

NATURAL RESOURCES SYSTEMS PROGRAMME

R8494 ANNEX A: SCIENTIFIC REPORT

Tracking Social Capital Outcomes and Sustainability of Local Policies in Natural Resources Management¹

Pascal C. Sanginga^{1*}, Rick Kamugisha², Annet Abenakyo¹ and Robert Muzira³

¹International Centre for Tropical Agriculture; CIAT-Kampala;

²Africa Highlands Initiative, Kabale, ³CIAT-Kabale

*Corresponding author

International Centre for Tropical Agriculture (CIAT)

Kawanda Agricultural Research Institute

P.O. Box 6247 Kampala, Uganda

Tel: +256 41 567670; Fax +256 41 567635

Email: P.Sanginga@cgiar.org

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EXECUTIVE SUMMARY

It is now well recognized that social capital is an important asset upon which poor people draw in pursuit of their livelihood objectives. Social capital has the characteristic of a public good; with the implication that it can be created and strengthened. Five years ago, we initiated a participatory learning and action research project on '*Strengthening social capital for improving policies and decision making in NRM*' in the southwestern highlands of Uganda. The project aimed at stimulating and facilitating participatory social learning processes to increase the skills and knowledge of communities, their leadership capacity, and their motivations to act and create conditions for the formulation and implementation of appropriate community byelaws and local policies that can lead to better management of natural resources. Among other results, four pilot communities formulated a number of byelaws for improving NRM based on participatory visioning and community action plans, and established social capital mechanisms for monitoring their implementation and enforcement.

One year after project completion, we initiated a study to find answers to important questions such as: What has happened since project completion? Does strengthened social capital translate into improved participation in policy formulation and implementation? Does it translate into better management of natural resources, or accelerated adoption of improved NRM technologies? What are the conditions for sustainability of participatory policy processes? Who benefits and who loses, and in what ways? The purpose of this study was to track the outcomes, potential impacts and conditions for sustainability of byelaws and social capital processes for policy action. The study was conducted in five communities one year after the end of the action research, using a combination of participatory tools, household surveys and participatory land degradation assessment. More specifically we used the After Action Review (AAR) and "Peer Assist " techniques. These are interactive group-based participatory techniques to facilitate a critical reflection of the performance, the outcomes, uptake and conditions for sustainability of village policy task forces; community action plans and selected byelaws.

Results reveal that there have been considerable effects on three key components of rural livelihoods: social capital, human capital, and natural capital. There is evidence of increasing trust, cooperation, collective action, awareness and compliance to collective norms and rules or byelaws, as well as participation in community meetings and collective action initiatives for the implementation of the erosion control and tree planting byelaws. The number of collective action events for byelaw implementation varied between three and seven within a year after project completion. There is also evidence of increased

women participation in community events and decision-making, assertiveness, leadership, confidence and sense of self worth, which are important indicators of empowerment of women in a patriarchal society. The physical outcomes of the two byelaws, and the performance of the PTF were measured in terms of the extent of land degradation, number of trees planted, number of trenches constructed and farmers' perceptions of NRM improvement. While there is evidence of attempts to control soil erosion through the implementation of byelaws on making trenches, it is still too early to make a robust assessment of the impacts of strengthened social capital on sustainable natural resources management. The effectiveness of byelaws was often constrained by lack of appropriate technologies, political interference and limited support from policy makers.

Despite serious challenges faced by the different community policy initiatives, there is evidence of sustainability of such initiatives in certain communities, while their continued functioning and effectiveness in other communities remain a key challenge. All the five policy task forces continued to function, one year after project intervention, with different levels of consistency. These policy task forces have been very effective in creating awareness about the byelaws, in mobilizing people to participate in collective actions, monitoring the compliance of the byelaws, providing feedback to the community, and linking the community to the District and NGO partners. The more performing PTFs are embedded in decentralized local government structures and farmers groups at the village level, with the majority of its members doubling also as local councilors and members of the executive committees of agricultural-related groups. They have managed to create community and political alignment and support of the byelaws through leaderships and shared visions of desired future conditions. The less performing were seen as parallel structures to the local council, and were not sufficiently integrated in existing farmers groups; creating some levels of e conflicts and confusion. The most important reason for expecting sustainability and potential impacts is that the PTFs continued to function, farmers are enthusiastic and continue to participate in byelaws implementation, and are eager to initiate new activities and link with other rural service providers. New villages have also initiated similar processes. Some PTF members have been contracted by the district to provide facilitation services on institutional development to other farmer groups in neighbouring communities. Although there are strong indications and willingness of sustainability, tracking changes and isolating outcomes of such processes over time, and their influencing factors five years after an intervention

Key words: *byelaws, collective action, gender, participation, policy, social capital, sustainability, visioning, Uganda*

1. INTRODUCTION

Social capital² is a concept that has generated a rapid growth in interest in recent years from a variety of social science disciplines and studies of natural resources management, technology adoption, policy, institutions and sustainable livelihoods. It is now well recognized that social capital is an important asset upon which poor people draw in pursuit of their livelihood objectives for improving natural resources management (NRM), increasing economic opportunities, technology adoption, successful policy interventions, community development and poverty reduction (Pretty, 2003a,b; Uphoff and Mijayaratra, 2000; Woolock and Narayan 2000, Lule et al., 2004).

Social capital has the characteristic of a public good (Rudd, 2000; Molyneux, 2001) with beneficial outcomes as a policy resource that must be strengthened. Its reinforcement and continued deployment in a society is what maintains the existence and emergence of particular institutions for improving the management of natural resources and for successful participation in policy formulation and implementation. As Rudd (2000) points out social capital can be created and strengthened by stimulating an “interactive process of identification of alternatives, discussion, contestation and decision making”, Based on this premise, we embarked on an action research project for *‘Strengthening social capital for improving policies and decision making in NRM’* in the southwestern highlands of Uganda (for details see Sanginga et al., 2005). The emphasis was to operationalise the construct of social capital through participatory research and social learning processes aimed at increasing the skills and knowledge of communities, their leadership capacity, and their motivations to act and create conditions for the emergence of appropriate byelaws and local policies for improved resources management.

Among other results, the project increased understanding of mechanisms and approaches for strengthening social capital, and facilitating participatory processes for byelaw formulation and implementation. This involved the formation and functioning of policy taskforces at different levels to review, initiate, formulate and monitoring the implementation of community byelaws, and for linking communities to local government structures and other rural service providers. As a result, a number of community byelaws on controlling soil erosion, tree planting, animal grazing, drinking of alcohol, wetland management and bush burning were formulated and implemented with different levels of success in the pilot communities.

² A summary review of the origin of the concept of social capital, its different definitions, frameworks, dimensions and operationalization can be found in Pretty (2003), Rudd (2000), and Sanginga et al (2004).

However, as observed Pretty (2003b), the fact that social capital has been strengthened, policy task forces have been established, and bylaws formulated does not guarantee more equitable and sustainable outcomes on natural resources management and other livelihood assets. Important questions relating to the wider outcomes of social capital remained unanswered. Such questions included: what happens over time after project intervention? Does strengthened social capital translate into improved decision-making and participation in policy formulation and implementation? Does it translate into better management of natural resources? What are the conditions for sustainability of such intensive processes? Who benefits and who loses, and in what ways?

This study sought to find answers to these questions. Its purpose was to track and document and tracking the outcomes, patterns of participation, potential impacts and conditions for sustainability of byelaws and community processes for policy actions they occur over time. This tracking study is important to investigate and document what has happened, who participates, and assess the performance of these different processes and institutions on different aspects of community livelihoods, one year after project intervention. A tracking study is also important to contribute in documenting generic outcomes of social capital and producing research findings that can be used to promote effective approaches and processes for strengthening social capital, and facilitating participatory processes for influencing local policy change in NRM.

2. METHODOLOGY FOR THE STUDY

The context and setting of this research is described in detail in previous reports and papers (Sanginga et al. 2005; Sanginga et al., 2004). The “tracking” study was conducted in four pilot communities, and one “control” village over a period of six months (May-October 2005), one year after the completion of the intervention phase of the action research. The control village was selected to represent a counterfactual where there has not been similar intervention on byelaws but where other development programmes have been introduced. A village in Karujanaga parish in Rubaya sub-county was selected to serve this purpose. This village represented similar conditions like the other four villages. It was used as an intervention site for CARE-Farmer Innovation Project for three years and then phased out. This project used the group approach to strengthen farmers capacity to innovate and develop and implement community action plans to address natural resources management issues.

This tracking study combined iterative participatory approaches and tools with more conventional household and community survey methods. The first step was to facilitate a **participatory analysis and selection** of important byelaws that needed

tracking. This involved a community analysis of the strengths, weaknesses, opportunities, and threats of different byelaws to prioritize the most important for the communities. Three byelaws, the soil erosion, tree planning and controlled grazing byelaws were selected out of the six byelaws developed by the different communities. The second step was to identify **indicators for tracking changes**, and establish a community-based process for tracking and analyzing changes and outcomes of the different byelaws and policy taskforces. Community indicators were then compared with, and enriched by indicators developed by field staff and other stakeholders. The indicators concerned participation, performance and sustainability of byelaws and policy task forces.

Based on these indicators, an interview checklist was developed and used with all the 16 households that participated in the **case studies** during the intervention phase (Martin et al., 2004). These case studies were designed to look comparatively at households in contrasting circumstances to explore the reasons for differences in livelihood patterns between richer and poorer households and how these related to natural resource management practices. The case studies were intended to increase understanding of how social capital is activated in the pursuit of livelihoods, particularly how access to (or exclusion from) social capital can assist or impede access to other forms of capital and hence influence livelihood choices and outcomes. The case studies covered households across a range of wealth and status, including the poorest. It was also hoped that these case studies could illuminate any negative dimensions of social capital, such as excessive burden of obligations to family, kin and friends within informal social capital networks or perceptions of corruption or exclusion.

Table 1: Sample structure and description

	Description	Sample size
Communities	4 pilot communities and one control village	5
Case studies households	Households differentiated by gender and wealth categories	16
Household surveys	Stratified sub-sample from previous baseline studies, by gender and wealth	30
Village Policy Task Forces	Policy task force members Village local council members	29
Sub-county Policy task forces	Subcounty local council members NAADS coordinator Parish chiefs Agricultural Officer	15
District and	District Local council members District Technical services Civil society organisations	6

Informal interviews were also conducted with a sub-sample of 30 households systematically selected from the database of previous household baseline surveys, stratified by gender and wealth categories. Interviews were also conducted with 29 local leaders including members of the executive committee of local councils (LC1, LC2 and LC3), members of the various village policy task forces, and other group leaders in the community.

These household and key informant interviews were enriched with **focus group discussions** with the village and sub-county policy task forces (PTF). The focus group discussion sessions were organized to facilitate a collective process of reflection and analysis of the performance outcomes, and sustainability of the PTF from the perspectives of its members. To facilitate this process, we used the **After Action Review (AAR)** tool, a participatory tool for facilitating collective learning by talking, thinking, sharing and capturing the lessons learned about a completed activity before they are forgotten (CIDA 2002). AAR has the advantage of creating a climate of confidence as it focuses on constructive feedback, and explicitly recognizes positive contributions. 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 basic AAR questions were further specified to include a number of issues including: (i) what is the purpose and the motivating factors of policy taskforces? (ii) who is included, participating, what is the profile of members); (iii) what is the task force about (function, scope, ownership, management, themes) ?; (iv) how did the policy task force develop over time (lifecycle); and (v) what do government and community institutions and individuals gain from the policy task force? These questions provided the opportunity to evaluate what works, how and why, but also to induce a process of collective learning and sharing empirical examples and experiences with the policy task forces and byelaws, and to examine the critical factors that may have contributed to successes or difficulties in their effectiveness and performance. Follow up sessions were organized to identify strategies for dealing with challenges and obstacles to successful implementation and sustainability using the '**Peer Assist**' tool. This tool is an aid to collective problem solving between colleagues based on their experience and analysis. Selected members of village task forces with an important challenge were facilitated to present their situation for analysis, giving necessary details and stimulating constructive discussion and analysis of different strategies for coping with such obstacles.

The assessment of the outcomes and performance of byelaws on NRM required a **participatory land degradation assessment** (Mbabazi et al, 2004) with half of the selected

case studies and households. Field visits and measurements of the extent of land degradation in selected plots helped to assess the extent to which the implementation of the different soil conservation byelaws has resulted into effective measures for controlling erosion, for example making trenches, tree planting, etc.

At the end of the “tracking” process, a number of **feed back sessions** were organized at the community level and the sub-county level to validate findings and reflect on the conditions for sustainability. Data analysis is essentially qualitative based on individual interviews and group discussions. **Narrative analysis** was used to capture people’s voices and experiences. Qualitative analysis is enriched with simple **descriptive statistics** (frequency, means, ranges, standard deviation) and t-test and means comparisons of household surveys and land degradation assessment. More advanced statistical analysis will be done at a later stage to examine relationships between variables and to isolate the effects of different dimensions of social capital that create particular outcomes.

3. RESULTS AND DISCUSSION

The sustainable livelihood framework (Carney, 1998; DFID) provides a useful framework for assessing the outcomes of social capital. As one of the assets that people use to improve their livelihoods and achieve better livelihood outcomes, we can hypothesize that strengthening social capital will translate into improvements in some of the five capital assets (social, human, and natural). Mature social capital can also be instrumental in influencing policies, structures and institutions and in helping poor people and communities to cope with shocks and vulnerability.

3.1. Outcome indicators of social capital

The World Bank Social capital project has led to the development of an “Integrated Questionnaire for the Measurement of Social Capital. Six dimensions are considered: groups and networks; trust and solidarity; collective action and cooperation; information and communication; social cohesion and inclusion; empowerment and political action (Grootaert et al., 2004). Narayan and Cassidy (2001), identified criteria or indicators for measuring social capital. These include group characteristics such as financial contributions, frequency of participation in activities and extent of participation in decision-making, heterogeneity of membership; prevalence of norms of trust, helpfulness, fairness; closeness of everyday social interaction. Criteria also include community characteristics, - neighbourly connections, the extent of voluntary work on community activities and sanctions for non participation; the extent of trust among different groups

within family, neighbourhood and leadership roles both inside and outside village; a sense of pride and identity; the extent of communication.

Table 2: Community-based indicators for tracking social capital outcomes

Performance area	Outcomes and Indicators
Participation	<ul style="list-style-type: none"> • Continuous attendance to 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 meetings conducted by the task forces • More farmers involved in implementing byelaws • Extent of participation in decision-making • 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 and community meetings at community levels • Level of compliance of the byelaws • Perception of effectiveness of byelaws and task forces by community members • Skills and knowledge level • Exchange visits hosted or conducted • Extent of collective action in NRM • Trees and grasses planted along the trenches • Increased number of trenches • Reduced soil erosion • Reduced conflicts • Budget allocation for activities • Neighbouring communities seeking information and visiting • Extent of demand of NRM technologies • Level of satisfaction and farmers’ expectations • Number of nursery beds • Linking with other organisations
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 • Evidence of positive change in NRM • Potential adoption of NRM technologies • 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 and community meetings at community levels • Knowledge and leadership skills of task force members

These indicators for measuring social capital can also be considered as social outcomes of social capital, and therefore were used in tracking social capital outcomes.

However, in the context of this “tracking” study, and given its time dimension, we focused on three aspects of livelihood: social capital (trust, cooperation, participation and networking), human capital (skills and knowledge) and natural capital (soil erosion control, tree planting and animal husbandry). A first step was to identify a set of community indicators for assessing the outcomes of social capital. It was important to establish a community-based participatory monitoring and evaluation system, a process that involve community members and local stakeholders to identify and agree on indicators and process of tracking change, and for reflective feedback. Focus group discussion sessions were conducted in the four pilot communities to introduce the “tracking” study, to identify indicators, agree on a process for collecting information and feedback, and assign responsibilities to some community members to facilitate the process. Table 2 below shows the types of indicators identified by the communities as useful for tracking change in the three key areas of participation, performance and sustainability.

3.2. Social Capital Outcomes of Social capital

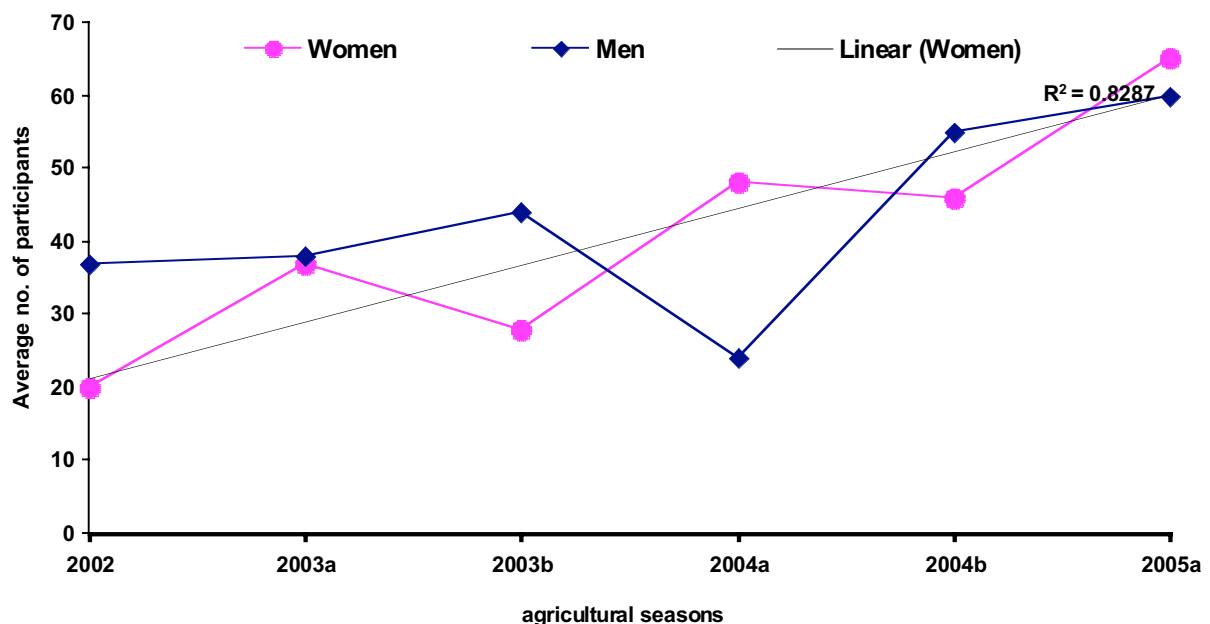
The first finding of this study is that the key outcome of social capital is **social capital**. Results show evidence that the community byelaw initiative has strengthened the four key dimensions of social capital: bonding, structural, bridging, and linking (See Sanginga et al., 2004 for details).

3.2.1. Participation in community byelaws formulation and implementation

One key indicator of social capital is participation in groups, community processes and byelaw formulation and implementation. Household interviews and analysis of group records showed that the majority of farmers (75.6%) attended community meetings and events related to byelaws on tree planting, erosion control, and controlled grazing. Farmers’ participation increased gradually from the first season of 2003a through 2004a and dropped drastically in 2004b before rising again in 2005a. The drastic drop was attributed to unequal distribution of tree seedlings from the communal nurseries to community members. However, further analysis showed that men tended to participate in meetings where important decisions were supposed to be made on the byelaws. In general, there was an increase in farmers’ participation in communities meetings related to byelaw implementation and monitoring.

Figure 1 shows the trend of participation of men and women in community byelaws meeting. While participation has not been very consistent over the periods, there have been periods of high participation and low participation of both men and women. However, there is evidence that participation has increased over time, and has been somehow sustained. A linear trend line based on women’s participation shows steady increases of women ($R^2 = 0.83$) from below 20 to more than 60 women in the different community meetings.

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



The high participation of women is consistent with analysis of the dynamics of participation in farmers’ organisations in Africa (Sanginga et al., 2003) which show that contrary to other parts of the developing world (Uphoff, 1988; Ashby et al., 2000; and Humphries et al. 2000), membership in farmers’ organizations is dominated by women. In Africa, women are central to the forms of social capital that development organizations and governments are keen to mobilize (Molyneux, 2001) in community development programmes.

3.2.2. *Embeddedness and competition*

An important consideration in assessing the outcomes of social capital is to look at social capital as a resource that is connected with group membership and social networks. This is important since group memberships creating social capital have a "multiplication effect" on the influence of other forms of capital (Bourdieu, 1986). A variety of studies of rural development and natural resources management have shown that when people are well organized in groups, they are more likely to sustain activities after project completion (Pretty, 2003). There has also been any significant change in the level of structural social capital expressed as membership into groups and other social organizations. As reported early, the four pilot communities are endowed with high level of structural social capital measured by the organizational density within the community and membership to diverse groups. Most farmers belong to more than two groups, and have been members of these groups for over five years (mean=5.4, Standard deviation 4.8).

Over the last year, there was emergence of two new groups in Muguli B and Karambo for managing community nurseries and soil conservation. These groups had a membership of 32 farmers (17 women) and have quickly stabilized. A number of existing groups in the four pilot communities have expanded their activities and taking on new functions for community tree nursery management and erosion control. They have also set up sub-committee for monitoring the implementation of byelaws. In many cases, almost every household participated in tree nursery establishment, but the numbers reduced with time, then increased at the transplanting stage where tree seedlings were distributed to individual farmers. Men were more involved at the establishment phase and later transplanting of the seedlings. Management of nursery beds (weeding and watering) was mainly assigned to women (Place et al., 2004) and some men providing "technical support and protection". Participation in tree nursery management operations was one of the areas where collective action was ranked high (45.7%) and improving considerably.

There have been at least three different processes in which the village PTF have been connected to existing social institutions and groups within the communities. In Muguli B, the PTF was embedded in the decentralized local government structure at the village level (local council 1) as its chairman and majority of members are also local leaders and members of the main agricultural groups in the community. In Karambo, the PTF was embedded in the most influential group in the village but is not closely linked to the village local council. The PTF play a complementary role to the local council, and has been assigned the role of monitoring the implementation of the byelaws. However, the

power to enforce implementation and to impose punishments still remains with the village local council. In Habugarama, the PTF is seen as parallel to the village council, a situation which has created conflicts, confusion and power struggles resulting into divisions within the village. These different processes partly explain differences in performance and sustainability prospects in the different communities.

3.2.3. Common norms and rules

A third aspect of social capital is related to the process of formulation and implementation of byelaws. Byelaws are common rules, norms and sanctions mutually agreed that place community interests above those of individuals. Mutually agreed sanctions ensure that those who break the byelaw know how they will be punished. They give individual confidence to invest in collective activities knowing that other will do so (Pretty 2003), and create some level of trust that lubricates cooperation and social obligation. One key performance area was therefore to assess the extent to which farmers are aware of these community byelaws, and the extent to which people comply or not to the established byelaws. The study revealed that there was a widespread awareness of the different byelaws. Over 75.6% of households attended at least two community meetings concerning the byelaws.

Table 3: 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

Results in Table 3 show that there has been significant improvement in the extent of compliance to community byelaws over time in the four pilot communities. In the control village, it was often repeated that compliance to such byelaws has decreased considerably. In the same vein, participation in community activities and cooperation amongst people (reciprocity and exchange) tend to increase over time, and in 17% of cases it has increased considerably. This cooperation is more of the diffuse nature (Pretty, 2003) that 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.

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, and high levels of social capital. Women direct participation in byelaw formulation and implementation was also a key factor. 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.

3.2.4. Bonding social capital

This aspect of social capital is difficult to assess in a survey mode and requires more involving approaches of participant observations or more in-depth case studies. The difficult question is that of attribution: how do we attribute any improvement to byelaws and policy taskforce? An attempt was made to capture people's perceptions on the extent of improvement of some dimensions of bonding social capital (trust, reciprocity and exchange, altruism, etc.). In general there has not been significant improvement in those more cognitive aspects of social capital. Most farmers however reported a slight improvement which is still difficult to dissect the contribution of this process. Altruism or spirit of helping others, especially those in need, is still weak in most communities, although there have been some positive examples in some communities.

"...When it rained yesterday, water destroyed and passed through my house. I have tried to call people to assist me and even gone to church but nobody has come to assist me. "since I am sick and a widow, If the spirit of assisting others was there, I would have seen somebody coming to help me. I got married in 1964 but have never seen such a spirit in Muguli..."

There have not been good cases of financial contributions to support the implementation of byelaws, although in some groups, there are internal lending and saving mechanisms that have been used to support those members who are not able to participate in trench making and tree planting. The low income level and high levels of poverty certainly affects the ability and willingness to contribute. The elderly, sick, and the poor generally are unable to contribute financially and to participate in community activities requiring use of labour and financial resources.

3.2.5. Participation in collective action

The number of collective action events initiated by the village PTF was considered as an important indicator of their performance and outcome of strengthened social capital. Table 4 show that on the average, there have been about 5 collective action events relate to the implementation of the byelaws on soil erosion control and tree planting, ranging from 0 to 25.

Table 4 Level of participation in byelaws formulation and implementation

Types of activities and level of participation	Mean	Maximum
Number of times of making trenches in the past two years	4.7 (4.7)*	25
Total number of people involved in making trenches	17 (25)	100
Number of women involved in making trenches	7 (11)	40
Number of times of participating in planting trees in the past two years	2.6 (3.7)	20
Total number of people involved in planting trees	20 (20)	70
Number of women involved in planting trees	9 (10)	40
Number of times of participating in managing tree nurseries in the past two years	4.7 (5.1)	20
Total number of people involved in managing tree nurseries	32 (22)	100
Number of women involved in managing tree nurseries	17 (12)	50
Number of people that attended the meeting on soil conservation byelaws	53 (42)	150
Number of people that attended the meeting on controlled grazing byelaws	54 (45)	150
Number of people that attended the meeting on tree planting byelaws	48 (40)	150

* Figures in brackets are standard deviation

The level of participation in these events has been consistently high and increasing over time. Women’s participation in trench making was limited as compared to the men. On average the women got involved two times while the men participated 24 times. Trench making was the activity in which male respondents participated most because of its labour demanding.

Women’s participation was more reflected in tree nursery bed making, and tree planting. Since women are frequently those with highest participation in community activities and collective action, strengthening social capital “can come at a high, if unacknowledged, cost to women” (Molyneux, 2001:177). Such processes relying on unremunerated time and non-monetised labour exchanges, as compared with the more economically advantageous networks of men. It is however important to note the disparities between attendance to community meetings related to byelaws and effective participation in collective activities. For example, an average of 53 people attended meetings on soil conservation byelaws, but only 17 actually participated in making trenches, and 20 in planting trees. There are several reasons to this. 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 labour and other resources required to participate in meetings and collective action activities.

Table 5: Constraints to effective implementation of byelaws

Type of constraints	Males N=27	Females N=31	Total N=58
Lack of tools	14.8	22.6	19.0
Limited co-operation from animal grazers	11.1	25.8	19.0
Limited support from the local leaders	11.1	19.3	15.5
None compliance by members from other communities and across the boarder	22.2	3.2	12.1
Lack of required tree species	14.8	6.5	10.3
Laziness among some of the community members	14.8	3.2	8.6
Others	11.1	19.4	15.5
Total	100	100	100

Making trenches is labour intensive and not appropriate for the majority of women. It is culturally a man’s job that requires some appropriate tools that most farmers do not own and use for other farming activities. Furthermore the benefits of trench making or tree

planting are not immediate and require time to be seen. The excessive fragmentation of small plots scattered within and outside the communities is also an important disincentive to collective action and implementation of byelaws. There are many situations where farmers own more than 5 plots in different locations, and in communities where byelaws are not strongly implemented. Farmers from different communities do not see themselves as subject to the byelaws, and defy compliance.

Finally, some community members stubbornly refuse to abide by the byelaw because they are more influential politically, economically and socially, thus are not subject to punitive measures at the local level. The laxity of local leaders to enforce some regulations of the byelaws, coupled with political interference when elections are approaching has been one important factor in the violation of byelaws. In period of elections, elected local political leaders are reluctant to sanction people for the sake of not antagonizing potential electors.

3.2.6. Connectedness and networking within and outside communities

There has also been considerable improvement in 'bridging' social capital as expressed by the structural relationships between the village policy committees with the decentralized local government political structure (local councils), other social groupings within the community. There is increasing coordination or collaboration with these groups for sensitization, tools sharing, organizing collective action, organizing exchange visits across communities and groups, and in some cases mediating conflicts between groups. In most cases PTF members are also embedded in community groups and village local councils. Over 75% of farmers have been on exchange visit, hosting or visiting other farmers and groups on different aspects of natural resources management (tree planting, erosion control, zero grazing) related to the byelaws.

One key achievement of this process has been the establishment and functioning of village byelaw committees and local institutions 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 byelaw 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 research and development organisations. In Karambo for example, the policy task force successfully linked their community to the National Agricultural Advisory Services, and have accessed several resources under this programme. Similar examples were found in Muguli B and Kagyera where the PTF was instrumental in securing tools and seedlings from development organizations, and establishing demonstration plots for the community. Results also show that the different village policy task forces have increased the ability of farmers groups to engage with external agencies, either to draw on useful resources or to influence policies. This refers to linking social capital that crosses status, linking poor people and those in positions of influence (Pretty 2003).

3.3. Human Capital Outcomes of Social Capital

One key outcome of social capital is improvement in human capital (Coleman, 1998), expressed as information skills and knowledge, changes in behaviour and attitudes, respect of self worth, ability and confidence to speak in public, and to effectively participate in decision-making. There has been consistent flow of information between the PTF and community members, and the PTF and local government and research and development organizations. The PTF has helped in facilitating the flow of information not only on byelaws but also on technologies and other NRM aspects. This role of the PTF as a knowledge-builder has effects on increased knowledge, skills, reducing risks and increasing a number of other social benefits (Rudd, 200). Farmers' awareness and knowledge of byelaws, and NRM technologies is now generalized. Farmers have also acquired skills in nursery management, tree planting, soil erosion control and other NRM practices. Policy task force members have also been trained in leadership skills, negotiation and conflict management skills, communication and assertiveness, citizen participation and mobilization, and effective skills for managing groups and conducting meetings.

Individual interviews and focus group discussions revealed that men's respect and consideration of women had considerably improved (94.1% of the male and 85.7% of the female respondents). Results show that both men (85.7%) and women (88.2%) shared the opinion that women's confidence to speak in public had improved a lot over the three years. A number of women were holding leadership responsibilities in their respective groups, despite low literacy levels. *"...Women's participation in community activities is*

increasing because they have attended trainings and know that development of community depends on them...". Most farmers interviewed (95.6%) indicated that women's participation in community activities over the last three years had improved. In two of the four communities, women groups have been awarded district tenders for maintaining rural feeder roads. While men have succeeded in getting their wives (41.4%) to effectively participate in the community byelaws meetings, only 13.7% of women have managed to convince their husbands to participate. " ... *there is increased co-operation among wives and husband in some households while implementing the byelaws. For example some husbands assist their wives in constructing trenches and planting trees ...*" However, the extent to which this has translated into changing intra-household and community gender relations still need to be established.

"...in other families, the husband and wife make decisions together but for my case, I dig a lone but share the harvest with the husband. At times, I am denied of all the harvest..." said Janet Turyasima from Kagyera village

However, it may still be possible that women who speak in public "are mainly those who are educated but others are still shy" or have resources that most women do not have. The degree of women's participation and control over agricultural decision-making varies among households, and is a result of several factors. Many households, however, are increasingly operating a division of labour in which women take main responsibility for agriculture activities, while men are involved in non-farm occupations. It is important to examine the extent to which this type of 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 (Cornwall 2003).

3.4. Downside of social capital

Although, results above show that the outcomes of social capital have largely been positive, there are also some important downsides of the participatory process of byelaw formulation and implementation. These include increased conflicts among grazers and cultivators, which in some cases have led to divisions and hearted within communities, conflicts and confusion between the decentralized local government structure at the village level, and in some cases conflicts within households. Table 6 below presents the negative changes that community members have experienced over the period of byelaw implementation.

Table 6: Some negative effects of byelaws enforcement (%)

Negative changes	Males	Females	Total
Conflicts between grazers and cultivators	54.5	60.0	58.1
Hatred between none complaints and the 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 byelaws	9.1	5.0	6.5
Reduced grazing land	-	10.0	6.5
A lot of time spent during byelaw 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

“... They are two groups/factions that have now emerged in this village as a result of controlled grazing byelaw. 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 byelaw 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 byelaw process. They don’t have land or people to keep their animals. Nyang’obutungi group passed a byelaw 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 byelaw and implementation was left to the rich while the poor continued decided that the poor 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 ...” narrated a female farmer.

From a general perspective, the major constraint experienced by community members was lack of tools to facilitate byelaw implementation especially constructing trenches.

There are no mechanisms to integrate the weak, aged and most of them have many other domestic cores to attend to (see table below). Due to the limited powers entrusted to women in communities, they cannot confront the free grazers who are mostly men.

Secondly little time is available for concentrating on activities involved in byelaws implementation due to a lot of domestic demands. Lack of support from the husbands further aggravates the situation.

“... I used to dig when I was still young and energetic but due to my old age, I no longer participate. I like people who dig especially the young ones. I have five plots of land but they are all uncultivated. Some of my children who would have helped me, some died and others left for Kampala to look for job. My grandson who was assisting also left yesterday for Kabale. I am so miserable now and no one is willing to help me. I am tired of being called for some of these useless meetings where you don’t gain anything...I think I am too old and should be left alone ...” Said an aged woman from Habugarama village.

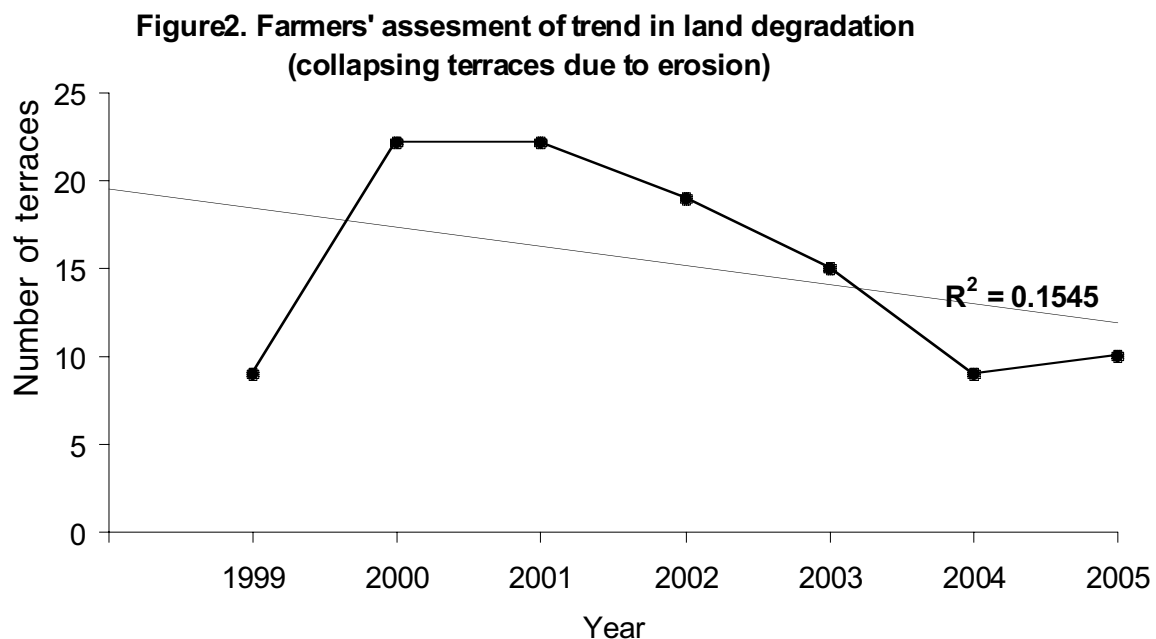
Table7: Problems faced by women in byelaw enforcement (%)

Problem	Males N=21	Females N=31	Total N=52
Some women are weak and aged	28.6	32.7	34.6
Lack of tools	23.8	19.4	21.2
Many household cores	14.3	22.6	19.1
Lack of support from husbands	19.1	9.7	13.4
Lack of money to purchase seedlings and hire labor	-	6.5	3.9
Lack of seedlings	9.5	-	3.9
Limited support from LCs	4.8	3.1	3.9
Total	100	100	100

“... Ever since I came to this village, I have been participating in meetings to discuss byelaws. Several byelaws to conserve our soils but very few people followed them. We keep on repeating the same thing in all meetings. But no one is providing tools to use...I tried to dig trenches on my plots, but I tell you the job is so hard. I have tried to maintain my trenches and soil erosion has reduced but production has not changed too much. Every time it rains, soil will fill up the trenches., We planted some shrubs but they take time to grow, even the trees don’t grow well. We are spending too much time and we don’t see the benefits. We don’t even have time to work on our own gardens. This is only benefiting these LC people who are quick to impose fines and spend their time drinking and in meetings...”

3.5. Natural Capital Outcomes of social capital

The baseline situation analysis conducted in 2002 showed that most farmers (93.5%) experienced collapsing terraces in their communities. The number of gullies different forms of erosion and land degradation (Mbabazi et al., 2003), and particularly collapsing terraces has increased over time, reaching its peak in 2000-2001 after the Elnino effects. The reduction in 2002 and 2003 could be partly attributed to the process of byelaw formulation and implementation, reaching it lowest in 2003 when the process was at its peak, and then increasing again in 2004 and 2005.

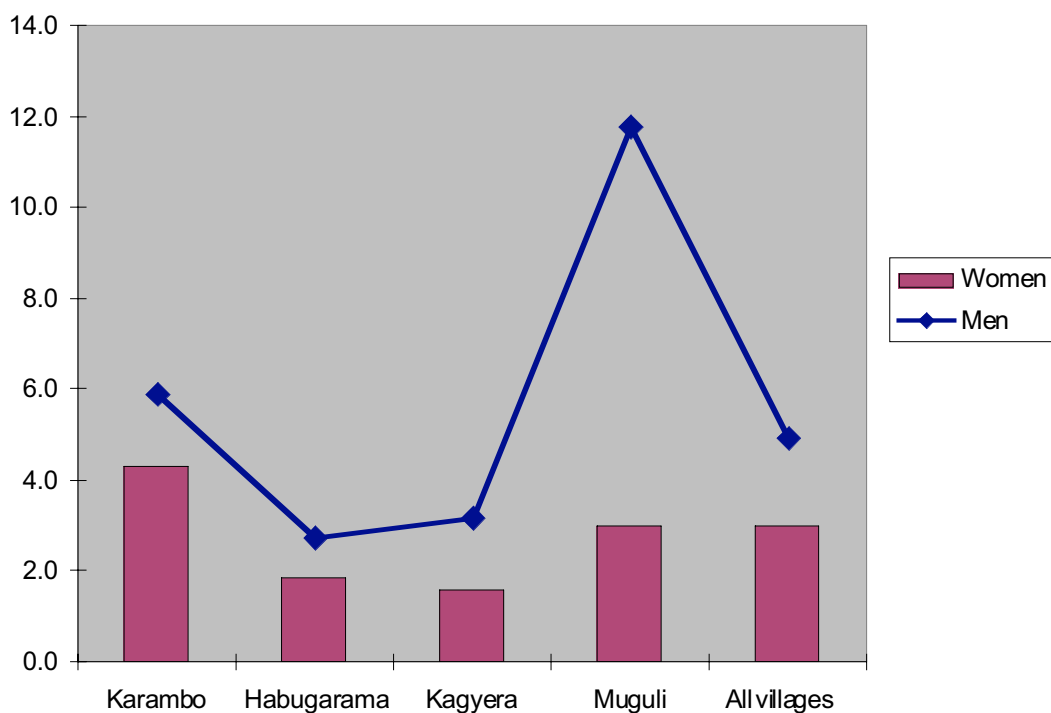


It is evident that some farmers are making concerted efforts to reverse land degradation by establishing new terraces, digging trenches and planting trees and grasses on different locations within the communities. This is till only 35% of farmers who are attempting to stabilize their trenches with live barriers such as agroforestry species and other fodder plants. Eucalyptus is also being planted in woodlots, homesteads and abandoned lands.

In addition to significant differences between communities, there were considerable differences between men and women in the number of trenches in each communities. On average, a male farmer in Muguli B could dig up to 12 trenches compared to an average of about 3 trenches for a female farmer. The total number of trenches reached 169 on over 200 plots. This reflected high capacity for mobilization of

men by the PTF in this village compared to others. It is also fair to acknowledge that this village received more tools and tree seedlings from development organizations that the PTF was able to link to. The same trend is observed in Karambo while Habugarama was marred with leadership conflicts that affected their performance. Despite these serious efforts by farmers, constructed terraces are often filled up with soil sediments after rains, since most farmers do not endeavour to stabilize their trenches with live barriers. Other than Muguli B, most of the soil conservation structures are not stabilized and therefore left bare or planted with crops in order to maximize space.

Figure 3: Average number of new trenches by male and female farmers in the pilot communities



3.4. Assessment of sustainability of policy task force

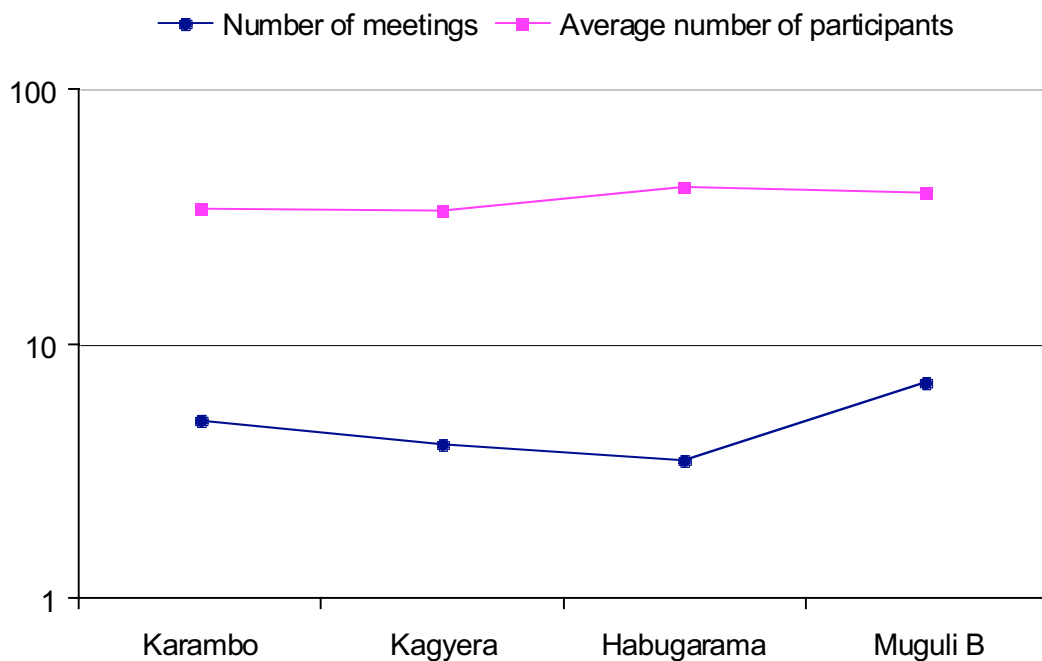
A village policy task force (PTF) was conceived as a community level mechanism to lead the process of formulation, monitoring and implementation of the byelaws (for details see Sanginga et al., 2004; Sanginga et al, 2005). It is made up with a variable number (4-7) of elected community members with the responsibilities of overseeing the monitoring of byelaw implementation and linking up with sub-county decentralized local government structures and service providers that can support community-processes. There were five such PTFs, one in each of the pilot communities, one at the subcounty level, and one at the district level. The subcounty PTF was composed of 15 members including the, Chairman LC III, 3 parish chiefs, chairman sub county farmers’ forum, Secretary for

Production, sub county NAADS coordinator, 2 VPTF representatives from each of the four piloting villages and ex official including sub county chief, NGOs representatives and AHI staff. The District PTF is modeled to the subcounty PTF but includes representatives of other subcounties, district councilors and district and national levels NGOs and development agencies. It is chaired by the District Vice-Chairman

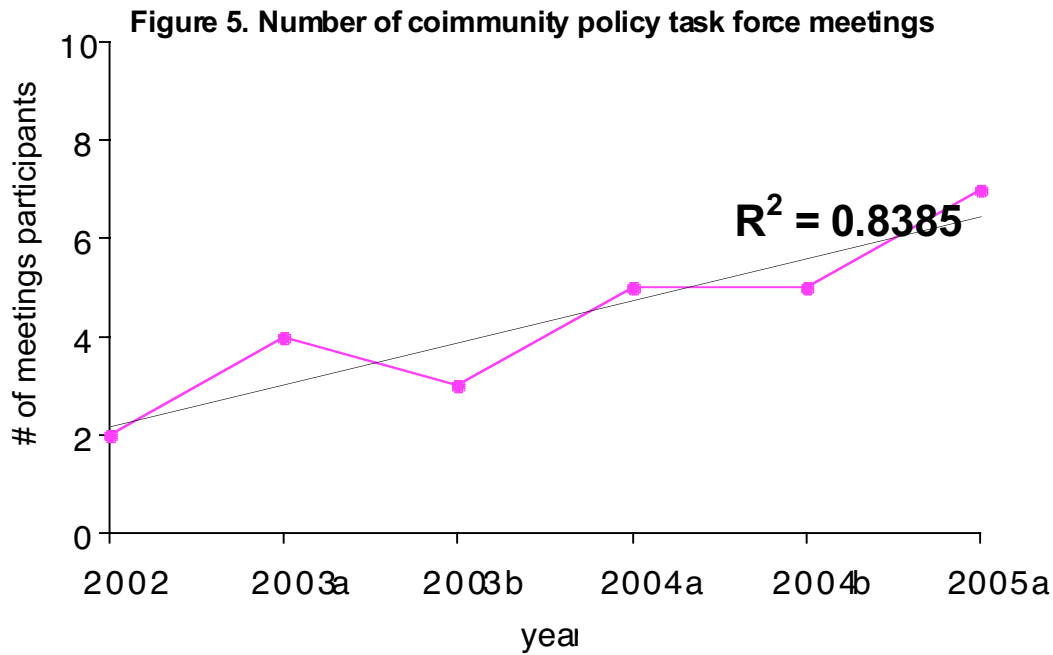
Results of the Action after Review (AAR) process with the different PTFs show that they have achieved considerable progress in the implementation of their action plans, and they demonstrated a strong willingness to continue with their activities. Majority of farmers interviewed also had confidence that the PTF have the capacity to continue after project intervention. Some PTFs (Muguli B, Karambo and some extent Kagyera) have proved to be robust over time, and growing in confidence. From the initial community visioning process and community action plans development (Sanginga and Chitiske, 2005), the PTF held a number of community meetings (Fig 4) to revisit their visions and community action plans, to evaluate their achievements and outcomes, and discuss alternative solutions for engaging communities and other stakeholders in the provision of technical support and inputs to community action plans.

One other indicator of sustainability of the village PTF was to look at the numbers of meetings conducted over the year after project completion, and the average number of people participating in such meetings. The logarithmic line graph below shows that there is some variation 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 PTF. The PTF in Habugarama was the less 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 entire village) for some events organized by the PTF.

Figure 4: Number of PTF meetings and average number of participants in meetings



In Muguli B, the community that had most PTF meetings, there was a steady increase in the number of meetings, from two meetings initially, and four at the peak of the project, to seven meetings one year after project completion. There are several factors that explain this performance in both Muguli and Karambo, compared to the other two communities. First, the PTFs are embedded in decentralized local government structures at the village level, with the majority of its members doubling also as local councilors and members of the executive committees of agricultural-related groups in Muguli B. In Karambo the PTF is embedded in farmers' groups and play complementary roles to local leadership. In both Habugarama and Kagyera, the PTF were seen as parallel structures to the local council, and were not sufficiently integrated in existing farmers groups. This would explain some of the conflicts and confusion recorded, and low participation in meetings.



The availability of collective tools and tree seedlings for supporting their initiatives in implementing byelaws was a critical factor in enhancing the PTF performance. This boosted the commitment of community members and their expectation to access seedlings and planting materials. The PTF had a strong and recognized leadership, embedded in other social structures and existing groups within the communities. This gave considerable power and authority to impose sanctions for those farmers who do not comply with the byelaws. A number of exchange visits and community training were also conducted to further improve the knowledge and skills level of community members. About 75% of farmers interviewed have been on exchange visits outside their villages, or have hosted other farmers visiting their communities.

There has also been a systematic documentation and record keeping process that undoubtedly enhanced the capacity of PTF to reflect on their achievements. There has also been relatively stable membership in the PTF (78% retention) and this has been important for both cohesion and trust building. New development initiatives such as NAADS in Karambo, exchange visits and participation in training workshops and seminars have also played a role in strengthening the skills level and knowledge of PTF members. Some of them have been trained in a number of areas such as conflict management, leadership skills, citizen mobilization and participation, assertiveness and communication skills, monitoring and evaluation, as well as in other technical skills for improved NRM.

As a result, 72% of PTF members strongly believed that there is high probability that their different villages will sustain the participatory process of byelaw implementation and monitoring with limited external assistance. This enthusiasm is shared only by about half of community members (48%) who were convinced that there were resources within their

communities to sustain such intensive processes, which require intensive labour and appropriate farm tools. Their belief is based on the facts that there is now a general awareness of the different byelaws and their benefits, local leaders have become more active and responsive to community needs. Farmers have also increased their knowledge and skill levels for managing tree nursery, participatory visioning and planning, experimentation and group development. They now have some appropriate farm tools and community nurseries. Some more organized groups have initiated internal savings and lending, and other income generating activities that can support the implementation of their community action plans. Community leaders have also been trained and have skills in citizen participation and mobilization. There are also opportunities within the existing government structures and new government programmes to continue the support to these community-based processes. A number of new groups have also emerged and are able to mobilize more community members. Interviews and records of the sub-county PTF revealed that 34 of the 58 villages have been sensitized to the new byelaws, and 58% of these villages have initiated processes for their implementation and monitoring, modeled to the initial four village PTF.

Several suggestions were made to enhance the sustainability and effectiveness of the PTF. A key strategy is to continue sensitization of farmers and create further awareness of the different byelaw. The provision of necessary inputs (seedlings and tools) will enhance the effectiveness of the byelaws. In addition to this, since byelaw enforcement alone cannot lead to increased yield, farmers need to be facilitated with agro inputs like improved seeds to enhance production and other resources like tools. It was suggested that PTF members be given allowances to motivate them to perform as expected. Other points of action included using local people to train community members rather than bringing in outsiders. Sub county officers need to be more actively involved in the process because of their position in government. Extending financial support to groups was also echoed. These strategies correspond to the five "INs" approach (Sanginga et al. 2004) that emphasizes strengthening institutions; providing information; finding incentives, linking byelaws to NRM innovations, and building a network of influence. A particular area of interest is linking NRM to market opportunities and organize communities to access better market opportunities and diversify their farm enterprises into higher value agricultural products.

4. CONCLUSION

There is no doubt that social capital is an important asset in NRM and community development issues. Results of this tracking study show that strengthening social capital has had positive outcomes on at least three key components of sustainable livelihood assets: social, human, and natural. An important finding of this study is that the main outcome of social capital is social capital. This is not tautological considering the different dimensions, types and mechanisms for activation of social capital. For example, strengthening bonding social capital (trust) alone may not result in wide ranging collective action, since such trust, cooperation and reciprocity are confined to group members only. Bonding social capital is limited in impacts, since its strength is founded on exclusivity. Therefore other dimensions of social capital need to be strengthened to produce collective norms and rules, or byelaws that facilitate cooperation beyond the small group. While there was considerable structural capital expressed by the density of memberships in farmers' groups and associations, it did not always translate into high levels of collective action prior to the project. For collective action to take place, the village PTF played a significant role in initiating, facilitating and monitoring the effective implementation of community byelaws. Byelaws are agreed common norms and rules that facilitated cooperation, reciprocity, exchange and trust. People were able to participate and comply with the byelaws knowing others will do so. Embeddedness in community social networks and groups, and connecting groups and communities, as well as linking them to service providers and decentralized local government structures have been critical in ensuring positive outcomes of the PTF and byelaws.

There is ample evidence that there have been significant improvements in human capital, expressed in terms of new skills and knowledge, change in attitudes and behaviour that support the implementation of byelaws. These findings are in line with other studies that point to the role of diverse forms of social capital in enhancing human capital (Coleman, 1988; Uphoff and Mijayaratna, 2000; Johnson et al., 2003). This suggests that strengthening social capital is likely to be most successful in enabling individual investments in NRM and other social benefits. In addition to gains in human capital, there have been some tangible outcomes of the community byelaws and PTF. The physical outcomes of the two byelaws, and the performance of the PTF were measured in terms of the extent of land degradation, number of trees planted, number of trenches constructed and farmers perceptions of NRM improvement. There has been increase in the numbers of trenches reaching 169 on over 200 plots in the most performing

community. Some farmers are attempting to stabilize their trenches with live barriers, but they often lack technical support and planting materials. There are significant differences between communities, and between men and women in the number of trenches in each community. These differences are due to differences in the levels of social capital between communities, and differences in PTF's capacity to mobilize men and increase their participation in community activities. While there is evidence of attempts to control soil erosion through the implementation of byelaws on making trenches, it is still too early to make a robust assessment of the impacts of strengthened social capital on sustainable natural resources management. The effectiveness of byelaws were often constrained by lack of appropriate technologies for stabilizing trenches, lack of farm inputs (tools and seedlings, planting materials). Political interference and limited support from policy makers were also seen as serious constraints to byelaw enforcement.

One year after project intervention the PTFs have continued to hold regular meetings with consistent participation of people. They are still trusted to monitor the implementation of byelaws and facilitate distribution of seedlings and planting trees. An important achievement was lobbying the sub-county council to enact their byelaws to give them more legitimacy and applicability in other communities. They have been successful in integrating community NRM activities in the NAADS program and other partners' programs that have assisted in setting up demonstrations on improved NRM technologies. AAR also revealed that the PTFs in the two leading communities have a long-term vision. A vision is seen as a key structural variable articulating linkages between human decision-making at individual and collective levels, which is one critical aspect of sustainability (Rudd, 2000). A collective vision acts as a motivating factor that leads to concrete actions and collective decision-making. Pretty (2003b) provide evidence that institutions with a long-term social vision have proven to be robust over time and some have survived over generations. However, it is still too early to make such assessment in the context of this study.

Results also show that, in one year after project intervention, the task forces continued to function effectively, and the byelaws are being implemented with different levels of success. These policy task forces have increased the ability of farmers groups to engage with external agencies and to link poor people and those in positions of influence (Pretty 2003). There is evidence that the VPTS in three of these communities have been instrumental in linking farmers and communities to decentralized local government structures and development organizations, thereby increasing access to technologies and external technical support. Although there are strong indications and willingness of

sustainability, tracking changes and isolating outcomes of such processes over time, and their influencing factors remains an important research challenge. More importantly, finding and isolating what dimensions of social capital, and what combinations of different dimensions are necessary to achieve wider outcomes and sustainability of social capital is still a challenge for research and development. This “tracking study” is an important step in this effort to develop a more robust framework for monitoring and evaluating the tangible and non-tangible benefits of participatory learning and action research.

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