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Improving the Output of Agricultural Extension and Research Through Participatory Innovation Development & Extension; Experiences from Zimbabwe

by

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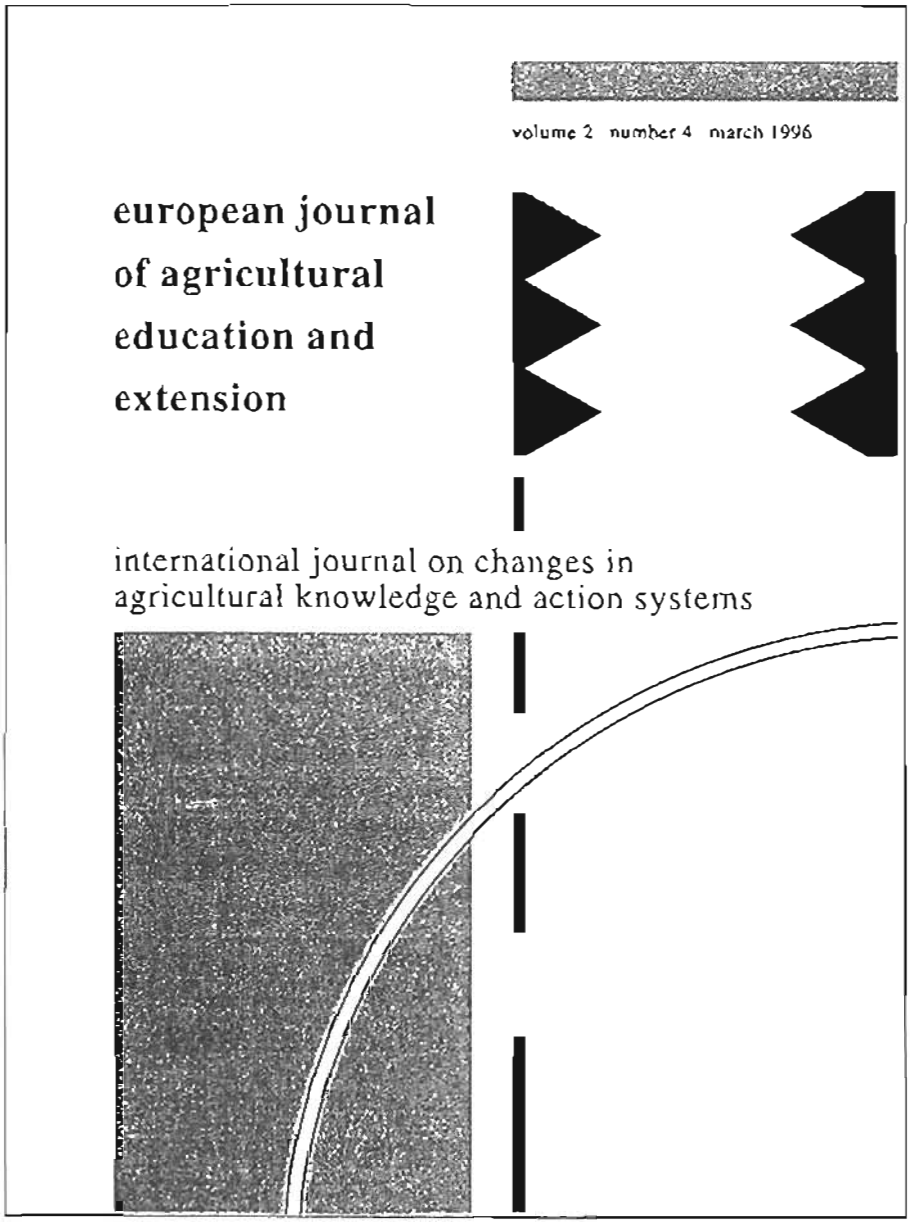

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J. Hagmann*, E. Chuma* and K. Murwira**

Abstract

This paper describes the rationale for a change from conventional extension towards participatory innovation development and extension. The "Conservation Tillage Project" and the "Food Security Project" developed such an approach and have embarked on institutionalisation of this approach into the agricultural extension service in Masvingo Province in Zimbabwe. Dialogue with farmers, farmer experimentation and the strengthening of self-organisational capacities of rural communities are the major elements to improve development and spreading of innovations, thus the efficiency of extension.
The new approach requires a role change of agricultural extension workers from teacher to facilitator as well as appropriate methods and tools. Elements of "Training for Transformation" and Participatory Rural Appraisal (PRA) were tested and developed and were found to be effective tools. The strategy to institutionalise participatory extension is based on joining efforts and networking with other organisations, a campaign to familiarise institutional staff and a training and follow-up programme for staff in the framework of organisational development.
The experiences show that the attitudinal change required to implement participatory approaches is highly depended on personalities. To have an impact on the change of attitudes a continuous medium-term training process with a close follow-up is required. The paper concludes that institutionalisation of participatory approaches into hierarchically structured organisations is a highly complex intervention. In order to be successful, major changes in planning, implementation and monitoring and evaluation procedures are required. Changes of that nature require a process of at least 5 to 10 years and high commitment on the side of institutional staff on all levels and donors as well.
Eur J Agr Educ Ext (1996, 2, 4, pp 15-24)

Background to the development of a participatory approach

In the framework of the project "Conservation Tillage for Sustainable Crop Production System" (Contill) adaptive on-farm trials with a farming systems perspective have been carried out since 1991. In order to stimulate adaptations to techniques offered by the project and to stimulate development of farmer innovations a participatory process for technology development has been initiated. During the process, experiences with smallholder farmers and with extension staff soon showed a need for further developing the approach for innovation development into an approach for participatory extension.

It proved to be unlikely that flexible, often site specific, innovations developed in the framework of the project would spread effectively if promoted with the present approach of the agricultural extension service (AGRITEX). Two main limitations were identified in the extension approach (see for example Madondo, 1992 and 1993): firstly the outreach of the extension

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service is limited as it concentrates on a "master farmer programme" which generally involves only approximately 10% of the farming households and secondly, these farmers are being taught normative, rigid blanket recommendations in a top-down manner which hardly encourages dialogical, interactive learning, adapting of technologies and developing their own solutions. On the farmers' side it was revealed that for an effective spreading of technical innovations the social environment must be favourable which is often not the case in the rural communities in Zimbabwe (Nyagumbo, 1995, Chuma, 1994, Hagmann, 1993). Besides technical innovations, socio-organisational developments and innovations must be considered and addressed.

Based on these limitations and requirements a participatory approach was developed in a process, driven by practical experiences while working with individuals and communities.

Concept and approach for participatory innovation development and extension

The goal of the participatory process is sustainable management of natural resources and food security in smallholder farming areas in Zimbabwe. It aims at the developing and spreading of sustainable farming practices and at enabling rural communities to better handle their problems in a self-reliant way, without depending on incentives from outside. It addresses communities as a whole and individual families as units (men and women together).

The concept for participatory innovation development and extension is based on dialogical communication, farmer experimentation and strengthening of self-organisational capacities of rural communities. Encouragement of active participation and dialogue as partners among all actors on the local level, for example, farmers and their institutions, extensionists and researchers are the mainstay.

Farmer experimentation

Dialogue and farmer experimentation is being encouraged in an environment where a very powerful top-down extension service has considered farmers' knowledge to be backward and of no importance for nearly three generations, and where farmers have been conditioned to accept externally developed standardised technologies (Madondo, 1995). Stimulation of experimentation of their own proves to be a useful element to re-value and appreciate traditional and indigenous knowledge, to combine it with new techniques and synthesise the two. As an overall effect, the knowledge and understanding gained through this process strengthens farmers' confidence in their own solutions and increases their ability to choose options and to develop solutions appropriate for their specific ecological, economical and socio-cultural conditions and circumstances. This process aims at transforming the present standard-oriented extension into an output-oriented system where not the adoption of one specific technique is the indicator for success, but, for example, the efficient conservation of soil and water.

Strengthening self-organisational capacities

Strengthening self-organisational capacities of rural communities with their local institutions often necessitates improvements in the communication structures within the local institutions, which farmers analyzed to be hierarchical, weak and discouraging for active participation in community activities (Hagmann, 1993). In addition, the conflict between traditional leadership structures and modern, government-introduced representation contributes to conflicts and to weak local institutions. Leadership training and facilitation of dialogical communication in village workshops are elements which have shown high potential for improving cooperation, sharing of knowledge and participation of all gender and age groups in extension and rural development (Hagmann and Murwira, 1994)

Strengthening of local institutions, together with an increasing confidence through experimentation, creates an atmosphere conducive to sharing of experiences, innovations and knowledge among farmers and leads also to an effective farmer to farmer extension.

Philosophy and tools

The experience showed that this concept, in particular the component of leadership and cooperation, required more than a number of practical PRA-tools (see, for example, Theis and Grady, 1991). A philosophical framework for the participatory development process was required and introduced in the form of "Training for Transformation" (TFT). This training programme was developed in Kenya in 1974 and adapted to Zimbabwean conditions by Hope and Timmel (1984). It originates in the pedagogy of Freire (1973) and is built on conscientiousness through participatory education, where learning is based on experience from the living world of the actors. Teaching, therefore, consists of dialogue via problem posing, which means facilitation of communication flow and asking questions to help groups find the causes and the solutions themselves rather than the teaching of "foreign" knowledge and realities. TFT provides concrete methods and tools (e.g. codes, role plays, poems etc.) to practically implement Freire's approach. It empowers local people to control their lives through active participation in their own development and in the sharing of ideas and knowledge. It stresses the importance of participation and co-operation in organisational development in order to build and strengthen institutions which enable people to become self-reliant. It aims at strengthening people's confidence (e.g. slogans like: "nobody knows everything and nobody knows nothing") and integrates social analysis to help groups to find the root causes of problems (Hope and Timmel, 1984). Freire's key principles form a philosophical framework which is relevant for any individual living in a society and can be applied in almost all situations in life. The strong acceptance of and agreement on these principles by various characters with different attitudes and in different mainstreams is its major strength. It manages to integrate and unite these, often conflicting interests, under one umbrella: the key principles.

This effect is of great importance in a society where socio-cultural change has weakened the social cohesion and security which was based on traditional rules and regulations, which is the case in Zimbabwe (Hagmann, 1993, Nyagumbo, 1995). Therefore, according to our experience, a new "umbrella" which can replace or at least partly substitute the old security is particularly important as the desire of social harmony is very strong and dominates most decisions of individuals. Without providing a platform to develop the new "umbrella", co-operation and leadership structures in rural communities will generally remain weak and often be dominated by the unresolved social conflicts, which also adversely affect innovation development and extension.

Farmers are introduced to this framework right at the beginning of the process in awareness-raising community workshops. Elements of TFT are utilised selectively in the process and are complemented by tools originating in PRA, diagnostic survey (Raintree, 1987) and goal oriented planning "ZOPP" (GTZ, 1987), as well as materials and aids for dialogical teaching in order to initiate and follow-up participatory innovation development and extension.

Figure 1 illustrates the concept of participatory research/innovation development and extension. It consists of three main components, the "process of learning and development through experimentation", the research component and the extension component.

The "learning and development through experimentation" process

The main process (centre column in Figure 1) can be considered as "learning and development through experimentation", initiated and facilitated by extension workers. It is people-centred as villagers analyze and define their problems, needs and potentials and the activities they want to carry out. The intervention from outside facilitates the process, raises awareness, contributes methodologies and inspires with potential technical options, but does not dominate and push people to carry out certain (from outsiders) pre-conceived activities. It is an open-ended development process where research and extension are support agencies and ideally participate in peoples' programmes and not vice-versa.

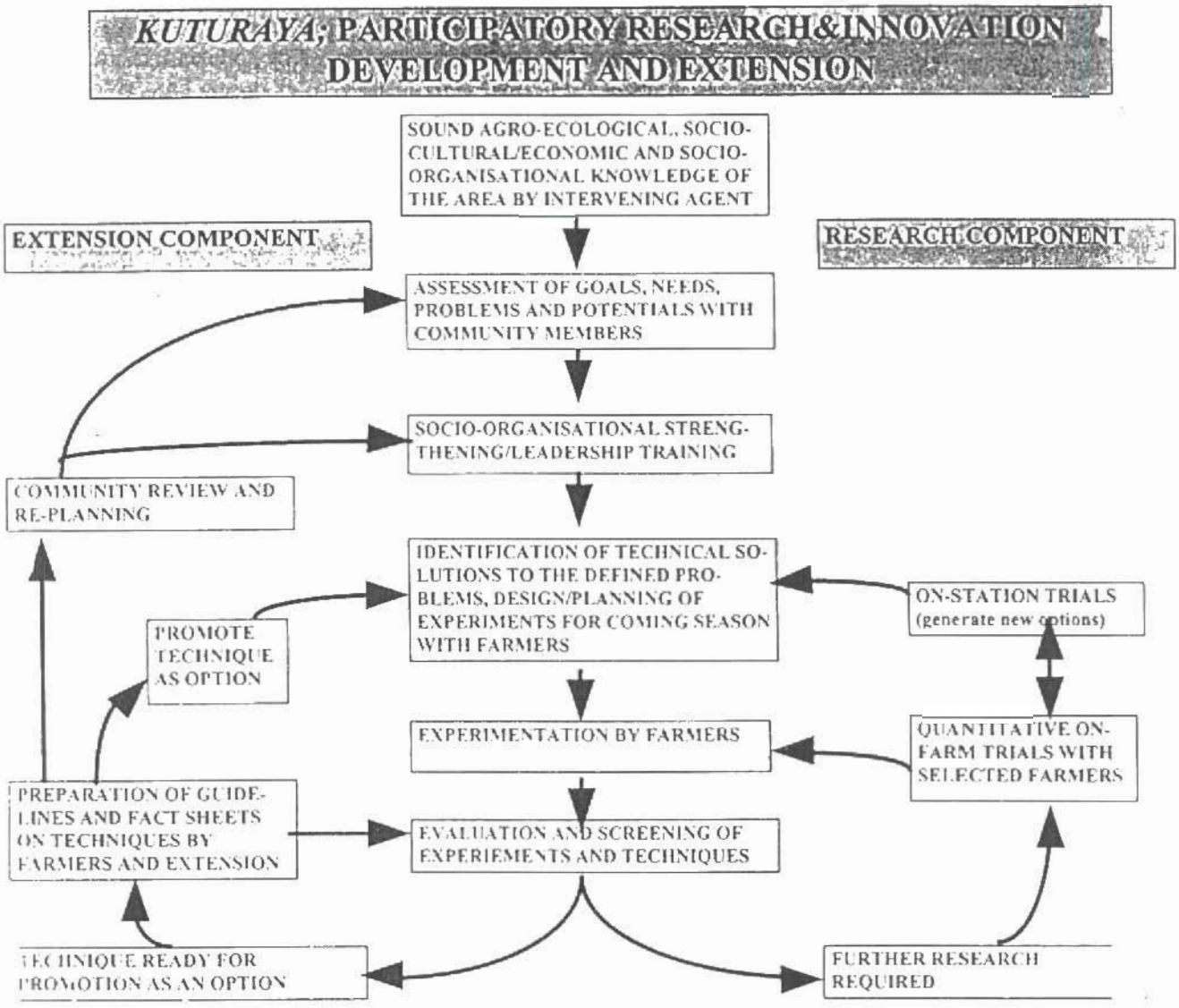

Figure 1 Conceptual model for participatory research/innovation development and extension

Development of innovative techniques (research component in figure 1)

Innovation development is based on the trial and error principle. Farmers are encouraged to experiment with ideas and techniques emanating from their own source of knowledge or from outside sources. Problems identified during the experimentation process are the basis for a research agenda and the resulting on-farm trials in which more focus is put on quantitative data support the findings. If technical processes are not fully understood farmers" ideas are taken to the research station for further research under controlled conditions.

Spreading of innovative techniques (extension component in figure 1)

Spreading is stimulated through the strengthening of the self-organisational capacities of rural communities and institutions. Improvements of communication structures, skills and modes are facilitated with the help of the TFT philosophy

and tools in order to enable people to create an environment where they feel free to communicate and share their skills and experiences with all members of the community. Once this level of communication flow is reached in the communities, a high dynamic in fanner to farmer sharing and extension should result. In technical terms, not new techniques as such are promoted, but the experimentation with technical options and indigenous technical knowledge (ITK) is encouraged. Experiences and results of the experiments are shared and compiled by farmers and extension as guidelines/ training materials which focus on the understanding of the factors which make the techniques succeed or fail. Important tools are annual community reviews where technical and socio-organisational progress is reviewed and evaluated and adaptations to the planning made (see Figure 1).

The new role of the agricultural extension worker

At present agricultural extension workers (AEW) see their role as that of a teacher. A participatory approach requires a major shift in roles from teacher to facilitator. This implies that the AEW is no longer the main carrier of messages and knowledge, but coordinates and organises the knowledge acquisition from several sources. Utilising the TFT philosophy and the tools, the AEW as a facilitator would then initiate a participatory process in communities with a major focus on local institutional strengthening, needs identification and prioritisation. He/she would assists fanners in the discussion about solutions with background knowledge and options (e.g. through organisation of "look and learn" visits to innovative farmers, research stations etc.) and encourage fanners to experiment with these options .and ideas as described above. The AEW would also encourage farmers to hold field days for those who could not directly participate. In the course of time the facilitator role will be taken over gradually by community leaders who are being trained in facilitation skills. Figure 2 summarises the main elements of the facilitator role.

Strategy for institutionalising the participatory approach

Pilot activities were carried out by the Contill Project, the ITDG Food Security Project and the Community-Level Planning and Development operations of the Integrated Rural Development Programme (IRDEP) which is supported by GTZ. These activities served as case studies for the development of a model for participatory approaches. The case studies enabled a detailed monitoring of processes, impacts and reactions on the side of farmers and extension staff. The success of the three projects in terms of development and extension of innovations (Hagmann et al. 1995), the improvements in the

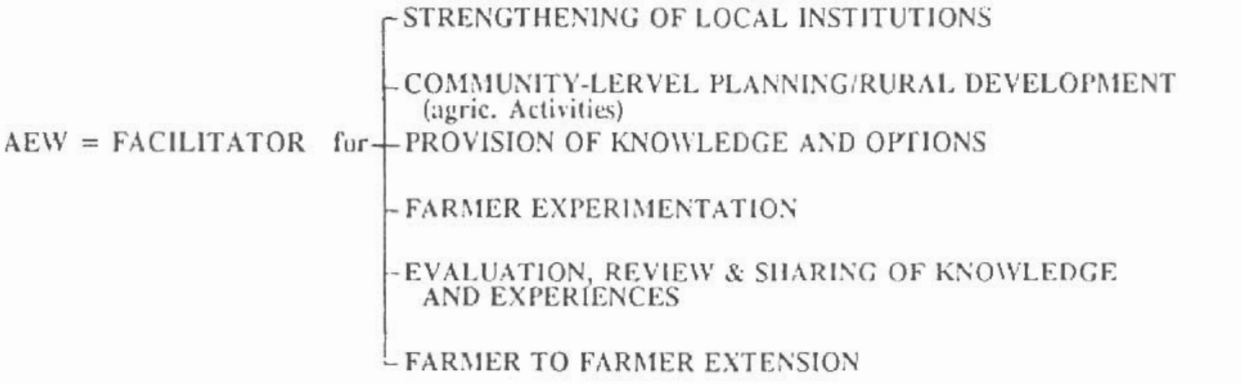

Figure 2 The main elements of the facilitator role

social organisation in communities (Hagmann and Murwira, 1994) and in terms of community-planned and implemented projects (Göricke, 1993) justified scaling up. In addition, the extension service which is a strong and functional organisation showed interest to try new approaches in order to increase their efficiency. Therefore, a strategy for institutionalising the participatory approach was developed for Masvingo Province, several elements will be described.

Networking
Several organisations and projects in the Masvingo Province apply elements of participatory approaches. The focuses differ, but all of them work in close collaboration with AGRITEX, the extension service, as this is the institution which is strongly represented at field level. The sharing of experiences among those projects has been extremely valuable and we were able to closely cooperate with ITDG and with IRDEP and coordinate activities aiming at institutionalisation of participatory approaches into AGRITEX. The informal networking and joint lobbying has resulted in Teaming from each others experiences, joint papers and workshops. It proved to be crucial to obtain the "critical mass". necessary to draw attention to participatory approaches and the pilot activities. At present, after several presentations in various provincial, national and international workshops, the network is expanding, as vivid interest has been shown by various organisations from other provinces.

Familiarisation of all levels of staff
Soon after the interest within AGRITEX had been created familiarisation of all levels of extension staff became a priority in order to stimulate discussions. Besides provision of literature and reports, several workshops organised and/or supported by the three cooperating projects were held during the last two years. These workshops were combined with field visits to case study areas. Participatory approaches were presented and experiences discussed. This enabled higher-level staff to get fully involved in the process and to adopt the new ideas. Exposure to the impact of the case studies and to fanners who analyzed the difference between the conventional and participatory approach were particularly convincing. In addition to these formal activities, informal discussions based on good personal relationships and field visits were key elements to familiarise AGRITEX officers with the participatory process and raise their acceptance of these ideas. Once high-level officers were convinced of the potential of the new approach, AGRITEX Masvingo organised a familiarisation workshop for all its staff in the province. The management level wanted to give direction to the lower-level staff and show their support of these approaches.

Elaboration of a training and follow-up programme for extension workers
After familiarisation of the key players, a systematic training of 30 extension workers in TFT, participatory tools/methods and facilitation began. An initial two-week course which was attended by extension workers and farmers together was followed by a report-back workshop to the communities who chose the farmers and to AGRITEX District staff. Extension workers then decided on communities in which they wanted to apply and practise the skills. A follow-up in facilitation training is being provided throughout one year at three to six monthly intervals. These follow-up workshops will give participants the chance to assist each other, to exchange experience and to improve their facilitation skills while practising. The experiences of this training process are being documented and a final evaluation after one year will reveal the effectiveness.

Framework of organisational development
AGRITEX Masvingo has recently launched an organisational development programme which is supported by IRDEP. The purpose of the programme, which was requested by the Chief Agricultural Extension Officer is "relevant aggregate output at all levels of AGRITEX staff in Masvingo Province is improved" The most important result is: "extension delivery system to farmers in Masvingo rovince is improved" (AGRITEX, 1995). As participatory extension has shown to be the most promising approach for improving the extension delivery system, it has become an integral part of the organisational

development system as the software for achieving the most important result. The successful project to project cooperation between Contill and IRDEP and the informal network has assisted in complementing the activities and approaches in an output-oriented organisational development and support programme.

Experiences and lessons learnt

Our experiences with institutionalisation in Masvingo are based on a two year effort to actively integrate participatory approaches. The full cycle of the training and follow-up programme for extension workers, however, was only initiated in 1994 and has not been completed as yet. Some major experiences and constraints will be discussed. More details are described in Hagmann, Chuma, Murwira and Moyo (1995).

Participatory approaches demonstrated high potential to increase the efficiency of extension and rural development activities

The impact of the participatory approaches of the three projects was highly convincing in terms of active fanner participation in innovation development, increased rates of adoption of technologies and innovations and in terms of self-organisation and target-setting of communities. In some areas up to 80 % of the households were involved in soil and water conservation techniques developed and promoted through the activities.

Implementing participatory approaches requires a change of attitudes

Experiences of the case studies which were implemented by project staff in collaboration with extension workers showed that the change in attitude of extension staff towards smallholder fanners is the key determinant for the success of the approach. In a hierarchically structured society, where the hierarchy is mostly based on the level of formal education, it is difficult for formally educated staff to accept fanners with their traditional and experience-based knowledge system as equals and to learn from them. Attitudes cannot be changed by utilising certain methodologies only; it also requires a philosophical framework to create conducive conditions in which this process can take place. Training for Transformation (Hope and Timmel, 1984) has demonstrated the highest potential as philosophy.

Ability to develop participatory skills depends on personalities

As attitudes highly depend on personalities, it is doubtful whether staff who have been professionally socialised and to a certain extent conditioned under colonial rule are capable of reversing the top-down approach as this would question most of their working lives. The same applies to older farmers who have accepted their obsequious and subordinate role and who now identify with it. Therefore, the impact depends strongly on the AEW and one can not expect it to be uniform.

Training in participatory approaches is a continuous, medium-term process

Training courses in TFT and participatory tools were initially successful, but it was revealed that the impact is low without an on the job follow-up of the process of change over a medium-term time span. Intensive training, support and follow-up are extremely important in order to avoid the labelling of the present work as participatory simply because participation is the talk of the day (which occurred with other approaches in the past). In particular, during the transition phase, extension workers need strong support to overcome the often observed insecurity and fear of losing power when giving up the teacher role.

Commitment on higher levels and effective staff appraisal system are required

Various levels of staff have frequently misinterpreted participatory approaches as "pulling out of AEW", "let farmers do what they want", as relaxation and as not being accountable for failures. To avoid this danger, besides proper training and follow-up, a more effective and appropriate staff appraisal and counselling system (including performance criteria) has to be developed and must be effective from the start of the implementation of the participatory approach. This requires a strong commitment on the part of higher level staff to give direction and incentives to the

extension workers and to follow-up the operations. A key element which was agreed upon in Masvingo is the integration of a fanner appraisal of the extension workers into the M&E system in order to increase the accountability of extension workers towards their clients, the farmers. Another important job evaluation criteria is the performance in the documentation of fanner knowledge by the AEW. This is an incentive for the AEW to learn from farmers and also to recognise the value and the importance of indigenous knowledge. As AEWs are also part of the indigenous knowledge system, this enables them to cross the borders between the western knowledge system, which they presently represent with their advice, and the indigenous knowledge system.

Criteria and indicators for monitoring and evaluating the impact of participatory extension need to be developed

The present M&E system is based on quantitative indicators for adoption of key practices to increase and sustain production. Successes of a participatory process in a community, however, require a medium-term time frame and the output in terms of quantifiable increases in production cannot be expected to be very spectacular in a marginal semi-arid area. Qualitative results, which are equally important and elementary in the process (e.g. human development in terms of an increase in self-reliance and in self-organisational capacities, confidence building etc.), however, are difficult to measure and have not yet been taken into consideration in the indicators.

Conclusion and recommendations

Experiences gained so far allow the following conclusions and recommendations:

- Institutionalisation of participatory approaches into a hierarchically structured organisation is a highly complex intervention. It requires a major reorientation of planning, implementation and M&E systems for which high commitment from all staff is needed and must be considered as a medium to long term objective.
- Case studies or pilot activities in which the participatory approaches are developed, tested and adapted are very important. They serve as practical examples (methodologies, tools, and impact) to familiarise and convince institutional staff and thereby influence policies from the bottom-up. Detailed monitoring of those operations should be continued parallel to institutionalisation and gradual scaling up in order to detect pitfalls and mistakes.
- Intensive efforts to familiarise and train all levels of staff is crucial. Networking and coordination of activities with other projects appears to be a successful approach in reaching a "critical mass".
- Once higher level staff is committed, intensive training, support and follow-up of field extension staff must have priority in institutionalising participatory approaches. Extension workers at the interface between farmers and the extension agency require new skills and a higher social competence to tackle the facilitator role. As staff turnover at field level is low, intensive training at this level contributes to the sustaining of the efforts.
- Despite favourable conditions in Masvingo Province, it shows that effective institutionalisation of participatory innovation development and extension into the agricultural extension service will require a process of at least 5 to 10 years. Continuous commitment from the institution as well as from the donor side during this period will be critical to success. Nevertheless, due to the availability of an effective training, an M&E system and the willingness to institutionalise the approaches, chances for success are bright in Masvingo.

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