

Strengthening Local Organizations for Conservation Agriculture – Some experiences from South Africa and Zimbabwe

Ficarelli, P. P.¹, Chuma, E.², Ramaru, J.M.³, Murwira, K.⁴, Hagmann, J.⁵

KEY WORDS: Conservation farming, multi-stakeholder model of agricultural extension and research, innovation as a complex social process, local organisations & institutions, local organisational development process.

ABSTRACT

The paper highlights the importance, in the African context, of developing organizations at local level as a focal intervention for the adoption and dissemination of innovations for sustainable agriculture. It explains what is meant by facilitating a process of local organizational development and identifies some key success factors based on practical experiences and lessons learnt during the implementation and impact assessment of agricultural projects in South Africa and Zimbabwe. The paper strongly emphasises the need of creating a social and organisational environment at local level conducive for achieving broad dissemination and continuous adaptation of technologies for conservation farming in rural Africa. The concept of local organisational development applies not only to the area of conservation farming but also to the development of other innovation systems for community development. The understanding of the practical aspects of this concept from development practitioners and the acquisition of a new set of skills by field staff for facilitating a local organisational change process are required.

INTRODUCTION AND BACKGROUND

The benefits of conservation agriculture technologies in sustaining or increasing crop production through conservation of soil, water, nutrients and draught power are well recognized (Elwell 1993, Oldrieve 1993, Russel 1996). However, their adoption in Africa is generally very low (Nyagumbo 1998). Some of the factors hindering the wide adoption of conservation Agriculture in Africa have been identified as political interference in land resettlement, insecure/unfavourable land tenure systems and ineffective technology development and dissemination approaches (Benites and Friedrich, 1998). The poor performance of public extension services and their narrow focus in the delivery of technical packages developed on-station by research is a major contributor to the ineffective dissemination of conservation agriculture technologies amongst smallholders. In the last two decades, several alternative approaches have been developed or re-discovered (like action-research) that have been adapted to integrated natural resource management and sustainable agriculture technology development. Despite these conceptual advancements and the better understanding of rural livelihood systems and the introduction of suitable agricultural technologies, the key challenge often faced by research and extension practitioners remains the operationalisation of these concepts in practice.

This paper describes the experiences and conceptual insights gained, since 1991, in the frame of the Contill project in Zimbabwe and since 1998, of the BASED programme in South Africa in the large-scale implementation of participatory approaches in agricultural extension. The South African programme has been part of a collaborative work between the German Technical Co-operation (GTZ), the provincial Department of Agriculture and other partners such as the National Agricultural Research Centres (ARC) aimed at improving agricultural service delivery to the previously disadvantaged communities of the former homelands of the Limpopo Province. The programme started by re-orienting extension services by developing a participatory extension approach together with a selected team of field officers. Overtime, this approach has focused on the development of

¹ Development of Rural Service Systems P.O. box 13732, 0028 Pretoria, South Africa base.gtz@pixie.co.za

² Univ. of Zimbabwe, Inst. of Environmental Studies P.O. Box MP167, Harare, Zimbabwe
chuma@africaonline.co.zw

³ Broadening Agricultural Services & Extension Delivery (BASED), P.O. Box 4645, 0700 Polokwane South Africa, ramarujm@agricho.norprov.gov.za

⁴ International consultant, P.O. Box 1094, Mutare, Zimbabwe kmurwira@zol.co.zw

⁵ Process advisor / Consultant, Talstrasse 129, D-79194 Gundelfingen, Germany jhagmann@aol.com

inclusive community based organisations involving farming and non-farming groups at local level. This process was facilitated with the vision of creating stronger local institutions for lobbying local government structures and linking with service providers to address grassroots' demands for technical and community development services.

In an increasingly large number of case studies, the implementation of this approach has led to the identification of technical demands from numerous farmer groups, like, amongst others, the access to technological options to counteract soil erosion and cope with rainfall scarcity, issues typical of the semi-arid and marginal soil conditions found in the area. The need of responding to such demands has led to the creation of multi-stakeholders platforms including research and other private and public service providers, to respond to these demands articulated at community level. The combination of these two processes has finally led to the change or adaptation of Departmental support systems, which are presently supported through an ongoing organisational development process.

The South African programme has further developed the methodological approach and local organisational concept originally developed in Zimbabwe by the Contill programme, a co-operation between GTZ and the Zimbabwean national extension services between 1990 and 2002 in the southern districts of the Masvingo province. In this pioneering experience a great deal of success was achieved by integrating an initially narrow focus on soil and water conservation research with local technical knowledge systems and other components of the livelihood system. In order to ensure impact of these experiences, at a later stage, a series of programme interventions were carried out at national research and extension service level to influence the institutional system to make it more supportive and responsive to the demand articulated at local level (Hagmann & Chuma, 2000).

LESSONS LEARNT IN FOSTERING TECHNOLOGICAL CHANGE-AND SPREADING INNOVATIONS FOR SUSTAINABLE AGRICULTURE AND DEVELOPMENT

Broadening the scope of Agricultural Extension and Research

Historically, in many developing countries the increase of agricultural production through the modernisation of agriculture has received most attention by policy makers. This vision of development is based on the assumption that the transfer of knowledge from scientists to farmers will automatically trigger the necessary adoption of the new recommended technologies. It has been in this context that extension has increasingly narrowed its role to basic information transfer, advisory and training functions. The World Bank supported Training & Visit System, which has been probably the most prominent reform of the public sector in many countries in post-colonial Africa, has been instrumental in the realisation of this still common vision for agricultural development.

This extension system is based on the “transfer of technology model”, whereby new technologies developed by researchers are disseminated by extension staff through their contacts with innovative individuals or group of farmers. These early adopters or master farmers set the example for the remaining majority of the farming community that copy the innovative practices from them (see fig.1). This linear model of research and extension has been shown to be inappropriate or largely ineffective, outside commodity-based agriculture for the development of smallholder/peasant farming systems (Hulme, 1991). This has been shown particularly in the area of conservation agriculture and natural resource management that are critical factors in the wider context of agricultural production to ensure ecological sustainability of production beyond its productive and economic aspects. Moreover,

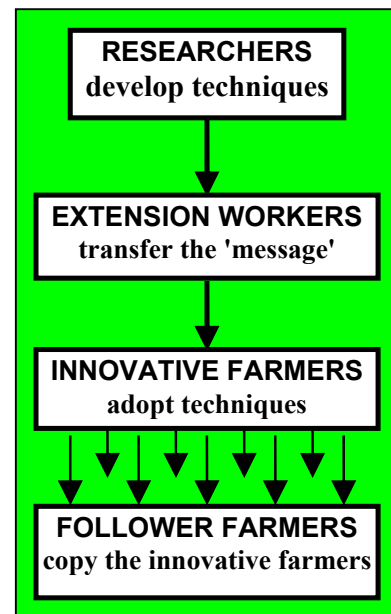


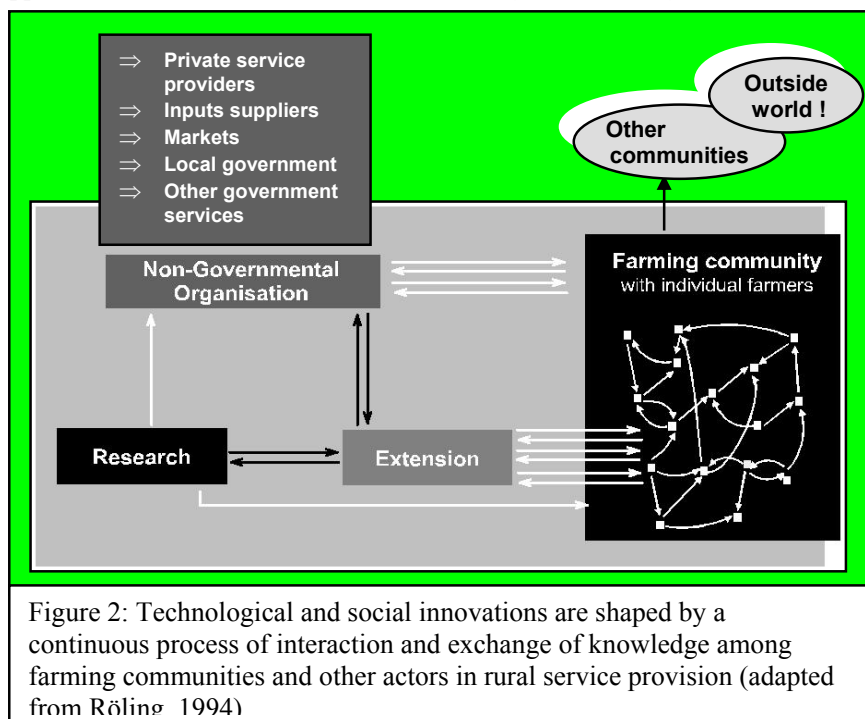
Figure 1: The transfer of technology model (ToT) for developing and spreading of innovations

smallholders production systems cannot be separated from the domain of the wider rural livelihoods, such as off-farm income generation, social and cultural aspects resource access etc. that greatly influence farmers' decision making process about agriculture (Christoplos *et al.*, 2001) It is because of this complex and highly dynamic situation found in rural communities that adoption and usefulness of new technologies developed by research and disseminated by extension has remained low. Thus, smallholder demands for the sustainable intensification of agriculture have been left largely unattended or ignored by public extension and research services and agricultural and environmental policies (Whiteside, 1998; Ashley & Maxwell, 2001).

From linear model of extension and research to the multi-stakeholder learning model

In the last two decades, several alternative approaches to research and extension have been developed in order to overcome the weaknesses of the ToT model and face the challenges posed by increased rural poverty and deterioration of the natural resource base. Despite their seemingly incongruous philosophical underpinnings, approaches such as Research-Extension Linkages of Training and Visit systems, Farming Systems Research, Participatory Technology Development and Farmer Field Schools, all confirm the view of the importance of interaction and linkages between more actors to develop technologies and better enable dissemination of innovations. Most of these participatory approaches to extension can be clustered under the umbrella of what is described as the “linkage model” of agricultural extension, on the basis of an agricultural knowledge and information system perspective (AKIS) (Röling, 1994, 1998) (see figure 2).

The importance of this model is that it broadens the scope of extension and research. It enables to address content-wise also the social and organisational constraints of the livelihood system (to include a kind of “social extension”) and, institutionally, to make them both part of the rural service delivery system.



The importance of this model is that it broadens the scope of extension and research. It enables to address content-wise also the social and organisational constraints of the livelihood system (to include a kind of “social extension”) and, institutionally, to make them both part of the rural service delivery system.

This potential new role of extension and research has been operationalised in our Zimbabwean and South African experiences in the framework of a participatory extension approach based on a phased learning cycle (Hagmann & Chuma, 2000; Hagmann *et al* 2002). The purpose of this approach is to motivate farming groups and other community-based organisations to innovate and better utilise the available natural and social assets of the livelihood system. This approach has been developed through an action-research process with local extension staff. Their involvement in the learning process of both programmes has been crucial to increase facilitation competencies of staff to re-build linkages within communities and between communities and service providers to develop local innovation systems.

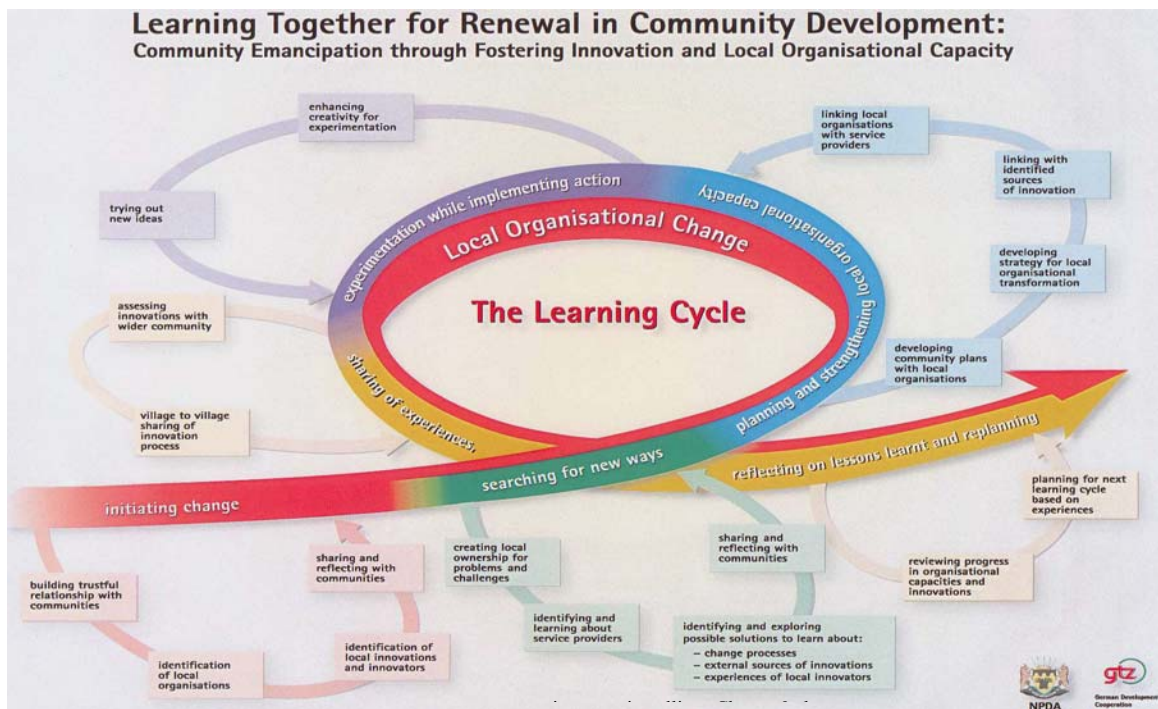


Figure 3: The five basic phases of the learning cycle as developed through an action-research process in South Africa

The learning cycle as developed and implemented in South Africa comprises of five phases (see figure. 3). Strengthening of local organizations (local organizational change) is central and to be understood as a process cutting across all phases. The cycle is open and as such accommodating different methodologies and tools (e.g. FFS, PTD and PRA) to deal with different topics in agriculture, local economic and rural development (e.g. soil fertility management and conservation farming, low input livestock systems, entrepreneurship development, HIV/AIDS etc.).

Lessons from experience - enhancing the dissemination of conservation agriculture innovations

The approach used to introduce specific innovation in conservation agriculture follows the same guiding principles and core values characteristic of the overall approach shared with local groups and community - based institutions. The major steps followed to introduce innovations in the area of conservation agriculture were as follows:

1. Awareness creation on the causes and consequences of land degradation by using appropriate learning tools (rainfall and soil profile simulators) to explain complex physical and biological processes and stimulate self-discovery (see more details in Hagmann & Chuma, 2000)
2. Identification of local innovators from within the community/locality as sources of ideas
3. Exposure visits of community representatives to sources of innovations within and outside their locality and report back of findings to community at large
4. Local organization for experimentation
5. Planning of formal experiments (e.g. paired treatment design)
6. Testing of technical options through participatory on-farm trials and experimentation
7. Monitoring of progress through community-based mid-season evaluations and sharing of experiences among farming groups
8. Awarding prizes of best experiments by local community organisations and selection of promising technologies for further experimentation or dissemination
9. End of the season evaluation of the overall experimentation process and selection of technical adoption for wider adoption

The analysis of experiences made by implementing this approach at community level has led to the development of three important lessons to enhance the dissemination of conservation farming

technologies. The same lessons apply to the dissemination of other social and technological innovations.

The first lesson is that **conservation farming technologies are not adopted but rather adapted through a process of large-scale experimentation based on farmers' experiential learning.**

Farmer experimentation is commonly understood as on-farm-trials where farmers and researchers can interact on the farmer field. In our experiences in Zimbabwe and South Africa the aspects of participatory research and the quantification of results from formally designed trials is just one component in a larger innovation system. The number and quality of “formal” trials under researchers’ direct supervision are just the starting point in the adoption and dissemination of agricultural innovations. Other aspects, normally overlooked, such as farmers’ creative adaptation of key principles/core components of a certain technical option, the simple “trying out” of original ideas/solutions, farmers’ increased self-confidence and pride as co-researchers, farmers self-discovery and the valuing of farmers’ own knowledge and experiences are at least as important as adaptive research activities (Hagmann *et al*, 2002). The active support, after the initial developmental stages of a technological innovation, of an adaptation phase based on large-scale experimentation is essential for its adoption. The operationalisation of this broader definition of experimentation has shown to be also instrumental for enhancing the understanding of the principles underlying conservation agriculture and for generating new solutions to the problems faced by farmers. This is also why, it is the strengthening of farmers’ management capacity during this adaptations phase rather than the focus on adoption of a specific conservation agriculture technique that has become over time the main goal of our Southern African experiences.

The second lesson is that **innovation is a complex and adaptive multi-actor process bigger than R&D activities involving only research, extension and farmers.**

The approaches to the development of conservation farming developed in Zimbabwe and South Africa lend theoretical and empirical support for the views of innovation as a social process (Pfaffenberger, 1992) and as a complex adaptive multi-agent system (Douthwaite, 2002). These views are based on the social construction of

Developing a ripper-planter: an example from South Africa

One of the plausible ideas that research had developed to counteract soil erosion and water scarcity problems in the Limpopo Province was the use of a specially designed ripper share, as a conservation tillage option for tractor-powered systems. This new implement has been used in different farmers’ field for testing. The first experiences led to the conclusion that the implements can be useful only if a planting unit is also attached to it. This has led to another period of partnership between the R&D team and farmers organisations, which after several learning reiterations of 3 years have led to the production of a first working ripper planter prototype. This conservation tillage implement attracted the attention of another R&D team from Australia working on legumes. This team saw the opportunity of introducing legumes in farmers’ fields as cover crops in conservation tillage complementing already other efforts by another R&D team working with farmers on intensifying traditional practices of maize intercropping with local legumes. Presently, the implement has also attracted the attention of commercial implement producers who are now developing new implement prototypes by adding their experiences in commercial implement production. Only the adaptation phase, which will follow in the next few years, will tell if the technology is sufficiently fit for the local farming systems, whether the private sector will be successful in the commercial production of a reliable and affordable implement, and finally whether farmers’ organisational arrangements at community level will ensure the use of this implement on a large-scale.

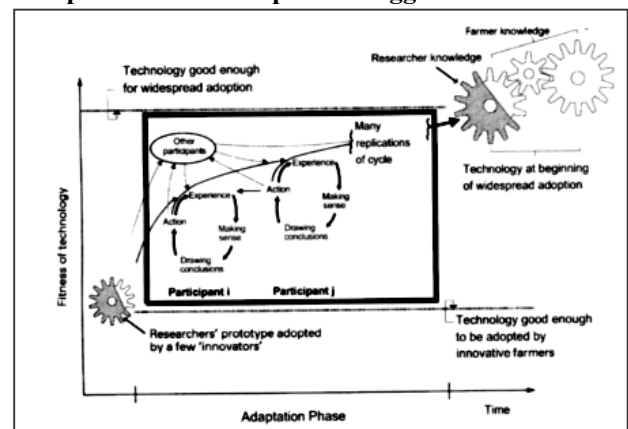


Figure 4: Learning and interaction amongst actors in an innovation development processes (from Douthwaite, 2002)

technology and on the fact that successful innovation emerges out of the adaptations that occur as different people learn and select improvements. Our experiences (see box) confirm the findings of Douthwaite (2002). This non-linear, dynamic view of innovation process (see figure 4) sharply contrasts with the linear pathway of the ToT model of technological change and innovation dissemination. On the other hand, the lack of a clear causal chain of activities in the multi-actor adaptive model makes it difficult to assess the potential “adoptability” of an innovation and the impact of

research activities. It makes it also difficult to predict which components of an introduced conservation farming technology will be the “adoption incentive” for farmers’ as shown in the South African example.

The third lesson is that both the **impact of researchers and other key stakeholders and of the experimentation process at farmer level depend on the quality of farmer linkages amongst themselves and on their interactions with the local organisational and service system.** The experiences from Zimbabwe highlighted the necessity of moving activities from the individual farmer level to community level to achieve impact of research on soil and water conservation technologies. Also in South Africa research and extension failed to achieve any sizable spread of innovation as long as on-farm experimental activities focused on individual well-off farmers or on members of agricultural “projects” developed by government. On the other hand, several soil and water conservation innovations have been already developed by innovative farmers locally. Yet, these local innovators are rarely considered by extension and often emarginated or accused of witchcraft by community members themselves. The failure of extension in disseminating technologies by focussing on small interest group of farmers on one hand, and the non-conducive social environment towards local innovators, led to the need of linking a process of on-farm trials on conservation technologies with a broader social innovation process. This process is aimed at overcoming social norms and behaviours that prevent individuals from innovating and emerging from the majority (the unfortunate flip side of co-operative behaviours, so common in all rural societies). Finally, the spread of technological innovation does not depend only on social issues such as supportive leadership and co-operation within different community groups but also on access to market opportunities and permanent linkages with input suppliers and other key stakeholders. This is what we call in brief a process of local organisational development.

ENHANCING THE DISSEMINATION OF INNOVATIONS AND THE LOCAL SERVICE PROVISION SYSTEM THROUGH A PROCESS OF LOCAL ORGANISATIONAL DEVELOPMENT

The importance of local organisations and institutions as contributing factor to sustainable development is getting more and more attention in the development policy debate. The role of local organisations is central for ensuring participation in the local decision making processes, aggregation of the demands from the majority of rural men and women and for a co-ordinated delivery of services responding to their needs. According to Uphoff, 1992, local organisations and institutions such as local government, resource user associations and traditional leadership authorities are also important because:

- Consultation processes amongst members of different organisations, between their representatives and leadership and political structures at local level not only create the necessary social space for people to innovate, but also opportunities for collective action to mobilise and manage local human and natural resources
- Instituting practices that are environmentally sound, such as soil and water conservation, require more than individual incentives and persuasion (or even coercion!). People’s behaviours are conditioned by social consensus normally achieved by negotiating conflicting interests represented by different social groups. Behaviours are also conditioned by social norms and by-laws of which, for instance, strong local institutions such as traditional local councils have been the custodians
- Finally, local organisations that are regarded as legitimate and representative of the interests of the majority encourage people to take a longer-term vision for their self- determined future. Legitimacy, shared vision and values, accountability of leaders towards their followers in local organisations/institution generate the necessary social energy for co-operation and achieve common expectations beyond individual and opportunistic interests.

Yet, on the basis of our experiences, seldom legitimate and representative organisations capable of carrying out the above-mentioned functions are found at local level. The imposition of foreign colonial structures over traditional leadership systems, distorted economic policies which have lead to the

”proletarianisation of rural communities”, government welfare programmes, just to mention some factors, have alienated and eroded the social fabric of what traditionally were self-organised and reliant rural communities. As a result of these complex political and socio-economic changes, rural communities are often found in a state of poor relations to each other. There is weak communication and co-operation amongst local groups and poor accountability and transparency of traditional leaders and of the elected representatives of modern local government structures. Traditional and modern leadership structures co-operate poorly at local level and often are found in conflict with each other.

This poor organizational status at local level, the lack of solidarity and interactions amongst local groups and, between them and their representatives is a critical factor undermining community participation, effective decision-making, problem-solving and consensus building. The need to overcome these stumbling blocks to local governance, to innovation and self-organisation has led to the exploration about methods and processes for strengthening local organisations and institutions.

Defining local organisations and institutions

At the core of organisational change processes there are changes of people’s attitudes and behaviours. This implies that people have to develop new skills; new roles and responsibilities have to be established amongst different levels of an organisation. New systems and procedures have to be put in place. Finally new organisational culture and values have to be re-negotiated. The first question to be answered is therefore with whom to start this change process. Secondly, where, at local level, decision-making processes can be influenced in such a way that opportunities for collective action for self- sustained development can be created.

Our experience confirms the views of Uphoff (1992) on the most appropriate level of intervention that can be defined as “local”. These levels are as follows:

1. Locality: as the higher local level, it is meant as a set of communities or traditional villages that share common resources or social ties. This can also correspond to a traditional chiefdom area or to modern wards of the local municipal system. This level is very important to ensure representation of the other two lower levels.
2. Village/community: This is the focal social unit for intervention. It has normally clear boundaries as a relatively self- contained socio-economic and residential unit. The size of villages varies considerably in different areas. Some villages comprehend several sub-villages represented by traditional headmen. In this case activities should be started at sub-village level or by what people define as the smallest social operative entity beyond the household level.
3. Groups: This is the lower local organisational level, but also the most important. Groups are self-help, self-identified collection of individuals sharing a common resource such as farming land or water or common interests such as saving and income generating activities. Groups can also be based on kinship and neighbourhood, but are generally as cohesive as the previous ones.

The facilitation of interaction at these levels, where people have an interpersonal contact and social relations is considered the most effective to influence people’s behaviours. It is at the level of group or village operative entities that the people feel they can influence directly leadership decisions or decisions by other groups. Rules and by-laws are most likely to be respected. Encouragement, mutual support and co-operative behaviours can be felt more strongly. These aspects are very important to generate the necessary energy to initiate and sustain a process of change that requires collective action, especially in the area of resource management and social innovations.

Institutions and organisations can be found in all these three levels. Always according to Uphoff (1992), institutions are defined as complexes of norms and behaviours that persist over time by serving some collectively valued purpose. Institutions can be organisations such as local government or traditional local councils or non-organisations such as the communal land tenure system. By local organisations are meant all formal and informal structures of recognised or and accepted roles. They are commonly found as producer associations, farmer groups, church organisations, burial societies women groups etc. and very often development projects.

Guiding principles and values of a local organisational development process

The process of local organizational development should not be understood as a one-off training in group dynamics for local groups and in leadership skills for leaders. Neither has it to be confused with the use of Participatory Rural Appraisal (PRA) tools like Venn diagrams for the identification of local organizations and their roles. It is also not the establishment of formal organizations from outside, such as co-operatives or the establishment of producers' associations. It is a much more demanding facilitation process lasting more than two years, through which extension staff and community facilitators have to build a trustful relationship with community, the strengthening of local organisational structures on

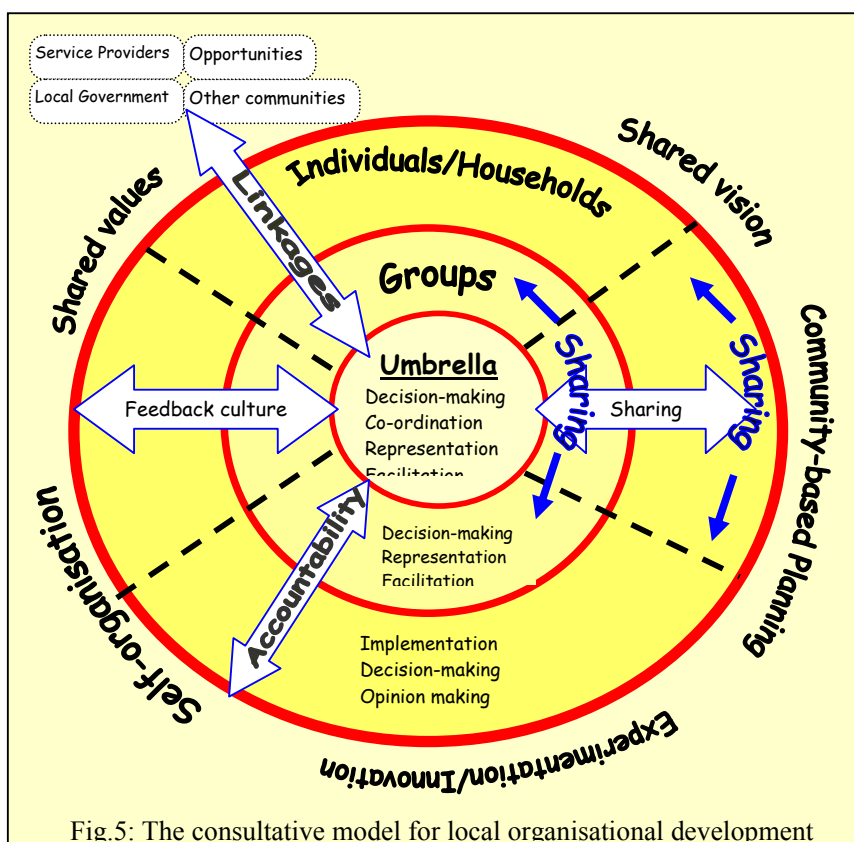


Fig.5: The consultative model for local organisational development

the basis of a re-negotiated local value system. The discussion on values is central at the initial stages of the intervention. New values are necessary to redefine the role of government staff as facilitators and for establishing a different kind of partnership between outsiders and local communities from what they have been used to experience.

Values are discussed and negotiated during several meetings, first with traditional and political leaders, then with all local groups and in the course of public hearings at community level. The most important values, often object of intensive debate at community level, are as follows:

Self-reliance. In our experiences, one of the biggest challenges faced by community development facilitators at the initial stages of the interaction with rural communities is the huge dependency of poor rural people from external support. This paralyses action in the absence of financial incentives. The process emphasises the importance of tackling problems with the existing human and natural resources and of giving people a sense of ownership and independence to shift their beggar mentality. It also builds on farming as a core value that has maintained life since ever and, as the simplest mean to achieve prosperity for most rural dwellers.

Inclusivity & equal opportunities: Most of the external support intervention from outside benefits mostly local elites, the most educated and influential capable of seizing opportunities offered from outside. The lack of involvement of the less well-off groups in the community in accessing opportunities from outside is a major cause of local conflicts and prevents the most needy from accessing services and innovations. Making local organisations more inclusive and more pro-poor can reverse this trend.

Unity and co-operation: Often one of the biggest problems hindering innovation and the starting of collective action at community level is the lack of co-operation between the different groups. By acting in isolation, small groups of individuals lack the critical mass for taking advantage of the economy of scale, and for mobilising sufficient resources to buy the most needed services. Mottos like

“alone we fall, united we stand” or the using codes for discussion such as the difficulty of breaking a bunch of wooden sticks, re-emphasise this traditional value of rural societies.

On the basis of this community debate on values, a strategy with local actors is identified to re-establish synergies within the community. This involves the “webbing in” of all the existing local organisations and institutions to reconnect all the internal parts of the system. The re-established communication amongst internal actors allows for the development of a common vision for change and the identification of areas for immediate intervention and external support. It also makes the creation of community linkages with the outside service system possible. This strategy is based on a consultative process between individuals, agricultural and non-agricultural groups and their elected representatives with the aim of identifying the area of general concern where individual groups can start experimenting on. It finally, facilitates the formation of inclusive and self-governing bodies (umbrellas) to foster representativity of all existing community groups and nurture the formation of new active ones. This self-organisational process has to be fuelled by continuous access to innovation and experimentation activities. This multi-faceted process is visually summarised in picture 5.

Another important step of the local organisational development process aimed at re-establishing communication and accountability mechanisms in the local organisational set-up is the strengthening and development of existing leadership structures. This is achieved by reviewing the quality of a leader on the basis of agreed criteria and leadership functions and not, as it often occurs, only on the basis of status, education, wealth and gender considerations. It involves also the active participation of traditional leadership structures and of the local political representatives. This process makes philosophical and methodological reference to the principles of “Training for Transformation”(Hope & Timmel, 1984) to critically analyse local power relationships and strengthen people’s awareness.

Finally there are some key principles guiding the facilitation of a local organisational development process (LOD). They are as follows:

- LOD facilitation aims at building on existing local organisations and traditional and modern leadership structures. It aims at harmonising their relationships, roles and responsibilities
- The decision on the kind of organisational structure to be adopted lies with community actors and cannot be imposed or pre-programmed from outside (the self-organisational principle)
- Any organisational structure should emerge from the local need of having clear tasks and functions to be executed (form follows function)
- Incentives for organisational change and improvement are generated through access and exposure to sources of innovations and access to new opportunities (market, services information etc.) and relevant programmes that can lead to concrete economic impacts and livelihood improvements (there cannot be organisation without innovation but also no innovation without organisations)
- Dissemination of innovative local organisational arrangements to neighbouring communities within localities should be self-propelling and according to self-organisation, i.e. the development of new organisational arrangements cannot be imposed or planned in advance
- The spread of a process of community self-organisation within localities can be facilitated by instituting public events, whereby progressive leaders and active local groups are exposed to the successes achieved in “role model” communities.

An emerging conceptual and operational framework for facilitating Local Organisational Development

The lessons and success factors identified by analysing the experiences developed in Zimbabwe and South Africa in strengthening local self-organisational capacity and participation at community and locality level have been summarised in the form of strategic framework for orienting and monitoring the facilitation of this process in practice (see figure 6). It highlights what in our experience should be in place to ensure an effective process of local organisational development. This framework should be considered a learning tool rather than a final product ready for dissemination. It would like to invite more learning and promote exchange of other experiences in developing strategies for local organisational change.

The different cornerstones, which are part of the conceptual framework for the development of local self-organisational capacity have been translated in an operational framework. This second framework describes a number of key process steps in a sequential manner to help extension staff and local facilitators to manage the process at community level. The key steps and the main activities carried out in steps are described below:

Interactive Situation Analysis of the Local Organisational & Institutional Set up

- Local leadership awareness on process and values
- Actor-network analysis of formal and informal organisations and institutions at community level
- Institutional profile of each organisation and SWOT analysis through interviews of members and non-members of the different local organisations
- Institutional analysis at locality/municipality level
- Identification of local innovators
- Feedback to leadership and community at large on findings to create awareness on existing power conflicts, unbalances and energy for change
- Reflection on past pattern of communication between different groups, leaders and outsiders agreement on future pattern of communications between community and outsiders

Facilitation of a Platform for Co-operation and Community Self-organisation

- Developing an initial vision for development based on self-reliance
- Re-defining role of outsiders and principles for future co-operation (nobody knows everything and nobody knows nothing)
- Discussing importance of feedback (Johari's windows)
- Discussion of the importance of building on strengths of all actors (a community as football team- 11 players are needed to score a goal)
- Identifying key issues and challenges for the community and fostering local ownership of local problems
- Mobilisation of local resources to organise an exposure visits to progressive communities to create internal pressure for change and self-re-organisation
- Identification of possible options/ideas to be tried out

Planning a Strategy for Local Organisational Transformation

- Elaboration of a vision for self-organization and good governance with individual groups and leadership structures
- Re-assessment of leadership and performance of different local organizations and elaboration of possible ways to improve governance and representation of groups at community level
- Identification of performance criteria for local organisational development
- Planning of concrete steps to improve governance in groups and their representation at community and locality level.

Community-Based Action Plans and Implementation through new Linkages & Experiential Learning

- Identification of priority areas for actions and planning for each local group
- Interactive analysis of sources of service provision at locality, district or provincial level and selection
- Development of strategies for service support with individual service providers
- Mandating "experimenters" in each group
- Mid-term community- based monitoring of social and technical innovations in the form of public events, interest group days, field schools etc.
- Awarding prizes to best ideas and best experimenters
- Networking with other community at locality level.

Community-based Evaluation and Re-planning by Reflecting on Successes and Failures

- Review of local organisational capacities and innovations
- Review of technological innovations with experimenters and individual groups
- Identification of "best technological bets" to be disseminated or that require further experimentation
- Community-based process review workshop and re-planning workshop

CONCLUSIONS & FUTURE CHALLENGES

In Zimbabwe, more than 20 innovations in the field of land husbandry and conservation farming in general (physical, biological and agronomic measures) were developed by researchers and extension staff together with farmers. The high level of involvement of community members within strengthened local farmer organizations and the additional encouragement to experiment more creatively and share experiences and local knowledge have revealed to be crucial factors for the dissemination of conservation technologies.

The impact of the process in terms of improved dissemination of conservation agriculture was assessed in South Africa under three impact areas:

- a) Technology development and innovation dissemination
- b) Availability of technologies
- c) Appropriateness and effectiveness of technologies.

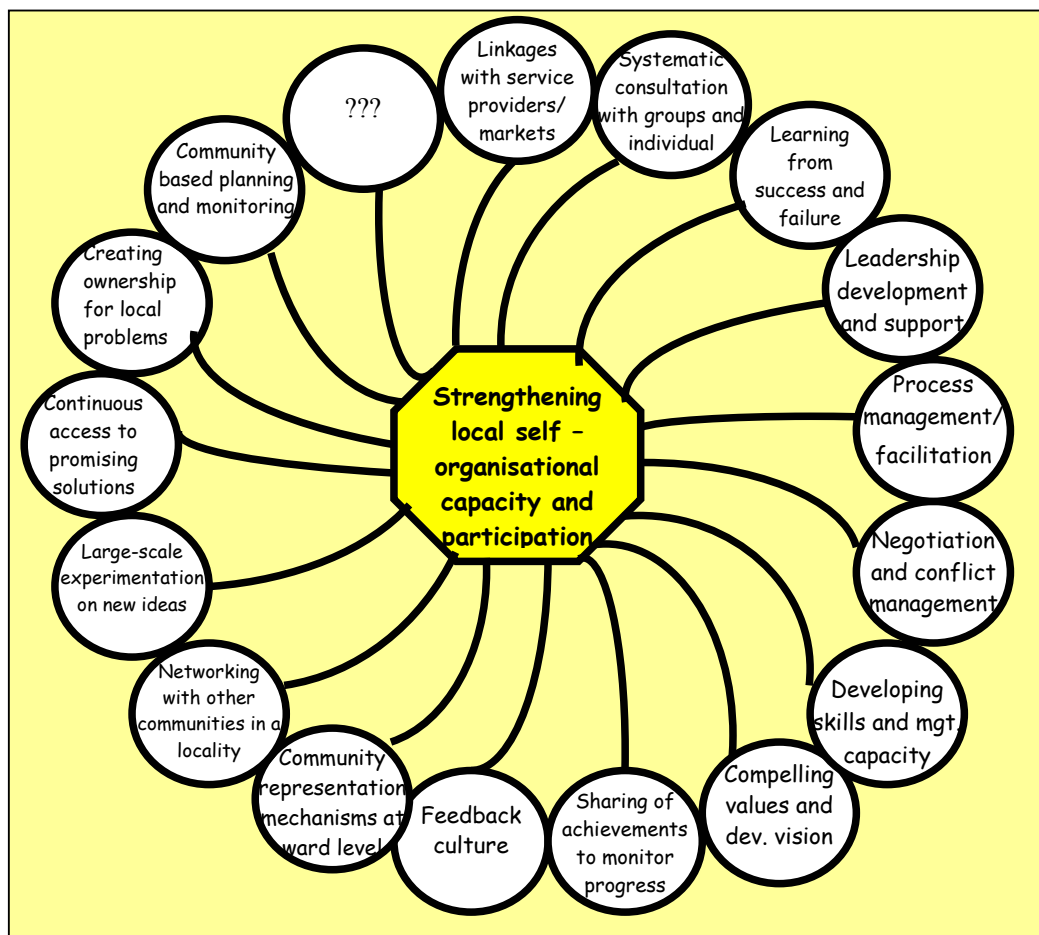


Figure 6: Cornerstones (success factors) of a local organisational development process

In terms of the approach, farmers linked up with a wide range of service providers and as a result a wide range of stakeholders participated in the development of the technologies. The numbers of farmers participating increased significantly and they played a central role in the innovation process. In terms of availability of technologies, a wide range of technologies is now available in the studied communities. Farmers initiated some of the technologies while others originated from research. More than ten conservation agriculture-related technologies were developed and tested, such as use of mulch, tied ridges, stone bunds on steep slopes, *vetiver* grass strips, sand bags for rill reclamation. Most of the technologies were considered appropriate as they matched local farmers' resources and

addressed their identified problems. The acquisition by extension staff of concepts related to sustainable rural livelihoods systems and exposure to the value system of African rural communities has revealed also to be a key to make technically trained extension officers more receptive towards practices of low-input sustainable agriculture and therefore receptive to conservation farming technologies.

The analysis of both cases lead to the same general conclusion that a process of strengthening local organization is necessary for the creation of a local social environment conducive to the dissemination of innovations and technologies for conservation agriculture.

It has been shown in different independent impact assessment studies of all pilot cases in Zimbabwe and South Africa that this core lesson applies as well to other aspects of the livelihoods of rural communities. For instance, participation of households in group activities had increased up to 90% after a few years from the beginning of interventions in local organisational development. Women's participation was in general very high. Opportunities to participate were considered equal for relatively rich and poor households.

Local umbrella organisations have improved the organisation of demand for required services at community level. They have proven their effectiveness by creating useful linkages with external public and private service providers. Farmers also acquired more knowledge and through experimentation improved their capacity in resource management. Agricultural production has increased and economic benefits were also achieved, mainly thorough economy of scale due to better organisation and more inclusive access to agricultural services. These local organisations have also started to make use of their improved organisational capacities in the agricultural sector to access other services, such as electricity combating crime and to deal with the social consequences of the HIV/AIDS pandemic. Individually, the rural poor cannot advance their interests by making claims on government for more services and create alliances to pressurise outside agencies. This shows the potential of this process in establishing new local institutions for pro-poor advocacy to attain truly participatory development and to make the voices of rural communities heard into government structures.

A key challenge remains how to make researchers, extensions and the whole rural knowledge system engage in genuinely process-oriented action-learning at local level as part of a non-linear dynamic innovation system with many more actors than the usual researcher, extension and farmer trio. This paradigm directly challenges the role of research institutions still based on compartmentalised, discipline-based systems. A second challenge relates to the huge task of building local organisational facilitation competencies to a majority of technically trained agents. Facilitation at community level is very demanding and requires iterative learning processes being a discipline based mainly on know-how and experience. It is also unrealistic to think that only government or non-governmental staff as described in this paper could facilitate this complex innovation and local organisational process on a continuous basis. The very same local institutions built at community level will have to take over this function to scale up this process from the community level to locality and district levels. This could be achieved by developing autonomous systems for community-based service provision for both technical innovations and local organisational development processes. Finally, more effective local organisations require the support of higher-level institutions capable of reacting flexibly to the needs and requirements emerging overtime from these action-learning processes at local level.

REFERENCES

Ashley C., Maxwell S, (2001), Rethinking Rural Development, Development policy review, 19 (4): 395-425

Benites J. and Friedrich T., (1998): Overcoming constraints in the adoption of conservation tillage practices. In: Benites, J, Chuma E., Fowler, R., Kienzle J., Molapong, K., Manu J,

Nyagumbo I., Steiner K. and van Veenhuizen R. (eds). Proceedings of an International Workshop Conservation Tillage for Sustainable Agriculture. held June 1998. GTZ Eschborn.

Christoplos, I, Farrington, J and Kidd,A.D., (2001):Extension, Poverty and Vulnerability- inception report of a study for the Neuchâtel Initiative, ODI working paper 144,UK

Douthwaite B., (2002): Enabling Innovation –a Practical Guide to Understanding and Fostering Technological Change, Zed books Ltd, London

Elwell, H.A., (1993): Development and adoption of conservation tillage practices in Zimbabwe. In: FAO Soils Bulletin, Vol. 69 pp129-164. Food and Agriculture Organization of the United Nations, Rome.

Hagmann, J, Chuma, E.,(2000): Tying-up Loose Ends. In: Deepening the basis of natural resource management, Proceeding of a workshop ISNAR, The Hague,

Hagmann, J., Chuma, E., Murwira, K, Connolly M, Ficarelli P, (2002), Success factors in integrated natural resource Management, R&D: lessons from practice. Conservation Ecology 5 (2): 29. [online] URL: <http://www.consecol.org/vol5/iss2/art29>

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

Hulme, D. (1991), Agricultural Extension Services as Machines: The Impact of the Training and Visit Approach. In Agricultural Extension: Worldwide Institutional Evolution and Forces for Change, eds W.M. Rivera & D.J. Gustafson. Elsevier, Amsterdam, pp. 219-30.

Nyagumbo I. (1998): Experiences with conservation tillage practices in Southern and Eastern Africa. In: Benites, J, Chuma E., Fowler, R., Kienzle J., Molapong, K., Manu J, Nyagumbo I., Steiner K. and van Veenhuizen R. (eds). Proceedings of an International Workshop, Conservation Tillage for Sustainable Agriculture held June 1998. GTZ Eschborn.

Oldrieve, B., (1993): “Conservation Farming for communal, small scale, resettlement and co-operative farmers of Zimbabwe: A farm management Handbook,” Prestige Business Services (Pvt) Ltd.

Pfaffenberger, B. (1992): Social anthropology of technology. *Annual Review of Anthropology*, 21, 491-516.

Röling, N.G. and Jong de F., (1998): Learning: shifting paradigms in education and extension studies, Journal of Agric. Education and Extension (5) 3

Röling, N.G.,(1994): Innovation and the Agricultural Knowledge System. In: “discoveries on the Farmers’Track”, Peter Linde Productions, Wageningen.

Russel, (1996): The value of crop residue as ground cover. In “farmers weekly”. July.

Uphoff, N, (1992), Local Institutions and Participation for Sustainable Development, Gatekeepers series No. 31 IIED publications, UK

Whiteside,M.,(1998), Living Farms, encouraging sustainable smallholders in Southern Africa, Earths Publications, London [on line] www.earthscan.co.uk