

Tracking outcomes of participatory policy learning and action research: Methodological issues and empirical evidence from participatory bylaw reforms in Uganda

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ABSTRACT

In this paper we use empirical evidence from a tracking study to investigate the outcomes and potential impacts of a five-year participatory learning and action research (PLAR) project that aimed at strengthening the capacity of local communities to formulate and implement by-laws for sustainable natural resource management (NRM). Results based on participatory self reflective practices, revealed changes in seven key outcome areas: awareness and compliance with the by-laws, participation in mutually beneficial collective action, changes in gender dynamics, connectedness and networking, adoption of NRM technologies, sustainability and potential uptake of by-laws. The paper highlights some downside of community by-laws and the challenges in dealing with social exclusion and inequity. Scaling-up participatory processes, particularly influencing national-level policies, remains an important challenge for research, development and policy.

Key words: participatory action research, by-laws, gender, outcomes, NRM, participatory monitoring and evaluation, social capital, Uganda,

1. Introduction

Drawing from the body of work and experience that show the importance of participatory processes and institutional innovations in natural resources management (NRM), we facilitated a five-year (2000-2004) participatory learning and action research (PLAR) project that aimed at strengthening social capital for improved policies and decision-making in NRM (Sanginga et al. 2005a). The PLAR project was premised on the grounds that social capital is an important asset which people draw on in pursuit of their livelihood objectives, and particularly for improving management of their natural resources, accelerating adoption of NRM technologies, improving policy formulation and implementation in rural communities (Rudd2000, Grootaert and Narayan 2004, Collier 1998, Bridger and Luloff 2001, Ostrom 2000a,b; Pretty 2003a,b).

However, some authors have exaggerated claims of universal efficacy of social capital. Pretty (2003b) cautions that the fact that social capital has been strengthened, and new by-laws formulated does not guarantee more equitable and sustainable outcomes for NRM and other livelihood assets. Ostrom (2000b) further notes that unlike physical and natural capital which are usually tangible and obvious to external observers, social innovations are not as easy to find, see, and measure. This requires systematic tracking studies and process documentation research to find answers to questions such as: What happens after PLAR and project intervention? Does the participatory formulation and implementation of translate into better management of natural resources? Who benefits and who loses, and in what ways? What are the conditions for sustainability of such intensive processes?

Until recently, monitoring and evaluation (M&E) practices in agricultural research and development still use standard, orthodox or blue print M&E systems (Oakley and Clayton, 2000) in which indicators, activities, outputs and impacts as well as data to collect are often pre-determined by the project logical frameworks and other project documents developed by experts and scientists or project managers. In their review of farmer participatory research, Okali et al. (1994) observed that there is a dearth of M & E system which looks beyond the technical indicators of agricultural experiments (such as yields, maturity time, resistance to pests and diseases), and other socio-economic indicators (such as

adoption rates, income, cost-benefits). They contend that even for most projects that claim to be participatory, most of the emphasis in monitoring and evaluation is still on trial results and technical outputs, with relatively little on the process of participation, their outcomes and impacts.

There is a dearth of M&E practice on process outcomes of participatory learning and action research projects. With the increasing emphasis on the strategic importance of stakeholders' participation in research and development (Ashby 2003, Cook and Kothari 2001), there is also a growing recognition that monitoring and evaluation should be participatory (Guijt and Gaventa 1998, Estrella et al. 2000). Participatory monitoring and evaluation (PM&E) approaches are useful to guide an internal learning process that enables people to reflect on past experience, examine present realities, revisit objectives and define future strategies. PM&E is a practice for building learning and reflectivity into development projects (Earl et al. 2001).

Reflexivity refers to research where stakeholders recognize and explicitly analyze their own actions and experiences in the processes and outcomes of a project (Brock and Harrison 2006). Freeman, (2007); Cunliffe and Jung (2005), Cunliffe (2004) and Koch and Harrington (1998) suggest that reflexive practice, in particular self-and critical reflexivity, is crucial because it can lead to more critical, responsible, and ethical actions, as projects in which people reflect directly and explicitly on their own role in the project are likely to be more successful (Brock and Harrison 2006). Reflective learning practices draw significantly from both Utilization Focused Evaluation (Paton 1997) and Empowerment Evaluation (Fetterman and Wandersman, 2005). Empowerment evaluation is an evaluation approach that aims to increase the probability of programme success by providing stakeholders with tools for assessing the planning, implementation, and self evaluation of their programmes, and mainstreaming evaluation as part of the planning and management of the programme organization (Fetterman and Wandersman, 2005). The utilization-focused evaluation is used not only to improve project and programme effectiveness and performance, but also and perhaps most importantly to build a learning organisation.

This tracking study was undertaken one year after the end of the PLAR project to investigate and document the specific outcomes, potential impacts and conditions for sustainability of strengthened social capital for improving policies and decision-making in NRM. The rest of this paper begins with a description of the context and methodology used for tracking outcomes of the NRM by-laws. The findings are discussed in seven sections. First we present the process outcome indicators developed by the rural communities and research team. We then discuss the results based on the seven outcome areas: compliance and performance of community by-laws, participation in mutually beneficial collective action, changes in gender dynamics, connectedness and networking, adoption of NRM technologies and conflict management, the conditions for sustainability and potential uptake, and the downside of social capital. The paper concludes with a summary of the main findings and their implications for further research on social capital.

2. The research context and methodology

The participatory learning and action research project was conducted in Kabale district in the southwestern highlands of Uganda. The five-year (2000-2004) participatory learning and action research project developed and tested appropriate mechanisms and approaches for strengthening social capital and facilitating participatory processes for by-law formulation and implementation (Sanginga et al. 2005a). This involved the formation and facilitation of village-level by-laws committees, referred to as "Policy Task Forces" (PTFs). These PTFs created a platform for dialogue between communities, local government councils, and R&D organizations on the analysis of NRM issues. The PTFs facilitated the review, formulation, and implementation of by-laws. The formation of these committees followed a more inclusive and participatory process for electing members and defining their roles and responsibilities, as well as mechanisms for consultation and accountability. A typical PTF comprised 9-11 farmers, including two to three members of the village local council executive (Local Council 1). With regard to gender representation, 41% of the policy task force committee members were women. The PTFs championed the review, formulation and implementation of a set of community by-laws for controlling soil erosion; planting trees, controlling animal grazing, managing wetlands, and regulating alcohol drinking. Each of these by-laws has specific regulations and enforcement mechanisms (For details, see Sanginga et al., 2008 in this volume).

The tracking study took five months (May-October 2005), one year after the completion of the PLAR phase. It combined iterative participatory approaches and tools with more conventional household and community survey methods. We conducted eight focus group discussions (FGDs) with members of the PTFs and four FGD sessions with male and female farmers in the pilot villages. These FGDs were facilitated using the After Action Review (AAR). AAR is a participatory technique that helps structure collective reflection, analysis and learning by talking, thinking, sharing and capturing the lessons learned about a completed activity before they are forgotten (CIDA, 2003). AAR was facilitated using the following six questions:

- (i) What was supposed to happen? Why?
- (ii) What actually happened? Why?
- (iii) What is the difference? Why?
- (iv) What went well? Why?
- (v) What could have gone better? Why? and
- (vi) What lessons can we learn?

These six basic AAR questions are essential for evaluating participatory and social learning processes. However, AAR tend focus more positive feedback, and as a consequence, problems are often overlooked. It was therefore important to complement AAR with other reflexive practices to unravel some of the negative consequences of the PLAR. This involved discussions on how the bylaws affect peoples livelihood options; the categories of people that are likely to benefit, or lose out because of the by-laws; what categories of the community will have difficulty in complying, the reasons why and what arrangements can be introduced for those who fail to comply or have difficulty in complying, and how to encourage community participation in implementation and monitoring of the by-laws. Feedback sessions were organized to validate findings, and to identify strategies for dealing with challenges and obstacles to successful implementation, sustainability and uptake of the by-laws, community action plans and policy task forces. To complement AAR and to obtain quantitative and individual insights, a semi-structured interview checklist was developed and used with a sub-sample of 46 households from the initial baseline surveys conducted at the beginning of the action research project. In addition, key informant interviews were also conducted with 29 local leaders including members of the executive committee of the decentralized local government structures (local councils at the village, parish, sub-county and district levels, and other group leaders in the community.

3. RESULTS and DISCUSSION

3.1. Outcome indicators of participatory bylaw reform

An important first step was to identify a set of community indicators for tracking outcomes of the by-law PLAR project. The community indicators consisted of a number of indicators that were grouped in three broad outcome areas: participation, performance and sustainability (Table 1). Indicators of participation include continuous attendance to meetings by men and women, number of farmers implementing bylaws, and extent of women participation in decision-making and bylaw implementation. Performance indicators relate to level of awareness and compliance with the bylaws, perception of effectiveness of PTFs, extent of collective action, number of NRM technologies adopted, and willingness to adopt NRM technologies, extent of conflict management. Indicators of sustainability relates to the probability of continuing with PTFs and bylaws over time and included the extent to which PTFs continued to function after the end of the project, their ability to link with local government and external agencies, their ability to mobilize resources and initiate new activities as well as willingness to invest in NRM. In this paper we discuss seven broad indicators: awareness and compliance with community by-laws, participation in mutually beneficial collective action, connectedness and networking, adoption of NRM technologies and conflict management, changes in gender dynamics, inclusion and equity, and performance and sustainability of village by-laws committees.

[Table 1 near here]

3.2. Awareness and compliance with by-laws

The first performance area was to assess the extent to which farmers are aware of community by-laws, and the extent to which people comply or not, with the formulated by-laws. Results show that there was a widespread awareness of the different by-laws. The majority of men and women in the PLAR communities had not only more detailed knowledge of community by-laws and their specific regulations, but the perception of their effectiveness has improved dramatically.

[Table 2 near here]

Results in Table 2 show that there has been significant improvement in the extent of compliance to community byelaws over time in the four pilot communities. In the same vein, participation in community activities and cooperation amongst people (reciprocity and exchange) tend to increase over time. This cooperation is more of the diffuse nature (Pretty, 2003a) and refers to a continuing relation of exchange that at any given time may not be met, but contributes to the development of long term obligations between people, which is an important part for achieving positive environmental outcome. The PTF has helped in facilitating the flow of information not only on by-laws but also on technologies and other NRM aspects. This role of the PTF as a knowledge-builder has effects on increased knowledge, skills, access to information and technologies for improving NRM. Several factors account for these notable improvements including strong leadership of the village PTF in communities and groups, a lot of sensitization on byelaws, regular monitoring and feed back, and consistent support to byelaw implementation by NGOs and the subcounty, as well as high levels of social capital. However, in communities where there was limited improvement in the compliance of byelaws, the main reason was low social capital as expressed by lack of cooperation among community members, with the majority of men spending a lot of time in bars and not attending meetings, and low financial contribution to solve collective problems. This was specific to Habugarama which has also been marred with leadership conflicts.

It is important to note that improvement in some dimensions seem to occur at the expense of altruism or spirit of helping others, which is decreasing. This decline reflects some downside of social capital which will be discussed in a later section.

3.3. *Participation in mutually beneficial collective action (MBCA)*

Uphoff and Mijayaratra (2000) stress that mutually beneficial collective action (MBCA) is the most specific outcome of social and institutional innovations. The number of MBCA events and the level of participation in MBCA were therefore used as key indicators and outcomes of community by-laws. Results show that one year after project completion, the four pilot communities organised up to 25 MBCA events that directly relate to the implementation of the community by-laws (Table 3). These include tree planting, making trenches and managing community nurseries as well as attending community meetings on by-laws. The level of participation in MBCA events has been consistently high and increasing over time.

[Table 3 near here]

The most common forms of collective action were making trenches for soil erosion control, tree planting, and managing community agroforestry nurseries. Participation in tree nursery management operations was one of the areas where collective action was ranked high (45.7%) and improved considerably. The level of participation of men was significantly higher in collective action events for making trenches, mainly because of its higher physical labour demand. While participation has not been very consistent over the whole period, there have been periods of high and low participation of both men and women (Figure 1). For example, the majority of farmers participated in tree nursery establishment, but the numbers reduced over time for nursery watering, then increased at the transplanting stage where tree seedlings were distributed to individual farmers.

3.4. *Gendered outcomes of by-laws*

Feminist studies have pointed out to the silence of participatory processes on gender, and have criticized social capital studies for being gender blind (Molyneux 2001, Mayoux 2001). Cornwall (2003) observed that community-driven development, participatory planning, and other fine-sounding initiatives that make claims of participation can turn out to be driven by particular gendered interests, leaving the least powerful without voice or much in the way of choice. Similarly, Akerkar (2001)

concluded that many participatory projects lack an awareness of gender and gender differences. *“Gender was often hidden in participatory research in seemingly inclusive terms: the people, the community, the farmers...”* Yet, it is argued that in Africa, women are central to the forms of social capital that development organizations and governments are keen to mobilize in community development programmes.

[Figure 1 near here]

Results (Figure 1) of this study confirmed that women’s participation has been sustained over time. The analysis based on linear trend line of women’s participation shows a steady increase in the number of women ($R^2 = 0.83$) from below 20 to more than 60 women attending the different community meetings. The relatively high participation of women is consistent with earlier analysis of the patterns and dynamics of participation in farmers’ organisations in Africa (Sanginga et al. 2006). However, it is interesting to note that contrary to earlier findings on group dynamics which show decreasing participation of men in group activities, the findings of this study show that men’s participation was sustained over time. Participation in community meetings on by-law implementation has been relatively regular, with an average of 53 men and 48 women, reaching a maximum of 150 farmers in some villages. Both women’s and men’s perceptions of women’s ability to participate in community activities have also improved.

The PLAR has increased women’s confidence and changed perceptions of their status within the communities. Most male and female farmers interviewed (95.6%) indicated that women’s participation in decision-making and community leadership positions had improved over the last three years. On average, women represented between 34-50% of the membership in village by-law committees and policy task forces. Individual interviews and focus group discussions revealed that men’s respect and consideration of women had considerably improved (94.1% and 85.7% of men and women respectively). Both men (85.7%) and women (88.2%) shared the opinion that the project has significantly enhanced women’s confidence to speak in public and self-esteem.

3.5. Bridging and linking social capital

A fourth outcome area analyzed the extent to which the PLAR process strengthened both bridging and linking social capital. Baseline studies conducted at the start of the project showed that the four pilot communities were endowed with high level of structural social capital expressed by the density of local organisations and the diversity of memberships in these organisations (Martin et al. 2001; Sanginga et al. 2005a). However, they had weak bridging and linking social capital. Bridging social capital refers to the structural relationships and networks which cross social groupings, involving coordination or collaboration and information sharing with other groups within and across communities (Narayan and Pritchett 1999). Simply put, it is the network of horizontal linkages within and outside the communities. On the other hand, linking social capital describes the ability of groups to engage with external agencies, either to draw on useful resources or to influence policies, and linking poor people and those in positions of influence. (Pretty 2003a)

Results show that there has also been considerable improvement in the horizontal linkages between the PTFs and farmers groups across the four pilot communities and other villages. There is increasing coordination or collaboration with these groups for sensitization, organizing collective action, organizing exchange visits across communities and groups, and in some cases mediating conflicts between groups. A number of farmers’ groups and other development organisations visited the pilot communities to learn about the participatory process of formulating and implementing community by-laws, and NRM practices. There has been genuine interest and willingness of the sub-county to upscale the process beyond the pilot communities to the whole sub-county. Other villages have expressed interest in forming village PTFs for bylaws formulation and implementation. In two of the four communities, the PTFs were embedded in decentralized local government structures at the village level, with the majority of its members doubling also as local councillors and members of the executive committees of agricultural related groups. In this case, the PTFs played complementary roles to local leadership and existing groups within the communities. This gave considerable power and authority to impose sanctions on those farmers who did not comply with the by-laws. In the other two communities, the PTF were seen as parallel structures to the local council, and were not sufficiently integrated into existing farmers groups. This undermined their effective functioning and their ability to enforce bylaws, arbitrate and mediate conflicts. It also affected participation in collective

action and community meetings. There has also been improvement in the linkages between the village PTFs, the decentralized local government political structure (local councils) and other external agencies. One of the four pilot communities was awarded a district tender for providing facilitation services on institutional development to other groups in a different sub-county.

3.6. Natural capital outcomes of by-laws

The PLAR project was based on the premise that strengthening community capacity to formulate and implement by-laws is an important pre-condition for adoption of NRM innovations. In this study, we considered two aspects of NRM: adoption of agroforestry and soil conservation technologies and conflict management mechanisms. Results show that the number of NRM technologies practiced by farmers, and their willingness to purchase and plant more trees has increased significantly. The study found that about 43.3% of households have established new terraces over the recent past, 36% have made further trenches and 28% have used agroforestry technologies to stabilise these trenches (table 4). There is a clear willingness to use and purchase agroforestry technologies.

[Table 4 near here]

Results in figure 2 show significant differences in adoption behaviour between communities, as well as significant gender differences within and among communities. For example, Muguli and Karambo communities have the highest number of new trenches, 200 and 169 respectively. On the average, male farmers in Muguli B established about 12 trenches compared to about three only for female farmers. The high involvement of men in this village has been attributed to the embeddedness of the PTF within local village structures that were effective in mobilizing men for MBCA.

[Figure 2 near here]

Analysis of the factors determining the adoption of agroforestry and other NRM practices showed that the probability of adopting agroforestry technologies and constructing new terraces for soil erosion control significantly increased for farmers and villages who complied and implemented the tree planting and soil and water conservation by-laws (Sanginga et al. 2007a). This result is consistent with other findings that showed that community by-laws played an important role in the scaling up of agroforestry technologies in eastern Zambia (Ajayi and Kwesiga 2003). Reinforcement of by-laws gives individuals confidence to invest in collective activities knowing that others will do so, thus creating a level of trust that lubricates cooperation and social obligation (Ruud 2000; Pretty 2003 a and b).

Results also revealed that participatory by-law formulation and implementation has increased the ability of local communities to manage conflicts, minimize their destructive effects, and transform conflict situations into opportunities for collaboration for mutually beneficial collective action (Sanginga et al. 2007b). Many cases of NRM conflicts (animal grazing, terrace destruction, boundary conflicts, tree cutting) were resolved through the implementation of community by-laws, and through arbitration and negotiation facilitated by PTF members.

3.7. Probability and conditions for sustainability of by-laws

The study assessed the extent to which the PTF s continued to function one year after project completion. There were some variations in the four pilot communities in the number of meetings conducted and in the average number of people who participated in different meetings or events organized by the PTFs. The PTF in Habugarama was the least effective with only 3 meetings conducted, compared to Muguli B that conducted seven meetings in the year that followed project intervention. The average number of participating people varied from 33 to 41, reaching over 100 farmers (almost the entire village) for some events organized by the PTF.

[Figure 3 near here]

There are several indications for sustainability of the participatory by-law formulation and implementation. The village PTFs have a strong and recognized leadership, embedded in other social structures and existing groups within the communities. They are also seen as complementary to the decentralized local government structures, rather than parallel. The four communities developed their

collective visions of desired future NRM conditions and have their community action plans. The two serve as motivating factors that lead to concrete actions and collective decision-making. It is expected that this increased ability of communities to visualize their future, develop long terms plans, learn and reorganize to achieve their vision, increases their social resilience and sustainability (Marshall et al. 2007)

One key achievement of this process has been the establishment and functioning of PTFs for managing the policy process and facilitating policy dialogues with local government structures and other key stakeholders. These village committees and local institutions have proved to be critical in building support for bylaw review and formulation, mobilising political, social, human and technical resources that are needed to sustain the participation of local communities in policy dialogue and action and for the adoption of NRM innovations. They are also supporting mutual beneficial collective action and other important dimensions of social capital such as exchange of information and knowledge, resource mobilisation, collective management of resources, cooperation and networking and community participation in research and development activities. They are increasingly becoming a vehicle through which farmers are pursuing wider concerns, initiating new activities, organising collective action among members and extending relations and linkages with external organisations. They are also increasingly taking the lead in catalysing the development process within their communities, and are increasingly making demands to R&D organisations.

3.8. The “dark side” and limits of by-laws

Although, the results above show that the outcomes of by-laws have largely been positive, the study also revealed some important downsides. We found that some categories of farmers would have difficulty in complying with some of the by-laws. These included older men and women, widows and orphans with limited family labour, or lacking money to hire labour or to buy farm implements needed to establish conservation structures. Table 5 below presents the negative changes that community members have experienced over the period of by-law implementation.

[Table 5 near here]

There have been cases of increased conflicts among livestock owners and cultivators, which in some cases have led to divisions and hatred within communities. A focus group discussion in one of the communities revealed that:

“... They are two groups/factions that have now emerged in this village as a result of controlled grazing by-law. One group – Nyang’obutungi for the rich, dislikes the system of free grazing and do not allow other farmers to graze in their plots. These farmers have their own big farms in which they graze their animals. It is this group that is pushing for strict enforcement of the controlled grazing by-law because they have plenty of grazing land. The second faction – Nkund’obutungi for the poor who have small and few plots are forced to confine their animals or be exposed to the by-law process. They don’t have land or people to keep their animals. Nyang’obutungi group passed a by-law against grazing on their plots that affected the poor who belonged to Nkund’obutungi. In turn the Nkund’obutungi group also organized themselves in a strong group for the poor who have limited land or no farms but own livestock and agreed to always graze in each other’s land. This conflict led to the failure of controlled grazing by-law and implementation was left to the rich while the poor decided that the poor should continue to graze on the poor person’s land. We don’t even have a mechanism for deciding on this as a community. That is why I liked the other group in Karambo ...”

The negative outcomes may prevent the realisation of the impacts and the scaling up process of social and institutional innovations in the long run. These results lend credence to observations that policies to promote NRM often fail or worsen the problems they are intended to solve, generating unintended side effects, policy resistance and implementation failures (Sterman 2006). Policy resistance arises because we do not often understand the full range of feedback created by induced innovations. This in turn undermines the effectiveness of such innovations to achieve more equitable livelihood impacts.

It was also found that reinforcement of the by-laws did not always ensure fairness, especially to women and other farmers endowed with fewer human, financial, social and political capital. Many of

the MBCA events often have a high social cost for local communities, especially to women and other vulnerable groups, who end up taking the burden of paying fines and other forms of social exclusion and coercion.

Table 2 showed that enforcement of community by-laws seemed to occur at the expense of altruism or the spirit of helping others. This decline reflects some of the negative aspects of participatory processes, which exclude some categories of people, particularly those endowed with less social and economic power. For example, older people expressed some distrust of the youth who dominate village committees and farmers' organisations and linkages with external organisations. There were also perceptions of jealousy, resentment and allegations of witchcraft toward the elderly people. Some farmers were genuinely unable to participate due to their advanced age and ill health. These were elderly women and men who did not have labor and other resources required to participate in meetings and collective action activities. It was also revealed that owners of small livestock, especially women, who have small farm sizes, had problems with the controlled grazing by-law. Strict reinforcement of the animal grazing by-law forced the poor to sell their livestock, thereby perpetuating the poverty trap.

Some authors have argued that participatory and community processes may reproduce the exclusion of the poor, who often engage in social and institutional life on adverse terms; they are less able to negotiate their rights and shape social relationships to their advantage (Cleaver, 2005:895; German and Stroud, 2007). They can be termed "powerless spectators". They lack skills, resources, institutions and networks to effectively participate and adapt to policy changes in NRM (Fabricius et al. 2007). We need alternative ways for reaching such farmers, and build their capacities to exploit these new opportunities. Experience with the African Highlands Initiative suggests that, in order to optimize participation of different social groups, participation must move beyond community-level forums to socially disaggregated processes (German and Stroud 2007).

4. CONCLUSION

This study was a follow on of a participatory research project that implemented a process of building "adaptive manager communities", communities that are empowered to deal with changes, and possess institutions for social learning (Fabricius et al. 2007). This tracking study was intended to provide the evidence-base of the outcomes, potential impacts, performance and sustainability of social and institutional innovations in NRM. A major finding of this study is that the key outcome of the participatory by-law formulation and implementation is the creation of more social capital. There was significant improvement in both the cognitive, structural, bridging and linking dimensions of social capital. These include increased awareness and knowledge of by-laws; changes in behaviour and attitudes, and compliance to collective norms that place community interests above those of individuals (Coleman 1988, Fukuyama, 1999, Bowles and Gintis 2002). The different PTFs have increased the ability of farmers groups to engage with external agencies, either to draw on useful resources or to influence policies. These findings are in line with studies that provide considerable evidence on the effects of institutions in boosting social capital levels (Stolle and Hooghe 2003). They also lend credence to studies that point to the role of diverse forms of social capital in enhancing human capital (Coleman 1988; Uphoff and Mijayaratna 2000).

In addition to gains in human and social capital, enforcement of by-laws has also been important driver of adoption of agroforestry technologies and important mechanisms for conflict management. The by-law formulation and implementation processes have proved to be robust over time, and growing in confidence. They have continued operating well after the end of the PLAR project. Although still too early to make conclusions, these results suggest that social capital can be not only productive, but also persistent. However, we recognize that effective innovation in the policy and institutional arenas is generally location and context specific. Efforts of the PLAR have been limited to community or micro-level interventions. In most participatory and adaptive management projects, success is often registered at small scale where effective participation is possible. In their recent analysis of adaptive management experiences, Stringer et al. (2006) recognize the challenges of scaling-up participatory processes, particularly influencing national-level policies. The challenge has always been comparability, transferability and replicability beyond local communities, to generate quality benefits to more people, in wider geographic areas. It is not known how such social and institutional innovations at the micro-level influence the meso- and macro levels.

The results of this paper also show the difficulties of addressing the negative dimensions of community by-laws. Enforcement of by-laws did not always ensure fairness, especially to women and the elderly endowed with fewer human, financial, social and political capitals. Some of these negative outcomes illustrate the weaknesses of the concept of social capital. The emerging literature on social capital is increasingly questioning the general presumption that strong social capital has only positive effects (Durlauf 2002, Rose 1997). Benefits to some may imply harm to others or may result in socially undesirable outcomes (Fine 2002, Siisiäinen 2000, Mayoux 2001:177). Because participatory processes usually focus on group consensus, they often fail to deal with power, politics and inequality in community processes. We need alternative ways for reaching such farmers, and build their capacities to exploit these new opportunities. There is limited experience with participatory processes suggesting that the “hard-to-reach” can be reached, and that they can be empowered to exploit emerging opportunities. The practical issue is how to learn from and multiply these fragmented successes, and to leverage societal benefits to a scale whereby these poor men and women gain skills, power, technologies and policy support to largely benefit from new initiatives. Action research should examine what strategies and approaches can work in different contexts to reach the hard-to-reach, and the best ways for maximizing social learning across different scales.

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Table 1: Community-based indicators for tracking social capital outcomes

Performance area	Outcomes and Indicators
Participation	<ul style="list-style-type: none"> • Continuous attendance at meetings and community activities • Number of farmers participating in various policy meetings, task forces and community NRM activities • Number of women participating in meetings • • Number of farmers involved in implementing by-laws • Change in motivation and expectations from participation • Extent of women's participation in making decisions
Performance	<ul style="list-style-type: none"> • Number of meetings of task forces and policy meetings at community level • Number of meetings conducted by the task forces • Level of compliance with the by-laws • Perception of effectiveness of by-laws and task forces by community members • New skills and knowledge level • Extent of collective action in NRM • Trees and grasses planted along the trenches • Increased number of trenches • Reduced conflicts • Resource mobilisation and allocation for collective action • Neighbouring communities seeking information and visiting • demand of NRM technologies • Number of nursery beds • Evidence of positive change in NRM
Sustainability	<ul style="list-style-type: none"> • New action plans developed • Ability to take independent actions and decisions • Ability to analyze and explain issues and problem • Community willingness to plant trees and get seeds on their own • New activities initiated • Increased community savings to invest in NRM activities • Number of meetings of task forces and policy meetings • Linking with other development organisations

Table 2: Assessment of effect of different dimensions of bonding social capital

Dimensions of bonding social capital	Has improved significantly	Has improved slightly	No change	Has deteriorated or never happens
Compliance to norms and rules	44.8	41.4	3.4	10.3
Participation in community activities	17.2	75.9	6.9	---
Financial contribution	10.3	41.4	20.7	27.6
Cooperation amongst people (Reciprocity and exchange)	6.9	75.9	10.3	6.9
Altruism (helping others)	3.4	20.7	10.3	65.5 (44.8)*

* Percentage farmers who believe the spirit of helping others does not exist in their communities

Table 3. Level of participation in mutually beneficial collective action

Types of activities and level of participation	Mean number of events	Average Number of participants	Average Number of women	Maximum number of participants
Making trenches	4.7 (4.7)*	25 (17)*	11 (7)	100
Planting trees	2.6 (3.7)	20 (20)	10 (9)	70
Managing tree nurseries	4.7 (5.1)	32 (22)	17 (12)	70
Community meetings	5.2 (3.4)	53 (42)	48 (40)	150

*Figures in brackets are standard deviation

Table 4: New soil conservation measures established in 2005 (percent of farmers)

Soil Conservation Measures	Female headed households	Male headed households	All households
Construction of new terraces	38.6	45.3	42.1
Digging of trenches	32.9	38.7	35.9
Stabilizing with agroforestry technologies	25.7	30.7	28.3
Planting grass strips	8.6	9.3	9.0
Use of trash lines	5.7	6.7	6.2

Table 5: Some negative effects of by-laws enforcement (%)

Negative changes	Males	Females	Total
Conflicts between grazers and cultivators	54.5	60.0	58.1
Conflicts with local leaders	18.2	5.0	9.7
Conflicts within homes	9.1	10.0	9.6
Committing the old and the weak to implement the by-laws	9.1	5.0	6.5
Reduced grazing land	-	10.0	6.5
A lot of time spent during by-law implementation	-	5.0	3.2
Trees attract grazing animals that destroy crops	9.1	-	3.2
Loss of implements	-	5.0	3.2
Total	100	100	100

Figure 1. Gender patterns of participation in community byelaw meetings over time in pilot communities

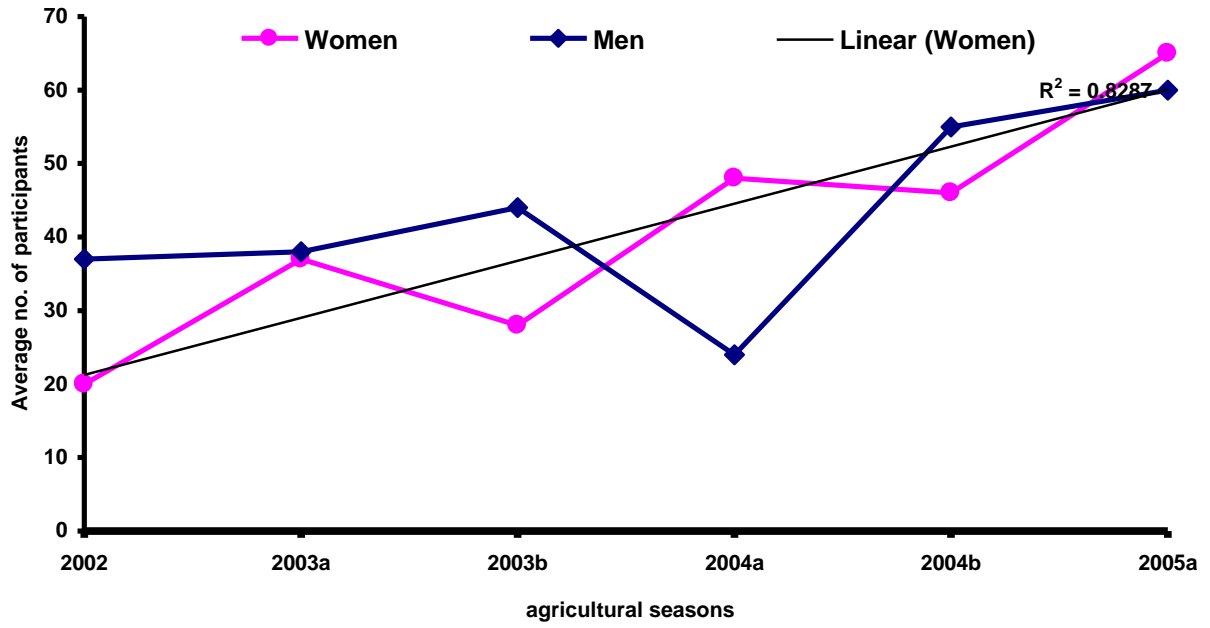


Figure 2: New soil conservation measures (Average number of trenches per household) established in the four pilot communities

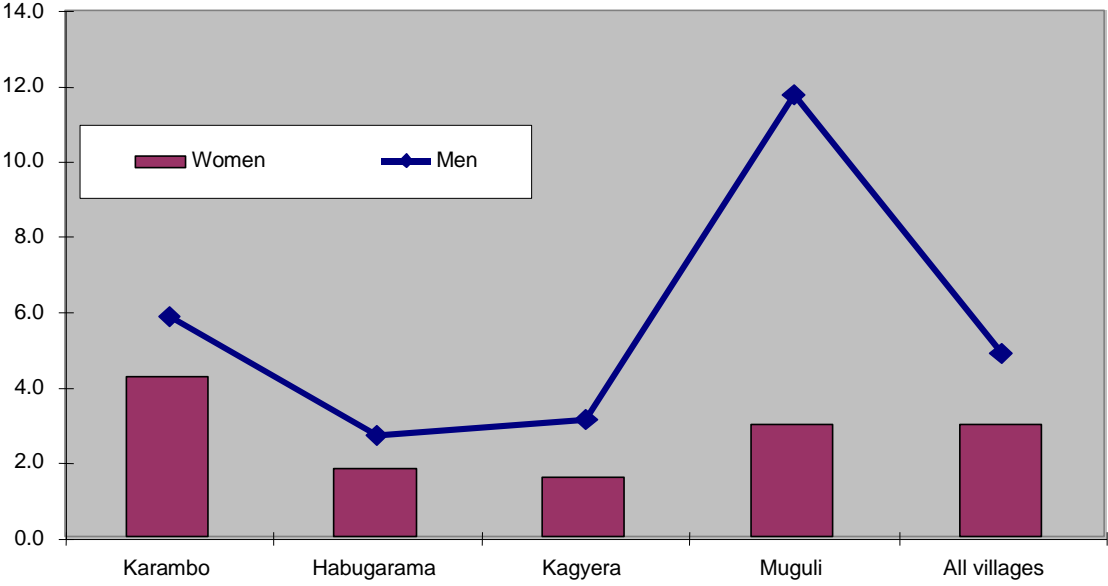
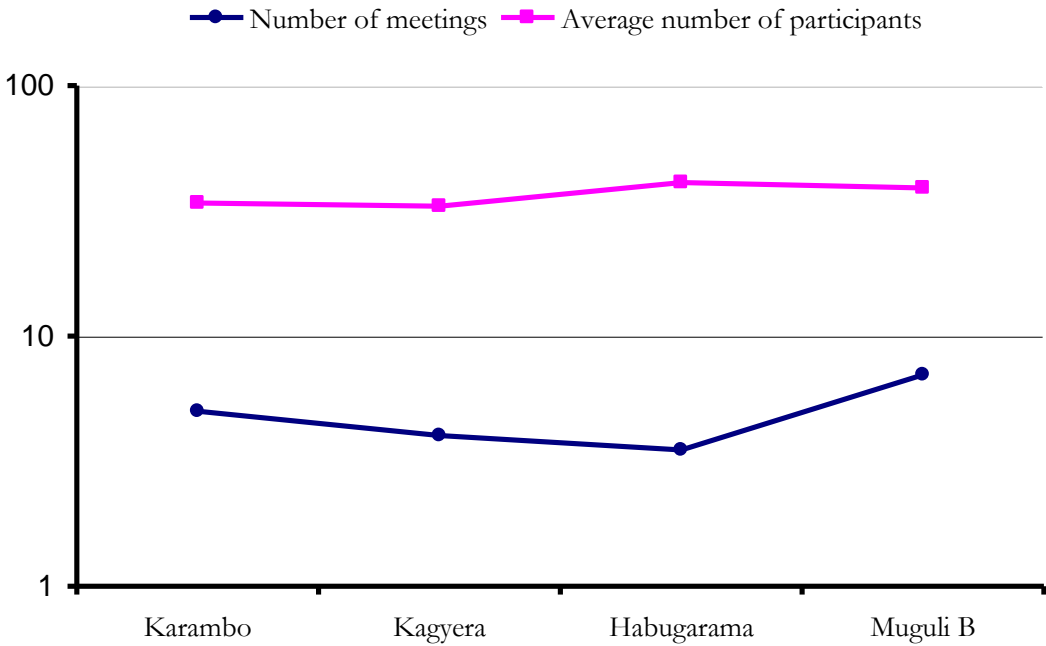


Figure 3: Number of PTF meetings and average number of participants in meetings



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