and extension. Out of the need for new directions a different concept of participatory research, innovation and extension was developed. This, in turn, clashed with the old institutional set-up and culture within AGRITEX and necessitated active efforts to institutionalise the participatory approach within the organisation.

At this point, allies with similar interests were found. The Food Security Project of the Intermediate Technology Development Group (ITDG), a UK NGO, had also been successfully practising a similar approach but it too faced problems of institutional scaling up. The GTZ-supported CARD (Coordinated Agricultural and Rural Development) Programme, later renamed the Integrated Rural Development Programme (IRDEP), became another ally. CARD had begun pilot activities on community-level planning and development and faced conceptual and institutional challenges relating to the multi-faceted foci of community projects. The common interest shared by all three projects was to shift the perspective of rural extension towards farmer participation and to scale up activities through government service institutions such as extension, research, health, veterinary services, water development etc.

The objective of this paper is to analyse the experiences in Masvingo in terms of key factors and strategic elements in the institutionalisation of participatory approaches within a government bureaucracy such as AGRITEX. First, the learning path of the ConTill project is described. Then the experiences of the three 'allied' projects in institutionalising participatory approaches are described and analysed.

2 FROM RESEARCH TO ACTION LEARNING FOR APPROACH DEVELOPMENT: CONSERVATION TILLAGE IN MASVINGO

This section describes the evolution of the ConTill project in Masvingo. The learning process took place in phases with several cycles of action and reflection. These revealed technical and institutional considerations which stimulated continual re-adjustment and re-orientation of the project focus. The learning cycles were as follows:

Phase 1 (1988-90): on-station research

At *field level* the project started work on soil erosion and conservation issues at two research stations. The need to involve farmers in the development of conservation tillage techniques was soon recognised. However, it was only after a long process of negotiation that project staff were able to convince the Zimbabwean partners to embark on adaptive on-farm trials.

At *institutional level* the project was based at the Institute of Agricultural Engineering (IAE), a branch of AGRITEX which was mandated to carry out tillage research. All other agricultural research was mandated to a different organisation, the Department of Research and Specialist Services (DR&SS). It was soon evident that this would make it almost impossible to carry out non-linear research in a systems perspective without trespassing on the terrain of DR&SS.

There were two other notable problems during this phase of the project: (i) high staff turnover in IAE meant that the project did not have a Zimbabwean manager; and (ii) in Masvingo Province the project's relationship with AGRITEX was weak as research projects were perceived to have little direct relevance to the extension service.

Phase 2 (late 1990-92): adaptive on-farm trials

During this phase adaptive on-farm trials were implemented at both project sites to complement the on-station research component. Intensive interaction between project staff and smallholder farmers provided an insight into the livelihood strategies of communal farmers with all their problems and constraints. It showed that because of the multitude and the complexity of

farmers' problems, conservation tillage as a single technique had very limited potential to assist them. It also revealed that the type of farmer participation which was desired would develop only very slowly. Despite continuous encouragement, farmers were hesitant to make their own decisions on the trials and tended to wait for the researchers to tell them what to do. This was the 'culture' farmers were used to from previous experience with research and extension. We concluded that other means were required to achieve active farmer participation in the experimentation and adaptation process and that it would be necessary to move beyond the concept of adaptive trials.

At an institutional level the project was shifted to the soil and water conservation branch within AGRITEX and the Chief of this branch became the Zimbabwean project head. In Masvingo, a new German advisor tried to improve relationships with AGRITEX at the provincial level through exchanging field experiences with the provincial officers.

Phase 3 (1992-94): farmer participatory research

At field level the focus was redirected towards catalysing active farmer participation. This phase commenced with workshops which brought together farmers, extension workers and researchers. Elements of Paolo Freire's 'Pedagogy of liberation' (1973) in the form of 'Training for Transformation' (Hope & Timmel, 1984) were utilised to raise farmers' awareness of the importance of and scope for self-reliant development. An assessment of farmers' visions for the future and their problems was taken as the basis for further activities. Workshops were also used to motivate farmers to experiment to find their own solutions to problems (the methodology is described in Hagmann, 1993). After the workshops a promising dynamic was established, including active participation and decision-making by the farmers. Farmers became increasingly involved in dialogue, experimentation and mutual sharing of knowledge. However, collaboration with the extension services became more and more difficult as field extension workers felt threatened by the new confidence which farmers displayed and the roles that they claimed.

Nevertheless, the intensive interaction with farmers in ConTill Masvingo allowed us to gain a deep insight into the need for a new extension approach (see Box 1). We increasingly questioned the underlying assumption of the project, namely that development of an extension message would result in impact at the farmers' level. Instead, we began to focus more and more on the development goal of the project and we were able to adapt our approach iteratively, despite the limitations of our mandate (Hagmann et al, 1997). This process of adaptation was not conflict-free, but the rationale underlying the changes came from fact and experience which put us in a strong position in negotiations.

At an *institutional level* our observations on and analysis of the interface between farmers and extension workers was regularly shared with provincial extension officers. This, coupled with these people's own exposure to their clients, became an important tool for raising awareness of the need for change. Increasingly confident farmers openly spoke for themselves and confronted the extension staff with their shortcomings.

Towards the end of 1993 it became apparent that, despite this progress, as one single project our influence on the extension department would be insufficient to generate change at an institutional level. We therefore searched for 'allies' and began networking with other players in the area. Two projects with similar interests were identified and together we tried to create awareness of the need for change through personal discussions and workshops with extension personnel to share experiences.

Box 1. A need to change the extension approach

Analysis of this phase of the project revealed the need to move activities from the individual to the community level. Individual innovators were often victimised rather than standing as examples for other farmers. This limited any diffusion effect. In addition to new technologies a need was identified for social innovations which would encourage the effective spreading of knowledge. This insight, as well as the behaviour of the field extension workers, increasingly forced us to question the conventional approach to agricultural extension as followed by AGRITEX. The outreach of extension was largely limited to approximately 10% of the farming community, the so-called 'master farmers'. Even for this elite group adoption rates were generally low (Madondo, 1995).

Agronomic results nourished these doubts as the performance of standardised techniques (recommended by AGRITEX) was highly dependent upon the site-, soil- and situation-specific conditions of each farmer, even each field. A certain technique proved to be successful with one farmer, but failed with another farmer; blanket recommendations were of only limited value. Instead, if available resources were to be used to their best effect, it was necessary to provide farmers with a basket of options and learning choices about technologies. Farmers needed to learn how to choose the most suitable option, combine it with their knowledge and adapt it to their own conditions and circumstances. Therefore raising farmers' capacity through learning and understanding and through sharing of knowledge and experience among themselves, rather than the adoption of specified techniques, became the anticipated goal of the process.

Phase 4 (1994-95): testing of a new concept for extension

At field level the insights of the previous phases were utilised to build a new concept for community-based, participatory innovation development. This concept was tested in seven intervention areas (Hagmann et al, 1996b). Testing the operationalisation of a new extension approach became the main research focus in ConTill Masvingo. Results of the process are shown in Box 2.

At an *institutional level,* exposure to the facts in the field increasingly convinced senior management of AGRITEX Masvingo of the need for change. They organised an all-staff workshop (more than 300 staff) at which participatory approaches to extension were discussed as a means to improve the department's performance in the field. This commitment of senior management was an important pre-condition for the

Box 2. Achievements from 1991 to 1995 at farmers' level

By 1995 the participatory approach to innovation development and extension had yielded more than 20 innovations in the field of land husbandry. The spread of innovations at community level in the seven intervention areas was very encouraging. In the ITDC project, in which a similar approach was practised (with the main focus being on extension) up to 80% of the households in one ward (approximately 1,000 households) were involved in soil and water conservation activities. Both male- and female-headed households were assessed to be equally active. These achievements were closely monitored and evaluated during the action learning process which took place between 1991 and 1995. Impacts related to human development were more difficult to measure. For example, during a project evaluation in April 1995 one evaluator remarked that the confidence and pride of farmers who presented their innovations and achievements was the key to the success of the participatory approach. It should be noted, however, that this applies to implementation within a well-resourced project; the output when operated through the more poorly resourced extension department has yet to be assessed.

organisational development programme which the provincial head of AGRITEX Masvingo had initiated and launched at about the same time. In parallel with these activities, ConTill Masvingo together with the ITDG project and CARD/IRDEP initiated a programme of training for extension workers in participatory approaches and methods.

Technical research on conservation tillage had begun in 1991 and was carried through until 1995. By the end, however, it accounted for only one quarter of project activities in Masvingo. This was because other activities deemed necessary to make an impact at the level of the development goal were added without revising the logframe and the project memorandum. Had it been necessary to revise the project memorandum, changes would have had been required almost every year as the project developed. It was possible to manage the additional work because the financial resources involved were relatively small and the increased motivation of the project staff compensated for the higher workload.

Towards the end of 1995 ConTill field activities were scaled down and the outcome of the project in terms of approach and technologies was integrated into the broader organisational development (OD) programme within AGRITEX which was supported by IRDEP. The former GTZ-advisor to ConTill has continued supporting the OD process through short-term process consultancies for IRDEP.

3 TERMINOLOGY

It is important at this point to clarify the terminology used in this paper. Indeed, the terms *institutionalisation* and *scaling upneeded* considerable clarification during the process described in this paper.

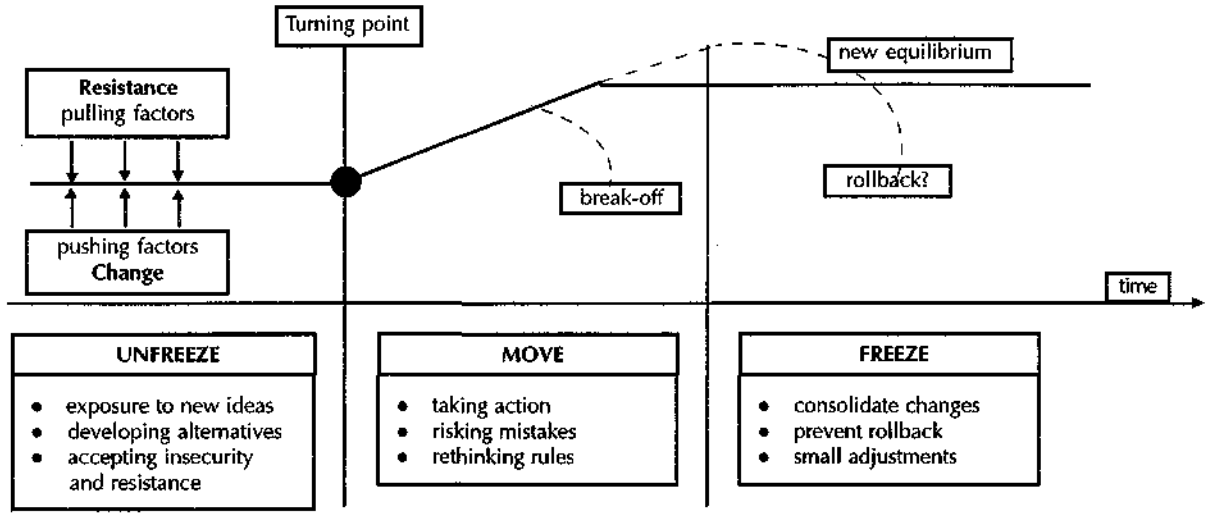
Scaling up here refers to the process through which successful pilot activities in the field are expanded. It is equivalent to replication, and in this context implies that similar processes to that pioneered by ConTill, ITDG and IRDEP should be initiated in most communities throughout Masvingo Province. Replication or scaling up requires facilitators with appropriate knowledge, attitude, skills and motivation. In this case of scaling up participatory approaches, this meant that the organisation for which the facilitators were working must already have internalised (or institutionalised) participatory processes; hierarchical organisations structured in a top-down manner are not able to motivate their staff to work in a bottom-up or participatory manner as this challenges their organisational culture.

Here, then, *institutionalisation* refers to the intemalisation of participatory processes and working styles in an organisation or institution, whether a local community or the government extension service. However, for sustainability, participatory development must be institutionalised within local/community institutions and organisations. A strong emphasis on leadership and strengthening of local institutions is thus a priority. This requires an intermediary who must act as a change agent. In our case the most appropriate change agents in the field were the AGRITEX extension workers. However, a precondition for them to become change agents was the related institutionalisation of participatory approaches within AGRITEX itself.

Institutionalisation can, however, be interpreted in different ways. In 1994, when the directorate of AGRITEX expressed the need to adopt participatory approaches in its new mission statement, many extension specialists and higher-level officers perceived participatory approaches already to have been institutionalised. The problem was, though, that the mere issuing of this policy statement did not imply that any changes would take place in day-to-day operations. The head of AGRITEX Masvingo therefore insisted that the actual implementation of participatory extension approaches, and the changes within the organisation which this would entail, should be called *operationalisation.* This distinction is important. It means that organisational change starts with institutionalisation and later enters an operationalisation phase. Institutionalisation is the output of an 'unfreeze phase' during which awareness is raised and commitment to change and the re-orientation of staff are the main focus. Operationalisation is equivalent to the 'move phase' during which the actual changes take place (Figure 1, overleaf). In the case of AGRITEX Masvingo, the framework for operationalisation is the organisational development (ODI) programme which is described below.

Participation, as understood by the three projects, goes beyond the merely functional participation of farmers in which participatory methods are used to improve externally driven programmes. Our understanding emphasises *interactive participation* which entails people participating in joint analysis, developing action plans leading to learning processes, and eventually taking control over local decisions (Pretty, 1995). The ultimate goal of participation is the strong articulation of rural people, the creation of a demand structure and good representation leading to the independent mobilisation of local people. In innovation

Figure 1. The three phases of changes in socio-technical systems



(adapted from Sülzer & Zimmermann, 1996)

development and extension, interactive participation forms the foundation of the desired social learning process.

4 THE SETTING AT THE START OF THE PROCESS OF CHANGE WITHIN AGRITEX

Status quo in AGRITEX: dominance of structure rather than process-orientation

AGRITEX Masvingo employs about 400 staff. At provincial level the extension officers and specialists are well qualified and have formal degrees in their specific disciplines. At district level (there are seven districts in Masvingo) formal qualifications of extension officers are lower but staff are still well qualified. Staff turnover is high at the management and officer level (i.e. those who are supporting the field workers), but low among the approximately 300 field staff (the 'Agricultural Extension Workers', AEW). Salaries are sufficient to allow extension staff to concentrate on their jobs and most AEW have access to motorbikes for mobility.

The organisational structure of AGRITEX and the formal background of staff provide a poor basis for adopting systems-oriented extension approaches. As in most government bureaucracies structures are rigid and linear. Process-oriented approaches do not readily fit into rigid structures and scepticism towards them is widespread. This contrasts with the viewpoints of the clients, the farmers, who operate within complex socio-technical systems which are under severe pressure from socio-cultural change, population expansion and dwindling resources. Such a situation requires process-oriented support and development of a type quite unlike that offered by AGRITEX. However, client-orientation within AGRITEX was largely prevented by the hierarchical, one-way communication flows within the organisation and extension agents' low regard for their clients, peasant farmers.

Client and demand orientation as a starting point for change

The three allied projects (ConTill, ITDG and IRDEP) put the needs and demands of farmers at their centre. Detailed knowledge of these needs was gained through intensive interaction with farmers. This knowledge, coupled with an understanding of the shortcomings of AGRITEX, represented a powerful means for creating awareness for change. Arguments for change were always linked to the performance of AGRITEX as an organisation. Through case study fieldwork it was demonstrated that farmers' needs and expectations differed significantly from those on which AGRITEX was basing its service. Thus, to improve the organisation's performance so that it could fulfil its mission and justify its existence, new approaches were required. AGRITEX was already aware of the pressures created by its poor performance. As a senior official observed in 1992 "if we do not change now, the department might no longer exist in ten years time". This, then, provided a starting point for change.

Initiation of change: from the top or the bottom?

Where to start the process of change was a fundamental issue. Should the top management of AGRITEX be convinced first so that it would then give the go-ahead to implement change? Or would it be better to start small and rather conventionally at field level, to develop an alternative approach through an iterative process and use this focus on clients' needs to justify change? In Masvingo, the second option was chosen. It proved much easier to convince senior-level staff through continuing action and concrete demonstrations at field level rather than through intellectual discussions about what was 'wrong'.

5 INSTITUTIONALISATION OF PARTICIPATORY EXTENSION

The strategic framework for the institutionalisation of participatory extension approaches was developed iteratively during the implementation of the ConTill, IRDEP and the ITDG projects. It consists of three main steps which were supported by the three projects in chronological sequence (although they sometimes overlapped and ran together).

(i) Development and implementation of case studies (pilot activities) in communities to demonstrate the value of participatory approaches (1991 onwards)

The 'learning cases' were largely externally-driven interventions which lay outside normal departmental extension procedures. They provided the opportunity to undertake a detailed situation and actor analysis and to put in place an iterative learning process in order to develop alternative approaches. Because of the substantially new approach that was adopted within these pilot activities there was a good deal of friction between field-level staff from AGRITEX and the facilitators of the three projects. This was, though, to be anticipated; it was obvious that such interventions would make the system react by defending conventional practice. However, this friction itself provided us with insights about the problems of the extension system.

The case studies were crucial elements in the process of institutionalisation of ideas and approaches. First, they stood as concrete examples of improved output and, second, they provided firm evidence of 'how' to implement. The positive results of the first three years of the learning cases were used to justify demands for institutional and organisational change. Our knowledge of the extension output at field level gave us the credibility to demand client-orientation. Once commitment for such change had developed at higher levels the case studies could also serve as showcases for learning and training of staff.

In sum, only the experience and the analysis gained through working at field-level for several years enabled the three projects to understand extension and to develop alternatives to the conventional 'transfer of technology' paradigm. Without such fieldwork this analysis and approach could not have been as 'grounded' and convincing as it turned out to be.

(ii) Raising awareness for change and familiarising AGRITEX staff with alternatives through exposure to the case studies

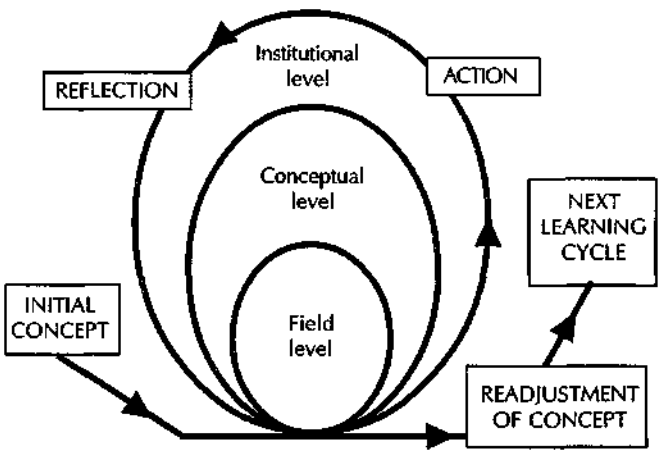
This was done through field visits and presentations, networking and initial training activities between 1993 and 1995. It was realised quite early on that information flow in AGRITEX was mainly one way: downwards through the six hierarchical levels from top to bottom. It was therefore difficult for top management to obtain information about substantive problems at field level. This is where the case studies proved to be so useful. Once AGRITEX management showed interest, familiarisation of all levels of extension staff with the case study work became a priority and a key mechanism for stimulating discussion. Besides provision of literature and reports, a series of workshops organised and/or supported by the three co-operating projects was held between 1993 and 1995. Participatory approaches were presented, experiences discussed and field visits to the case study areas made. Exposure to farmers who could analyse the difference between conventional and participatory approaches proved to be particularly convincing. This, in turn, enabled higher level staff to become involved in the process and to adopt new ideas without losing face. In addition to these formal activities, informal discussions and field visits were an important part of the familiarisation process.

(iii) Initiating institutional learning about implementation of participatory extension (the shift in attitudes, concepts and skills) (1994 onwards)

This step entailed the efforts to train field and higher-level staff to practise participatory extension. It was not just a question of providing training in participatory methods but also of developing an iterative learning process through trying out an operational framework in practice. Through this process the practical capacity to implement participatory extension was built up within a small pilot group (over a period of one and a half years).

These steps have involved action learning at different levels (Figure 2). The outputs of village level activities have been analysed and this analysis has been incorporated into concept development. The analysis of outputs at both field and conceptual level has formed the basis for the process of institutional change. Each phase therefore has three simultaneous learning and action loops.

Figure 2. Action learning at three different levels ('triple loop learning')



This overall strategy was complemented with other strategic and methodological elements to enhance committment for change and the institutionalisation of participatory approaches. These elements were as follows:

(i) Searching for allies within the organisation to facilitate change from inside

In order to familiarise a large number of staff with the new approaches we adopted a strategy which we called 'searching for allies'. In informal discussions, managers, officers and field extension workers who were receptive to the new ideas were identified. These 'allies' or 'benign viruses' were provided with support in order that they could bring about change from inside the system and convince other staff. The support was provided through intensive personal communication, a strong informal involvement in the learning process of the case studies, the provision of background material and through the writing of joint papers and reports.

(ii) **Technical** competence and **socio-cultural empathy** to convince technical staff

Technocrats can best be convinced if addressed at a technical level; their respect is obtained through technical competence. Our strategy was therefore to argue with technical facts. This was possible due to sound knowledge of the field situation. We played the role of a lawyer acting on behalf of farmer clients and explaining their rationale. Once we had gained respect at a technical level, it was easier to be taken seriously in discussions about sociological, socio-cultural and even philosophical issues. Practical examples from the fieldwork and concrete suggestions about the nature and mode of the new approach contributed greatly to acceptance of the new ideas. Good personal relationships with key individuals within the organisation also played an important part in creating a conducive atmosphere for the adoption of new ideas.

(iii) 'Mainstreaming' of participatory approaches through networking

The close co-operation of ConTill, ITDG and IRDEP in an informal 'lobby group' enabled us to coordinate our efforts to institutionalise participatory approaches within AGRITEX. It also facilitated mutual learning from each others' experiences, joint papers and workshops. The insights of the projects, which all came to similar conclusions through different interventions in different areas, was convincing to the technocrats. It provided the 'critical mass' necessary to draw attention to participatory approaches and bring them into mainstream thinking.

Towards the end of the institutionalisation phase (in 1995), a commitment to participatory extension approaches by the AGRITEX management in Masvingo Province had developed. This commitment was demonstrated through the convening of an all-staff workshop. An awareness that a move towards participatory extension required fundamental changes within the organisation had also developed. This was indicated by the launching of the organisational development (OD) programme. The main issue that remained was the actual operationalisation of participatory extension by AGRITEX itself, taking into account the organisation's resource constraints, staff capacity and bureaucratic administration.

6 OPERATIONALISATION OF PARTICIPATORY EXTENSION

Achieving changes in attitude and behaviour of AGRITEX staff towards their clients emerged as a major challenge. It was unlikely that participatory approaches could work while staff remained dominant and superior and maintained the perception that farmers were empty vessels to be filled with knowledge and that they needed to be told 'what to do'. Such attitudes and a mediocre motivation were deeply entrenched in field staff. Their origins lay partly in the colonial heritage of AGRITEX's predecessor organisation, a very powerful agency which exerted strong control over farmers.

Participatory approaches challenged AGRITEX's organisational culture with its rigid and hierarchical communication structures designed to promote blueprint solutions rather than learning about technologies. Other characteristics of AGRITEX which were not conducive to the adoption of participatory approaches were unclear roles and responsibilities within the organisation, control-oriented rather than performance-oriented management and supply-driven staff training. AGRITEX was also constrained by limited resources. To address these many challenges the head of AGRITEX Masvingo initiated the OD programme which became the framework for institutional reform and the vehicle for operationalisation of participatory extension approaches.

The framework of organisational development

A planning workshop held in May 1994 formed the basis for the OD programme which was launched in 1995. In this workshop activities carried out by AGRITEX Masvingo were reviewed and analysed. The review demonstrated the need to find ways of improving both the performance of individual staff and the aggregate output of all staff. In the workshop three different systems within the department were analysed: extension management, extension support and extension delivery. The objective oriented project planning method (ZOPP) was applied for problem analysis and to plan activities to be undertaken in the different systems.

The goal of the OD programme reflects the mission of AGRITEX. It is that: 'farmers in Masvingo Province optimally use their production resources in a sustainable way'. The programme purpose is therefore to improve the output of the department in order to achieve this goal. It was formulated as: 'relevant aggregate output at all levels of AGRITEX staff in Masvingo Province

improved' (AGRITEX, 1995). Besides improvements in managerial skills and capacities of staff, one of the major tools for securing improvement - the 'software' of the OD - was to be the use of participatory approaches.

Main components of the OD process

As an institutional learning process, the outline of the OD programme is not static. At present, about a year and a half after its official launch, stakeholders perceive the OD process to be based on the following components (see Figure 3).

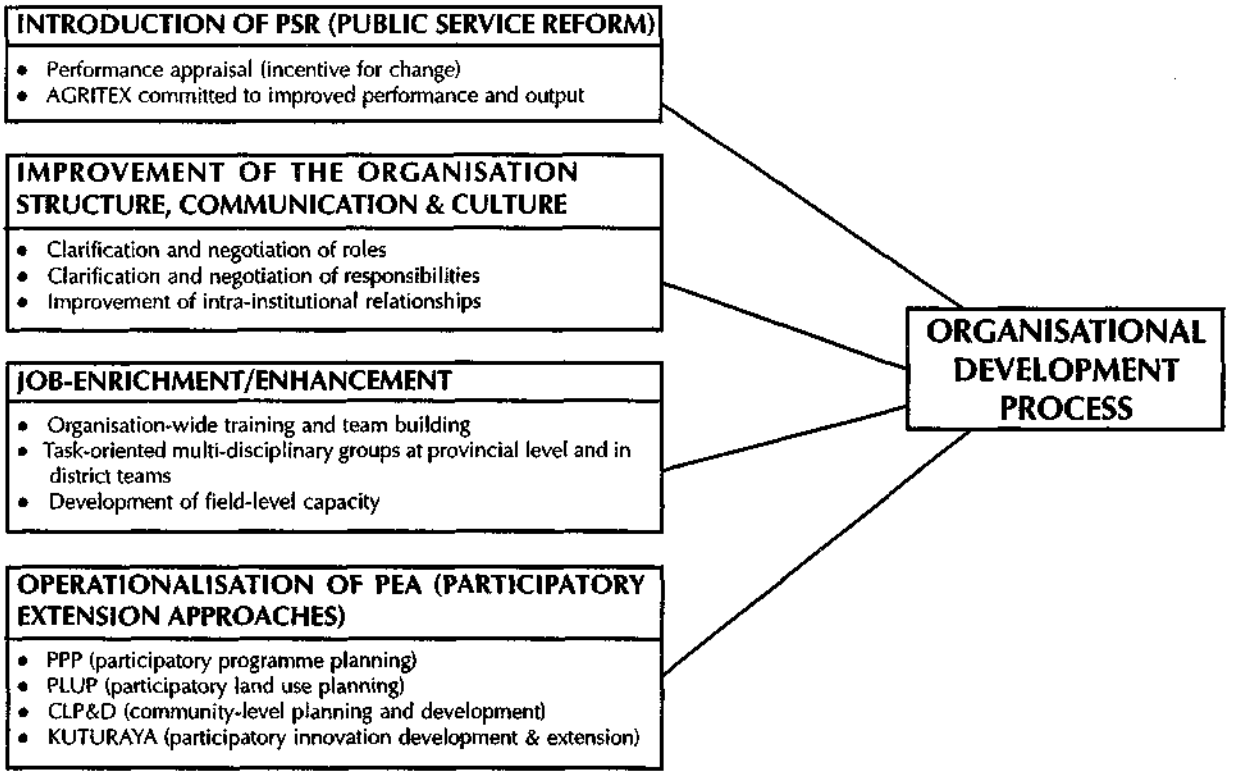
(i) Public service reform: Reform of the public service in Zimbabwe was recently introduced at national level. It should lead to increased levels of performance through staff appraisal and the introduction of performance-based remuneration and other incentives for high achievers. This provides a favourable framework for the OD programme in Masvingo. It also provides the AGRITEX Masvingo management with more freedom to offer incentives to staff who improve their performance. However, performance appraisals can only be as good as the job descriptions and the performance criteria which are in place. Therefore, to get the most out of public service reform, improvements in the organisational structure of AGRITEX are also necessary.

(ii) Improvement of organisational structure and communication: This relates mainly to the three 'Rs', that is the roles, the responsibilities and the relationships among people in an organisation. The roles and the responsibilities can be addressed through re-negotiation of job descriptions. At present, all job descriptions of all levels of staff in AGRITEX Masvingo are being revised by management in consultation with postholders. The revised job descriptions reflect the new thrust of AGRITEX programme activities and the associated tasks and responsibilities of staff.

Also importantare the communication structures within the organisation. At the management level team-building and management supervision workshops are used as a tool to improve relationships and thereby improve communication between managers. One objective is to encourage a management style and an institutional culture which are more performance-based and less reliant on the narrow control of individuals or groups. Rather, the focus should be on individuals' productivity and job satisfaction in a more open and healthy organisational environment. In performance-oriented organisational cultures achievements and productivity become the prime motivators at group and individual level. Leadership and management take on a proactive rather than a reactive mode of supervision. Behavioural changes in terms of attitudes towards others, especially subordinates, and the development of mutual trust are essential if the informal communication structures which are crucial in any organisation are to be improved.

(Hi) fob enrichment/enhancement: At the provincial level the emphasis in terms of job enhancement has been on improving the extension support system (which comprises Agricultural Extension Specialists and District Agricultural Extension Officers). The capacity to provide consultancy and advisory services to the field level staff is enhanced through counselling, training and performance appraisal based on new indicators. In addition, several task groups have been formed at

Figure 3. Components of the OD process in AGRITEX Masvingo province



provincial level to develop a stronger interdisciplinary task orientation and to reduce the focus on single subject matter specialists. One of the task groups is on training, a key focus of the OD process. The development of field-level capacity to implement participatory approaches is emphasised.

(iv) Operationalisation of participatory extension approaches: Participatory approaches are an integral part of the OD process. Operationalisation of such approaches at field level requires several conditions to be in place. First, there must be a clear mode of operation (steps) as guidelines for extension workers. Second, capacity (knowledge, attitudes, skills and aspirations) must be enhanced and, third, organisational support to front-line service providers, the field staff, must be improved. In addition, AGRITEX's organisational structure must be made supportive of the implementation of a dialogue-oriented extension.

Strategy and methods for operationalising participatory extension approaches

Once a strong commitment to participatory approaches had been developed by AGRITEX management, the key questions became: 'how should the approaches be implemented?' and 'how should staff be trained for the new modes of operations?' In this section we highlight some of the strategies pursued by ConTill, ITDG and IRDEP which provide a foundation for the OD process.

(i) The sandwich model: incentives to implement participatory approaches?

Training alone is not sufficient to motivate extension workers to change their entrenched styles of working. In a systems perspective, structural incentives are required to facilitate this change. It proved to be most effective to adopt a strategy of exposing extension workers to active demand from farmers at the bottom at the same time as demand from the management level at the top (hence a sandwich approach). In order to strengthen farmers' demands for a change of the extension approach, collaboration was initiated with the Zimbabwe Farmers' Union (ZFU) which had itself begun to embark on a process to 'democratise' its constituent farmer-clubs. Higher level demand was conveyed through policy statements issued by AGRITEX management. These were backed up by a bold new initiative of the head of AGRITEX Masvingo who had begun to institute performance-related bonuses and advancement procedures in which staff were actually appraised by their clients, the farmers. To our surprise, some extension officers had even suggested this option themselves; one 'transformed' extension worker actually asked farmers to make a secret assessment of how much they would pay for the service she provided. The use of other performance indicators, such as assessing the extent to which extension workers had documented indigenous knowledge, created incentives for officers to become interested in farmers' own reality. At the same time, communication barriers between the 'modern' knowledge system and the 'local' (farmers') knowledge system were broken down.

(ii) A personal incentive: gaining cultural identity through working with farmers

It was observed that the acceptance of farmers' reality and knowledge as something to be valued had a huge impact on staff motivation. Most extension workers had grown up in farming families but their formal education, and the low value attributed to farmers in society more generally, had made them look down upon farmers and thus upon their own roots and origin. The new situation of working together with farmers as equals increased their own cultural identity and pride. Extension workers also emphasised that the new working style created harmony and reduced friction between them and the farmers. Once this had happened, extension workers developed an enormous intrinsic motivation and dedication which proved to be the most important trigger to operationalising participatory approaches.

(iii) What to implement? — harmonisation of approaches (move the space in line 4)

Several different participatory approaches were practised in Masvingo and extension staff tended to identify each approach with a particular person or project. For the operationalisation of participatory modes of action within AGRITEX as a whole, it was necessary to identify a single approach drawing on elements of all the various approaches. A number of high-level workshops were convened in which attempts were made to integrate various conceptual elements. A more concrete step was taken in a workshop with the implementers, field extension workers themselves. Various approaches and methods were presented. Experienced extension workers were then asked to synthesise a workable approach, to devise detailed plans of the steps that this would entail, to identify the required tools and methods for each step and to determine indicators for success. The output was an implementable approach with a clear sequence of steps. Initially this created suspicion at the higher levels. However, the fact that the approach was straightforward and had been moulded by the implementers themselves eventually proved convincing. It was subsequently adopted as the new approach of AGRITEX Masvingo which was now called Participatory Extension Approaches (PEA) (see Box 3). More details about parts of this approach are presented in Hagmann et al (1997).

(iv) Creating discomfort through training from the bottom-up

It was usual practice in AGRITEX to introduce new methods and approaches from the top. Training specialists would train high-level officers first. These people would then train supervisors who would, in principle, train the field workers. Often, however, the cascade ended before it reached the level of field workers, who consequently continued with what they had been doing all along. New approaches remained constructs in the heads of managers and officers, and

Box 3. PEA

PEA consists of three main elements: social mobilisation, planning and experiential/social learning. In the social mobilisation phase, extension workers and local people together carry out an interactive situation analysis. There is a strong emphasis on local institutions and their roles, functions and performance in the communities. Visions, needs and problems are identified and prioritised according to the social stratification. This is a negotiation process which requires time and often implies conflict. In the planning phase, each of the social groups under the umbrella of the 'community' then identifies possible solutions and plans for action and mandates one of its own institutions to take the responsibility of implementation. This ensures that the process is owned by the local people and leaves the extension workers with the role of process facilitators. During the experiential and social learning phase, the potential solutions are tried out individually or in groups and new ideas are developed. This experimentation and implementation process generates experiences which are then shared among the groups and the community in order to spread the new ideas and encourage others to begin learning by themselves. In terms of agricultural aspects, the sharing takes place in so-called 'mid-season evaluations'; the whole process, which includes the socio-organisational aspects, is reviewed towards the end of one cycle. The results are taken up in the next cycle and, if new or different problems have emerged during the action, there might need to be a return to the problem identification phase (see Figure 4). In PEA, extension is understood to be a support to people's own iterative learning based on their needs and problems. This does not exclude modern farming methods, but places these in the context of rural people's needs. A variety of tools and methods is required to facilitate such a challenging process. The iterative training mentioned above allows the extension workers to develop these skills.

were barely implemented. To avert this danger, we felt that priority for receiving training in participatory extension approaches should be given to field staff. Courses were held for farmers and field extension workers. This created 'discomfort' at higher levels; suddenly, field extension workers knew more than their superiors (Scoones & Hakutangwi, 1996). As a result the superiors were eager to be trained and training became valued and demanded. At the same time this provided an opportunity to re-think the deeply entrenched hierarchy and to negotiate new roles and relationships.

(v) A strategy to facilitate attitude changes

Implementing participatory extension approaches entails more than just applying a new method. It means working under a new paradigm with associated behavioural and attitudinal changes. Such changes require medium-term processes of interaction, confrontation and negotiation of roles. They also require a framework in which the learning process can take place. This was provided by following the ideas laid down in *Training for Transformation* (Hope & Timmel, 1984) which suggests that confrontation and negotiation of roles and functions can only take place through practical interactions over an extended period. An action-oriented training and learning cycle was therefore implemented. This took place over 1-2 years with alternating short training/ review workshops and long (six months) field implementation phases. It started in 1995 with a pilot group of about 25 extension workers (Hagmann *et al*, 1995, 1996a). As this group was trained, the training strategy and curriculum was developed, using feedback from the trainees who would later become support trainers in district training programmes. The full strategy with elements of the curriculum is shown in Table 1, overleaf.

The results of the systematic training are encouraging (far more so than isolated training elements which had proved to be ineffective in the past). Participants showed high levels of motivation and, based on this experience, a large-scale training programme is presently being set up.

Present state of the OD process

AGRITEX's OD programme is supported by IRDEP. ConTill (which has come to an end) and ITDG have no role in the internal reform but have contributed by helping to build field-level capacity for operationalisation. The programme is still underway and it would be premature to evaluate its overall outcome; it will take at least one to two more years before initial impacts and results in Masvingo can be gauged.

All the components of the OD process have to be developed simultaneously to become effective as a

Figure 4. The cycle of participatory extension and innovation development

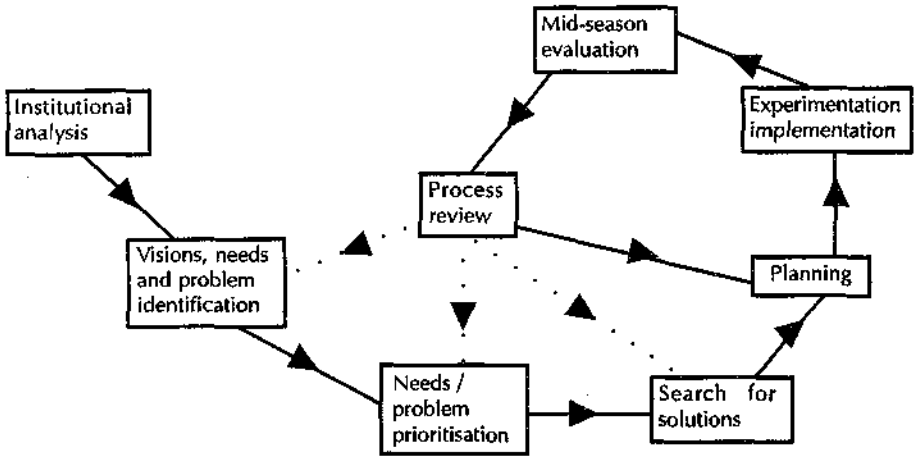


Table 1. Development of knowledge, attitudes, skills and aspirations

Knowledge	Attitudes	Skills	Aspirations
learning workshops review/follow-up workshops exposure provision of resource/ reference material learning groups in districts	training for transformation courses interaction with farmers learning in the process and building confidence	learning workshops facilitation course exposure practical exercise/ application provision of resource material learning groups in districts	intrinsic motivation through increasing cultural identity and confidence during the process extrinsic motivation through incentives, performance appraisal, staff counselling

whole. However, OD is an action learning process which cannot be planned rigidly, neither can its outcomes be readily predicted. It is not a 'quick fix' for organisational ills or a panacea as it is heavily dependent on the collective willingness of groups and individuals to undertake positive actions for organisational improvement. It deals with behavioural changes which require flexible interventions and guidance and which continuously bring forth new ideas. As with other process-oriented approaches, this makes it difficult to make recommendations for implementation elsewhere. Nevertheless, the pilot in AGRITEX Masvingo may yield lessons for others so long as it is critically analysed throughout.

7 MAJOR LESSONS LEARNT

A number of lessons have already been presented in the preceding sections. Others have been drawn out elsewhere (see Hagmann *et al*, 1996 a&b, 1997 for a review of lessons learnt at field level). This section provides a brief synopsis of major lessons in the areas of development, institutionalisation and operationalisation of participatory extension approaches.

Process-learning approaches are a precondition for success in institutional innovation projects

If clients' needs and development goals are taken to be taken seriously, it will not be possible to determine precisely in advance either the parameters of the support programme or the outcome. An open approach which is responsive to farmers' needs and takes into consideration the problems and limitations of support institutions is a pre-condition for effective action learning within a project and within institutions. This requires a very broad professional orientation as well as commitment, flexibility and willingness on the part of project staff to enter unknown and unpredictable territory.

Ways must be found to accommodate risk

Because outcomes are not predictable, adopting a process learning approach necessarily entails a high level of risk. Once an activity proves to be a success, bureaucrats tend strongly to identify with it and claim ownership. However, very few would ever take the initial innovator's risk for bureaucracies do not reward their staff for risk-taking. This poses questions as to how the risks of institutional innovation processes might be buffered. This appears to be an important role for externally funded, partly independent projects, such as ConTill, IRDEP and ITDG.

Provoking action is crucial for institutional innovation

Bawden (1994) sees the key to institutional reform to be a 'judicious combination of a gently provoking practice with a comprehensive, multi-dimensional and systemic model of learning'. This characterises the process in Masvingo well. Introducing innovations into a well-established, rigid bureaucratic system is an obvious provocation which forces the system to react and therefore creates conflicts which must be resolved and negotiated. The focus on behavioural change involves the emotional level. External 'provokers' must be aware of the delicacy of their intervention. They have to have a good insight into the organisation with which they are working as well as an ability to deal with conflict. They must also persist in their provocation, demonstrating resilience until changes have been negotiated and operationalised; premature withdrawal can otherwise lead to a return to the *status quo ante.*

There are advantages to working from within a project

Project personnel benefit from the freedom to interact with all levels of the hierarchy. Being 'outsiders' they are often in a good position to obtain information on the problems, needs and attitudes of different levels of staff. For example, AGRITEX management was poorly informed about the shortcomings in the field, as the intermediate hierarchy levels tended to filter information going upwards. Project personnel played a delicate 'informant' role, bypassing these mid-levels of the hierarchy. Inevitably these mid-levels found this threatening. It was therefore important to remain highly aware of the degree of support accorded to the project by higher levels. Depending on this support from 'above'

the provoking action had to be balanced. The danger of getting into a 'deficit trap' by reporting too many negative examples of field experience was averted by focusing on constructive criticism and identification of the opportunities for AGRITEX to overcome weaknesses.

However, prejudice against externally-driven interventions always remains. There is a feeling that projects can invest more resources, call on better qualified staff and conduct more monitoring than government departments. In addition, the ownership of pilot project activities lies outside the organisation; identification with them generally remains half-hearted. Many projects withdraw once pilots have been established, assuming that the new ideas will be rapidly adopted. In our case, rapid withdrawal of outside support might have resulted in collapse for it would have seriously underestimated the time required for individuals and the organisation as a whole to internalise the new ideas and approaches.

The process of institutionalisation of PEA is a highly complex and demanding venture

With each phase, the process of developing, institutionalising and operationalising participatory approaches in Masvingo became increasingly complex and demanding, comparable to increasing the number of balls when juggling. None of the new challenges could have been ignored or dropped without risking the failure of the whole venture. All the elements had to be developed simultaneously with sound strategies and flexible methodologies. This has implications for the replicability of such an effort in other areas and institutions, particularly those which are less well resourced.

Networking and lobbying are crucial but require favourable conditions

The successes reported here were possible because of collaboration and networking between the three projects (IRDEP, ConTill and ITDG). In all projects staff displayed high levels of motivation and commitment to the promotion of a vision of participatory development. They were prepared to take risks in provoking action. They were also highly committed to cooperation. Nevertheless, it took considerable effort to co-ordinate the concerted action. Good personal relationships and trust between the staff of the different projects and certain actors playing the 'networker' role were essential. We were assisted by the fact that there were no changes in personnel in any of the three projects between 1991-95. As most of the key factors for success are personality dependent, this was crucial. Such continuity and commitment must be considered more the exception than the rule; this leaves room for scepticism about replicating such a process as this elsewhere.

Process can be highly dependent on one personality

The success of the OD process in Masvingo was heavily dependent upon a single individual, the head of AGRITEX in the province. Without his commitment and courage to pursue a thorough-going reform and to take on the risk posed by embarking on an open-ended process, progress and achievements in the present form would have been slow, if not impossible. Again, we might be considered unusually fortunate to have had such an individual on our side, though the risks of dependency on one person are also apparent.

The broader political framework has an impact upon prospects for change

Since Zimabwe's devastating drought of 1992 a change in thinking and an opening up of rigid post-colonial structures has been apparent. The country's economic structural adjustment programme has also contributed to this opening-up. Decentralisation has been adopted as policy in most government departments and participation is seen as one way to cope with reduced government services and expenditures. These currents have influenced AGRITEX to a certain degree. They have given AGRITEX Masvingo the scope to experiment. However, the province's experiment, if successful, might easily be seen as a challenge and a threat to AGRITEX at a national level. At present the national level of AGRITEX is playing the role of an observer, leaving Masvingo to shoulder all the risks.

The biggest challenge is to change attitudes

The processes described in this paper have required behavioural and attitudinal changes on the part of all the actors involved, from farmers to bureaucrats. These changes affect relationships between farmers and extension workers as much as relationships between superiors and subordinates within the extension organisation. The changes must take place at a personal level. They can, though, be facilitated by the creation of a conducive atmosphere in which fear of loss of power and control is reduced and new relationships can be negotiated.

The ultimate impact of the operationalisation process is unpredictable

Implementation of participatory extension through the three projects proved to be highly successful. Whether the same will be true for a 'diluted' implementation through the extension service remains to be seen. The major bottleneck at present is a lack of capacity to maintain systematic training and follow-up through experienced trainers. Uniform impact cannot be expected as impact is highly dependent on the skills, attitudes and personalities of the extension workers who implement the new approaches. The extent of the impact also depends on the effective strengthening of social organisation and farmer representation, a challenging task. Qualitative and quantitative indicators of impact,

and indeed the whole methodology for participatory impact monitoring are as yet underdeveloped.

Participatory extension can be implemented in a cost-neutral way

Except for the costs of additional stationery, participatory approaches can usually be implemented within existing budgets (according to an assessment by extension workers in Masvingo). Budgets may, however, need to be reworked to accommodate the costs of training and materials. Overall impact could be higher with more resources, but in Masvingo the addition of resources was not found to be a precondition for adopting the new approaches.

Case studies and pilot activities are not the centres for spreading/scaling up of participatory extension approaches

A new understanding of project-sponsored pilot activities is suggested: they should act as learning cases for client-oriented institutional innovations. They do not themselves have to be sustainable, indeed in most cases this will be unlikely. It should be accepted that an approach can only be considered to have been truly operationalised once the institution itself, without external support, has established its own show cases and has demonstrated a commitment to spread them. Intensive training of field-level staff so that they can come up with their own show cases is the key requirement and must be given high priority. Until internal show cases are established (approximately two to three years), externally established pilot activities must be sustained, for training purposes, for further observation and to demonstrate that new approaches work.

Sustainable operationalisation of participatory approaches requires a broad consideration of the institutional environment

Operationalisation of participatory approaches throughout AGRITEX might be successful if favourable conditions continue and the commitment of all actors, including donors, does not slow down. However, there are certain contradictions which may well inhibit the spread of participatory development within the organisation.

(i) Under the new approach, AGRITEX extension workers are the change agents charged with raising farmers' awareness and facilitating the creation of a demand structure by farmers. The contradiction lies in the fact that such demand might challenge the role of the extension workers themselves. Ideally it should not be AGRITEX which creates farmer demand but the farmer lobby itself (e.g. the Zimbabwe Farmers' Union). If this were the case, the service relationship would be more clear and not depend on the goodwill of extension workers.

(ii) Through the external support that it obtains, the position of AGRITEX as an institution is strengthened. Other institutions and ministries are likely to exhibit jealousy and eventually work against AGRITEX unless they too can benefit from capacity building.

(iii) AGRITEX is not the only service provider in agriculture. Increasingly, agricultural industries (e.g. seed companies) are strengthening their services to smallholder farmers while the AGRITEX budget is being reduced. Nobody knows for how long the Zimbabwean government will be able to afford such a large and expensive extension service.

Consideration of these contradictions and the dangers they entail suggests a need to look at the institutional arrangements for development within a broader agricultural knowledge and information system (AKIS) perspective. For example, the separation of research and extension must be reviewed to accommodate innovation and learning systems which include all actors and service providers (including the private sector). Other means of intervention, such as new models for financing agricultural services, might be required. Taking such a holistic perspective the conclusion might be reached that the focus on AGRITEX is extremely narrow and not sustainable. In the end, it should not be the programme of organisational development in AGRITEX that is sustainable, but the idea of participatory development within a highly diverse network of actors. This already indicates where the learning process might lead us to next.

REFERENCES

AGRITEX (Department of Agricultural, Technical and Extension Services) (1995) *Organisational Development (Pilot Programme).* Masvingo, Zimbabwe.

Ashby, J. and Sperling (1994) *Institutionalising participatory, client-driven research and technology development in agriculture.* Agricultural Research and Extension Network Paper 49. London: Overseas Development Institute.

Bawden, R. (1994) 'Creating learning systems: a metaphor for institutional reform for development', in I. Scoones and J. Thompson (eds.) *Beyond Farmer First. Rural People's Knowledge, Agricultural Research & Extension Practice.258-63-* London: IT Publications, London,.

Freire, P. (1973) *Pddagogik der Unterdrückten.* Rowohlt, Reinbek.

Hagmann, J. (1993) 'Farmer participatory research in conservation tillage: approach, methods and experiences from an adaptive on-farm trial programme in Zimbabwe', in M. Kronen (ed.) *Proceedings of the 4th Scientific Conference of the SADC Land and Water Management Research Programme, Windhoek, Namibia:217-36.* Gaborone: SACCAR.

Hagmann, J., E. Chuma, K. Murwira and E. Moyo (1995) 'Transformation of agricultural extension and research towards farmer participation: approach and experience from Masvingo province, Zimbabwe', in S. Twomlow, J. Ellis-Jones, J. Hagmann and H. Loos (1995) *Soil and Water Conservation for Smallholder Farmers in Semi-arid Zimbabwe: Transfers between Research and Extension.* Proceedings of a Technology Workshop held 3-7 April 1995 in Masvingo: 135—45. Masvingo: Belmont Press.

Hagmann, J., E. Chuma and K. Murwira (1996a) 'Improving the output of agricultural extension and research through participatory innovation development and extension', in *European Journal of Agricultural Education and Extension* 2(3): 15-24.

Hagmann, J., K. Murwira and E. Chuma (1996b) 'Learning together: development and extension of soil & water conservation in Zimbabwe', in *Quarterly Journal of International Agriculture* 35(2): 142-62

Hagmann, J., E. Chuma and K. Murwira (1997) 'Kuturaya: participatory research, innovation and extension', in L. van Veldhuizen, A. Waters-Bayer, R. Ramirez, D. Johnson and J. Thompson *Farmers' Research in Practice: Lessons From the Field:* 153—73. London: IT Publications.

Hope, A. and S. Timmel, (1984) *Training for Transformation: A Handbook for Community Workers.* Gweru: Mambo Press.

Jones, M.L. and P. Blunt (1993) 'Organizational development and change in Africa', in *International Journal of Public Administration* l6(ll):1735-65.

Madondo, B.B.S. (1995) 'Agricultural transfer systems of the past and present', in S. Twomlow, J. Ellis-Jones, J. Hagmann and H. Loos *Soil and water conservation for smallholder farmers in semi-arid Zimbabwe.* Proceedings of a technical workshop held 3-7 April 1995 in Masvingo. Masvingo: Belmont Press.

Pretty, J.N. (1995) *Regenerating Agriculture.* London: Earthscan.

Scoones, I. and J. Thompson (1994) 'Knowledge, power and agriculture - towards a theoretical understanding', in *Beyond Farmer First. Rural People's Knowledge, Agricultural Research & Extension Practice.l6-32.* London: IT Publications.

Scoones, I. And M. Hakutangwi (1996) *Evaluation of the Chivi Food Security Project.* Unpublished Report. Harare: Intermediate Technology Development Group.

Siilzer, R. and A. Zimmermann (1996) *Organisieren und Organisationen verstehen.* Opladen: Westdeutscher Verlag.

Thompson, J. (1995) 'Participatory approaches in government bureaucracies: facilitating the process of institutional change', in *World Development* 23(9):1521-54.

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