NATURAL RESOURCES SYSTEMS PROGRAMME

FINAL TECHNICAL REPORT[1]

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Project Title

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

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Contents

Abbreviations and Acronyms

List of Abbreviations and Acronyms

AAR: After Action Review

AHI: Africa Highlands Initiative

ASARECA: Association for Strengthening Agricultural Research in Eastern and Central Africa

CIAT: International Centre for Tropical Agriculture

ERI: Enabling Rural Innovation in Africa

IDRC: International Development Research Centre

ISAR: Institut des Sciences Agronomiques du Rwanda

LC: Local Council

MBCA : Mutually Beneficial Collective Action

NAADS: National Agricultural Advisory Services

NGO: Non Governmental Organisations

NRM: Natural Resources Management

NRSP: Natural Resources Systems Programme

PTF: Policy Task Force

S/C: Sub-county

SSA-CP: Sub-Saharan Africa Challenge Programme

TSBF: Tropical Soil Biology and Fertility Institute

VPTF: Village Policy Task Force

1 Executive Summary

This "tracking" study was intended to provide the evidence-base of the outcomes, impacts, performance and sustainability of strengthened social capital in natural resources management (NRM) and to assess the uptake and dissemination of the processes and approaches for strengthening social capital as a follow-on to an earlier project that aimed at strengthening social capital for improving policies and decision making in NRM. This study is essentially a process monitoring and documentation research that used a combination of household surveys in five communities with participatory tools such as the After Action Review (AAR)" techniques to facilitate a critical reflection and collective analysis. A major finding of this study is that the main outcome of increased social capital is generally the production of more social capital. Results show evidence that the community byelaw initiative has strengthened the four key dimensions of social capital: bonding, structural, bridging, and linking. Household interviews and analysis of group records showed that more than 75% of farmers attended community meetings and events related to byelaws on tree planting, erosion control, and controlled grazing. Both women and men participated equally, but men tended to participate more where important decisions were to be made. The level of awareness of the byelaws has improved considerably, along with participation of farmers in mutually beneficial collective actions related to the implementation of these byelaws. For collective action to take place, the village Policy Task Force (VPTF) played a significant role in initiating, facilitating and monitoring the effective implementation of community byelaws. 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 evidence that the VPTS 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. The physical outcomes of the two byelaws, and the performance of the VPTF were measured in terms of the extent of land degradation, number of trees planted, number of trenches constructed and farmers' perceptions of NRM improvement. However, results revealed that social capital mechanisms did not always ensure fairness, especially to women and other categories of farmers endowed with less social, human and financial capital. Byelaw implementation and other forms of collective action processes have a high cost for women and the poor who end up taking the burden of implementation with limited resources. There is a downside to social capital as well as limits for coping with vulnerability and as an important strategy for improving livelihoods. This study contributes to make the construct of social capital operational and to the development of a more robust framework for monitoring and evaluating outcomes and potential impacts of strengthening social capital. The report addresses issues related to uptake promotion and scaling up-potential of research results, and highlights issues for further research on social capital.

2 Background

From 2000 to 2004, we facilitated a participatory learning and action research project titled *R7856: Strengthening social capital for improved policies and decision-making in natural resources management*" in the southwestern highlands of Uganda (Sanginga et al., 2005a). This project was premised on the ground that social capital is an important asset upon which people who largerly depend on the natural resource base 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, Uphoff and Mijayaratna, 2000; Woolock and Narayan 2000). The project's strategy was to identify and build on existing social capital and to strengthen it through facilitating participatory social learning processes and increasing the skills and capacities of communities to act and create conditions for the formulation and implementation of local policies for improved NRM. Among other results, the project facilitated the establishment and facilitation of functioning policy taskforces at the village, local government and district levels.

These policy task forces championed the review, formulation and implementation of community byelaws initiatives, and become mechanisms for linking communities to local government structures and other rural service providers (Sanginga et al., 2005a). The project also suggested some mechanisms for bridging research and policy to accelerate adoption of NRM innovations in the highlands systems (Sanginga et al., 2005b). Through these participatory social learning processes, communities developed their own byelaws for 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. The project assessed the effectiveness of these byelaws for conflict management and for facilitating the adoption of NRM technologies . The project also developed, tested and promoted more innovative approaches for participatory diagnosis based on community visioning and appreciative inquiry techniques for facilitating the development of community action plans.

This "tracking" study, undertaken one year after project's completion, aimed at investigating and documenting generic and specific outcomes, potential impacts and conditions for sustainability of strengthened social capital and local institutions. Tracking outcomes is essentially a process monitoring and documentation research that helps to assess the process of reaching the final impacts by looking at intermediate results or changes in the behaviours of people or organisations. Important questions relating to the wider outcomes of social capital include: 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? What happens after project intervention?. The main hypothesis of this study is that strengthening social capital will translate into improvements in some of the five capital assets (social, human, natural, financial and physical). Increased social capital is also be instrumental in influencing policies, structures and institutions and in helping poor people and communities to cope with chocks and vulnerability.

3 Project Purpose

The purpose of the project was to track the outcomes, performance, potential impacts and conditions for sustainability of approaches for strengthening social capital, NRM byelaws

and local policy institutions to improve the adoption of NRM innovations and policies. The project aimed at generating generic 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.

4 Outputs

The project had two interrelated outputs. The first output aimed at "tracking" and generating evidence of outcomes, impacts, performance and sustainability of strengthened social capital in NRM. The second output focused on developing appropriate communication materials to be used in uptake promotion against selected target institutions.

4.1 Tracking of outcomes, impacts and sustainability of social capital mechanisms, byelaws and local policy processes evaluated and documented.

The findings of this study are discussed in seven sections. First we discuss the outcome indicators of social capital. We then investigate the effects of increased social capital on the five livelihood assets: social capital, human capital, natural capital, financial and physical capital. The sections that follow discuss the downside and limits of social capital, and examine the conditions for sustainability of byelaws and policy task forces as effective local institutions, and the potential uptake promotion and scaling up of research results.

4.1.1 Outcome indicators of social capital

A radical critique regards the term social capital as a catch-all phrase, potentially including all social variables in whatever context and having the capacity "to mean more or less anything", and therefore not analytically useful (Fine, 2002). A first step was to identify a set of community indicators for tracking social capital based on three outcome areas: participation, performance and sustainability **(for details See Annex C: Developing indicators).** Table 1 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.

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

Performance area	**Outcomes and Indicators**

Performance	• Number of meetings of task forces and policy meetings at community levels • Level of compliance of the byelaws • Perception of effectiveness of byelaws 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 soil erosion • Reduced conflicts • Resources 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	• 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 • Number of community meetings at community levels • Linking with other development organisations • Knowledge and leadership skills of task force members

To systematise the "tracking" process, we used the sustainable livelihood framework (Carney, 1998; DFID) as a useful framework for assessing the outcomes of social capital. Our driving hypothesis is that strengthening social capital will translate into improvements in some of the five capital assets (social, human, natural, financial and physical), and play an important role in influencing policies, structures and institutions and in helping poor people and communities to cope with chocks and vulnerability.

4.1.2. Social Capital Outcomes of Social capital

The first finding of this study is that the key outcome of increased social capital is **more social capital.** This is not tautological considering the different dimensions, types and mechanisms for activation of social capital. We analysed the social outcomes of enhanced social capital along five key dimensions: participation in mutually beneficial collective action, participation in community byelaws implementation, compliance to byelaws and collective norms, and connectedness and networking.

Participation in mutually beneficial collective action (MBCA)

Uphoff and Mijayaratna (2000) stress that mutually beneficial collective action (MBCA) is the most specific outcome of social capital. The number of MBCA and the level of participation in MBCA were therefore used as key indicators and outcomes of strengthened social capital. Results show that one year after project completion, the four pilot communities organised up to 25 MBCA events (average 5) that directly relate to the implementation of the community byelaws (Table 2). These include tree planting, making trenches and managing

community nursery as well as attending community meetings on byelaws. .

Table 2 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

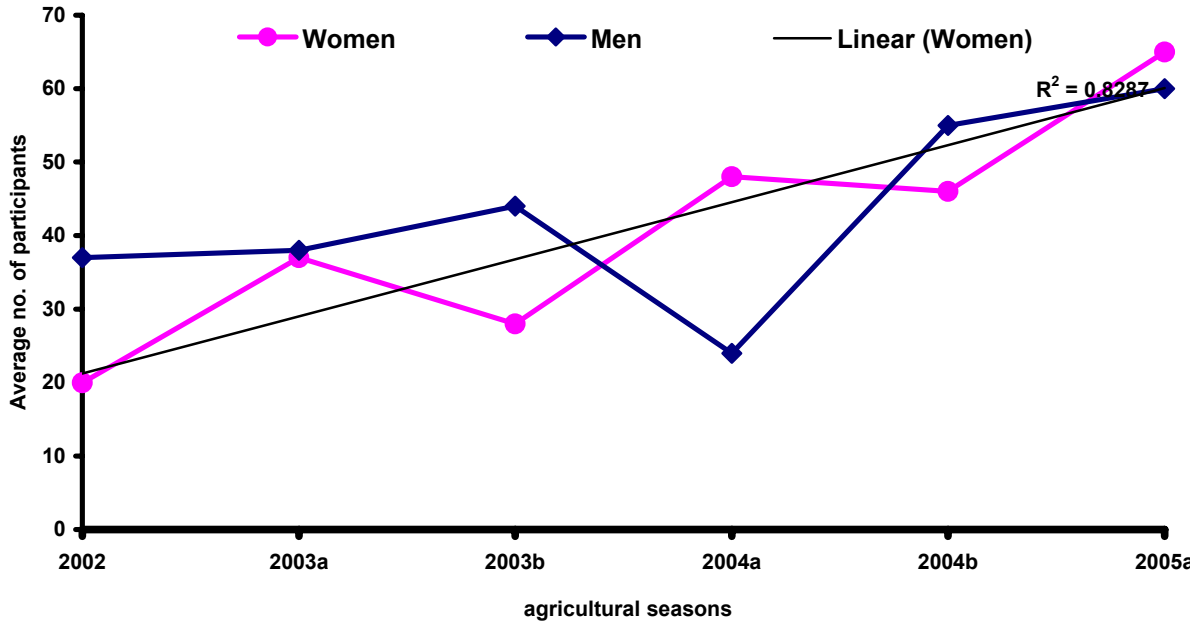
* Figures in brackets are standard deviation

The level of participation in collective action has generally increased since the formulation of the byelaws and the four pilot communities organized collective action events regularly, except in Habugarama where only 66% of farmers thought it was regular. The most common forms of collective action concerned making trenches for soil erosion control, tree planting, and managing community agroforestry nurseries. Collective action on agricultural activities for the benefits of individuals was restricted to group members only (22%) who relied on rotating exchange labour between group members. The level of participation in MBCA events has been consistently high and increasing over time. However, 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. 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. Participation in tree nursery management operations was one of the areas where collective action was ranked high (45.7%) and improving considerably.

Participation in community byelaws formulation and implementation

An important 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 bylaws. Over 75.6% of households regularly attended at least two community meetings concerning the byelaws. 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 (Figure 1). A key outcome of social capital is the extent of participation of women's in community activities. 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. The relatively 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 membership in farmers' organizations is dominated by women.

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



However, it is interesting to note that contrary to earlier findings on group dynamics which show decreasing participation of men's in group activities, the findings of this study show that men's participation was sustained over time. 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. Participation in community meetings on byelaw implementation has been relatively regular, with an average of 53 men and 48 women for a maximum of 150 farmers per community. However, this number reduces when it comes to actual implementation of byelaw and participation in collective action events on tree planting, trenches making and nursery management. Men tended to participate in meetings where important decisions were supposed to be made on the byelaws. A key outcome of this project was therefore to increase both men and women's participation in community activities and in MBCA events.

Cognitive and 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. 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.). 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 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, 2003a) 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. 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 may exclude some categories of people endowed with

less social and financial capital.

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*

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.

Bridging social; capital: Membership in groups and social organisations

An important consideration in assessing the outcomes of social capital was to look at social capital as a resource that is connected with group membership and social networks. There has not been any significant change in the level of structural social capital expressed as membership into groups and other social organizations. 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 (Sanginga et al., 2005a). However, oover the last year, there was emergence of two new groups in Muguli B and Karambo for managing community nurseries and soil conservation. These two groups had a membership of 32 farmers (17 women) and have quickly stabilized. We also found that at least seven existing groups in the four pilot communities have expanded their activities to include soil erosion control and agroforestry nursery. AAR revealed that two of the four VPTFs are increasingly taking on new roles in their communities, and tend to transform themselves into formal organisations with defined memberships and boundaries. They have established some byelaws regulating participation, financial contributions, and are defining new group structures and objectives beyond byelaw monitoring to include other activities. In their analysis of factors determining group performance, Place et al. (2004) reported that the most important variable that explained group performance was whether the group has taken on new activities. Groups that have taken on new activities performed better than others.

Linking social capital: Connectedness and networking

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. 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, organizing collective action, organizing exchange visits across communities and groups, and in some cases mediating conflicts between groups. While only 30% of farmers have been on exchange visit to other communities and majority of farmers have hosted other farmers and groups visiting their NRM work and exchanging experience on the byelaw formulation and implementation process. There have been at least three different processes in which the VPTFs have been connected to existing social institutions and groups within the communities. In Muguli B, the VPTF 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 active agricultural groups 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.

4.1.3. Human Capital Outcomes of Social Capital

One key outcome of social capital is improvement in human capital (Colleman, 1998), expressed as increased awareness, 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. AAR and household surveys revealed that there is a general awareness and knowledge of the byelaws and technologies for improving NRM. 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). Majority of 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.

A key consideration when assessing human capital outcomes was to assess whether the process has increased women's confidence and perceptions within the communities. 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. Individual interviews and focus group discussions revealed that men's respect and consideration of

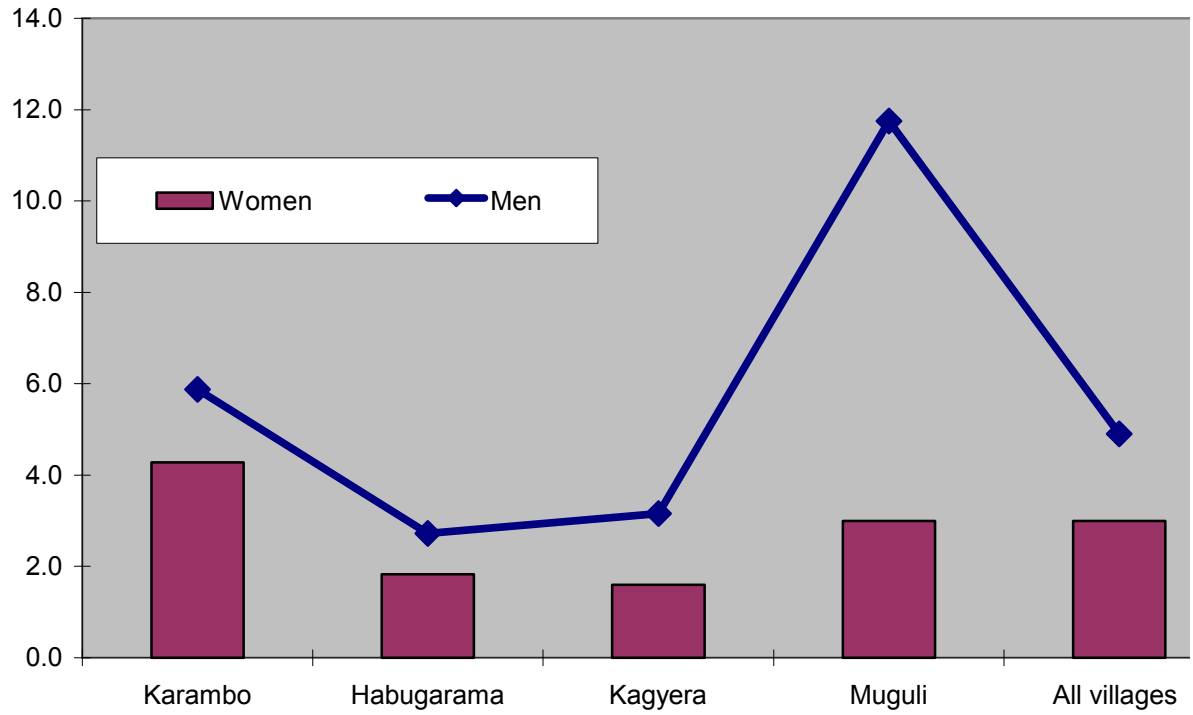
women had considerably improved (94.1% of the male and 85.7% of the female respondents). Results show that both men (85.7%) and women (88.2%) shared the opinion that women's confidence to speak in public had improved a lot over the three years. A number of women were holding leadership responsibilities 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..."*

However, the extent to which this has translated into changing intra-household and community gender relations still need to be established. 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 in a bargaining model of intrahousehold decision-making in which women actively participate in making important decisions for agriculture activities as well participation in community activities.

4.1.4. Natural Capital Outcomes of social capital

The NRM impacts of social processes are usually long-term and need more complex procedures to measure. However, it is possible to assess some outcomes or changes in behaviours and practices that may lead to improved natural resources management if sustained. In this study, we considered two important aspects: adoption of NRM technologies and conflict management mechanisms. The participatory land degradation survey conducted in 2002 showed that most farmers (93.5%) experienced collapsing terraces, gullies, and different forms of erosion (Mbabazi et al., 2003). It was 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. A number of farmers have attempted to stabilize their terraces with live barriers such as agroforestry species and other fodder plants. Most people felt there were benefits from the implementation of byelaws to stop soil erosion. Benefits identified in included a reduction in some forms of soil erosion and flooding; reduced problems of crop damage by livestock and tree planting by community members has reduced theft of trees.

Figure 2: Average number of new trenches by male and female farmers in the pilot communities



Results in figure show significant differences 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, 169 and 200 respectively. While in Karambo and other villages, differences in the number of trenches by men and women are not considerable,male farmers in Muguli B established about 12 trenches compared to an average of about 3 trenches for female farmers. The high involvement of men in this village has been attributed to the embededness of the VPTF into local village structures that were effective in mobilizing men for MBCA.

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
Stablizing 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

Results also 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 a bout 43.3% of households have established several new terraces over the recent past, 36% have further made trenches and 28% have planted agroforestry technologies to stablize these trenches. There is a clear willingness to use and purchase agroforestry technologies, at a rate significantly higher to current use status, and compared to other tree species currently

purchased by farmers. The fact that some farmers are now paying for agroforestry seedlings and are willing to pay when such seedlings are often distributed free of charge by development organisations and local government services is indicative of the awareness that farmers have acquired through this process. As noted earlier some VPTFs were able to mobilize money to purchase seedlings for community nursery. To further examine the relative importance of social capital variables in influencing adoption of agroforestry and other NRM practices, we performed three separate Logit regression models with agroforestry, constructing new terraces and planting grass strips or trash lines as dependent variables. Table 5 presents the results of the probability of using to control erosion and improve soil fertility.

Table 5: Determinants of use of soil conservation technologies by farmers' households: Logit estimates

	Agroforestry	Terracing	Grass strips
Gender (1=men)	-.270 `(-.41)	-2.21 (-3.18)***	1.87 (.63)
Age	.036 (1.72)*	.055 (2.73)***	.092 (2.20)**
Education level	.424 (1.42)	.91 (2.40)**	-.323 (-.80)
Farm income	.002 (1.16)	.000 (0.67)	.003 (.57)
Number of plots	.704 (1.45)	1.20 (3.08)**	-3.49 (-2.46)**
Number of adult males	-.815 (-140)	.823 (1.69)	2.62 (1.02)
Village type	.258 (.43)	.616 (1.05)	7.82 (1.98)**
Collective action	.656 (2.48)**	-.198 (-0.55)	-.309 (-.95)
Structural social capital	1.538 (2.08)**	.083 (.11)	1.07 (.72)
Bridging social capital	.100 (1.33)	1.77 (2.35)**	2.98 (1.67)*
Conflict index	.098 (.14)	1.97 (2.93)***	4.51 (1.94)*
Boundary conflicts	2.159 (2.86)***	-2.00 (-2.87)***	-2.84 (-1.85)*
Tree cutting	-1.423 (-1.71)*	-.77 (-1.18)	4.64 (1.93)*
Livestock grazing on crops	.777 (.70)	.573 (.46)	9.04 (1.64)*
Constant	-8.18 (-3.53)***	-10.15 (-4.15)***	-15.19 (-1.68)*
N	120	113	129
Pseudo R	.59	.62	72

Figures in brackets are z statistics
*Significant at 0.10; ** Significant at 0.0; Significant at 0.001.

This model shows that two dimensions of social capital: norms and sanctions or byelaws, and number of collective action events were positively and significantly related to the adoption of agroforestry innovations (Sanginga et al., 2006b, Annex D). We found that awareness and compliance with the three planting and soil and water conservation had significant effects on farmers' adoption behaviour. For example, the tree planting states that (i) any person who cuts a live tree shall plant two trees and ensure that the planted trees are protected and well looked after, and (ii) only agroforestry trees shall be planted on the boundary, terraces of neighbouring plots. Other tree species should be planted at a distance not less than 3m away on any other boundary. Many cases of conflicts between neighbours (animal grazing, terrace

destruction, boundary conflicts, tree cutting) were resolved through the implementation of community byelaws which require better management of natural resources. The "terracing" model shows significant negative relationship between gender and making new terraces, as expected. . This can be explained by the traditional gender division of labour in which require men are responsible for making the conservation structures, while women are responsible for producing and managing the farm. Most of these conservation measures require high physical labour. The "grass strip" model also confirmed the importance of social capital variables as positive drivers of adoption of NRM practices.

It is important to note that the prevalence of conflicts was positively related to adoption of agroforestry technologies (for details see Sanginga et al., 2006b and 2006c); and Annex A and D) . For example, there was a positive and significant relationship between boundary conflicts and adoption of agroforestry technologies. In other words, conflicts over farm boundary provided an incentive for farmers to plant trees to demarcate their boundaries . Results show that the byelaws and the VPTFs have 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. Reinforcement of byelaws give individuals confidence to invest in collective activities knowing that other will do so and create some level of trust that lubricates cooperation and social obligation (Ruud, 2000; Pretty 2003),. In their study of adoption of agroforestry technologies in eastern Zambia, Ajayi and Kwesiga (2003) also found that community byelaws played and important role in the scaling up of agroforestry technologies. Many conflicts were resolved through arbitration, taking the case to the PTF who facilitate negotiation between parties or arbitration to reach a mutually agreed decision. In other cases the VPTF referred some conflicts to the LC1 who have powers to impose decisions and sanctions on the people.

4.1.5. Downside and Limits 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

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.

An important consideration in assessing the outcomes of social capital is the extent to which women's participation and decision-making has increased. Previous reports (Sanginga et al., 2005a) and results of this study confirmed that both women's participation has been sustained, and men's perceptions of women's ability to participate in community activities have also improved. Diagnostic and assessment of social capital study (Martin et al., 2005) showed that there are gender differences in the kinds of networks to which men and women belong. Women were found to have a greater dependence than men on informal networks of everyday collaboration with neighbours and kinsfolk (bonding). Men had more formal networks across wider social groups (bridging) and more contacts outside the village (linking).Women's networks are often more akin to coping strategies, relying on unremunerated time and non-monetised labour exchanges, as compared with the more economically advantageous networks of men (Mayoux, 2001). Men had more formal networks across wider social groups (bridging) and more contacts outside the village (linking).

AAR and case studies revealed that women in highland communities face a number of challenges that affect their ability to participate in and derive benefit from collective action events, and for increased social capital. Women were not able to significantly contribute labor and other resources for making trenches and therefore some missed out on possible benefits. 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. Women participated more in managing tree nursery and tree planting. Such processes relying on unremunerated time and non-monetised labour exchanges, as compared with the more economically advantageous networks of men. 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 that 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.

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.

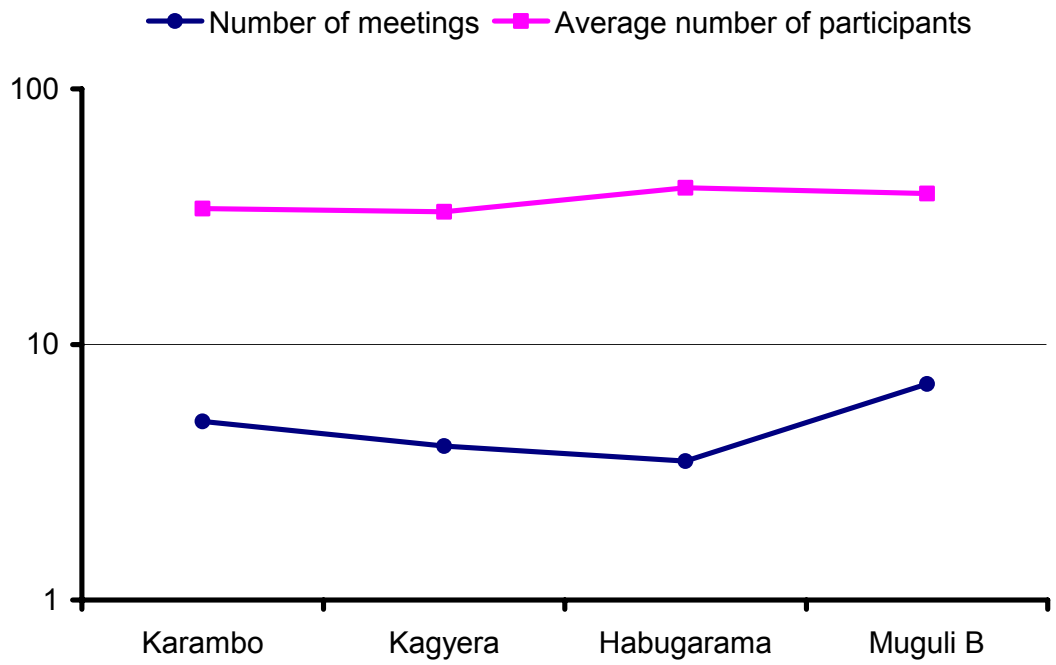
4.1.6.Limits of social capital

Social capital mechanisms have certainly a number of strengths and have been effective in a number of cases. But they also have some limits, and were not always effective in resolving certain types of conflicts (Sanginga et al., 2006c, Annex A). One important finding from this study is that social capital mechanisms were not effective for managing conflicts between local communities and external powerful stakeholders. Many of these MBCA events and conflict resolution mechanisms 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. The constraints to adoption/compliance with byelaws were explored with different households. Poorer households with limited land, emphasised the constraints to accepting the rules. "People do have not enough land and they cannot accept the lack of a place to cultivate and they end up destroying bunds and spilling agricultural activities into the swamps/wet land (Muguli). Construction of terraces was also viewed as problematic by some; 'because of lack of land, people don't want terraces; people end up hating those who are supposed to be implementing the law". This implies some negative aspects of enforcement which brought the risk of increasing conflict with the village leadership. AAR also revealed that the VPTF did not always ensure fairness, especially to women, and other farmers endowed with less assets, human, financial, social and political capital. 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 some local leaders to enforce some regulations of the byelaws, coupled with political interference when elections are approaching has been one important factor in the problems faced by the VPTFs.

4.1.7. Assessment of sustainability of policy task forces and community byelaws

The village policy task forces (VPTF) were conceived as a community-level mechanism to lead the process of formulation, monitoring and implementation of the byelaws (Sanginga et al., 2004; Sanginga et al, 2005a,b). The study assessed the extent to which the VPTFs continued to function one year after project completion. 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 3: 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. 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. 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.

An important aspect of sustainability of the PTF when dealing with complex and long term NRM issues, has been the development of collective vision of desired future conditions (Sanginga and Chitsike, 2005). Community visioning is seen as a form of structural and bonding social capital articulating linkages between individual actions and collective visions, and contributing to the development of shared norms, rules and sanctions. It acts as a motivating factor that leads to concrete actions and collective decision-making, which is one critical aspect of sustainability. There is evidence that the VPTFs 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. An important outcome was lobbying the sub-county council to enact their byelaws to give them more legitimacy and applicability in other communities. Interviews and records of the sub-county PTF revealed that 34 of the 58 villages have been sensitized to the new byelaws, and 52% of these villages have initiated processes for their implementation and monitoring, modeled to the initial four village PTF. Another key outcome of this type of communication is illustrated by the Karambo Tukoro policy task force members who won a district tender for providing facilitation services on

institutional development to other groups in a different sub-county. Providing backstopping services to this group remains an important issue for follow up.

5 Research Activities

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. The second step was to identify indicators for tracking changes, and establish a community-based process for tracking and analyzing and outcomes of the different byelaws and policy taskforces. Based on these indicators, a semi-structured interview checklist was developed and used with a sub-sample of 46 households. In addition, key informant 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. To facilitate the "tracking" and documentation 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 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, and to examine the critical factors that may have contributed to successes or difficulties in their effectiveness and performance. 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 byelaws, community action plans and policy task forces. Data analysis is essentially qualitative and of descriptive nature based on individual interviews and group discussions. Narrative analysis is used to capture people's voices and experiences. Qualitative analysis is enriched with simple descriptive statistics (frequency, means, ranges, standard deviation). Logit regression models are performed to examine relationships between different dimensions of social capital variables and adoption of NRM technologies.

6 Environmental assessment

6.1 What significant environmental impacts resulted from the research activities (both positive and negative)?

The project dealt with the issues of overcoming land degradation in the intensified cultivated and densely populated highlands of Kabale where major environmental degradation (soil erosion, deforestation, wetlands reclamation, bush fire...) is occurring in the midst of rural poverty. The three byelaws selected for analysis deal with controlling soil erosion, tree planting, and controlled animal grazing. There is evidence of widespread awareness of these byelaws and a considerable level of their implementation by the farmers in the pilot communities. The project also assessed the extent of land degradation and showed that farmers are making considerable efforts to make trench and plant agroforestry trees.

6.2 What will be the potentially significant environmental impacts (both positive and negative) of widespread dissemination and application of research findings?

If translated into action, the more widespread awareness of byelaws for improving NRM and the dissemination of appropriate technologies will result into sustainable management of natural resources, and particularly arresting land degradation.

6.3 Has there been evidence during the project's life of what is described in Section 6.2 and how were these impacts detected and monitored?

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. Tree planting is also on the increase with farmers managing community nurseries.

6.4 What follow up action, if any, is recommended?

This "tracking study" is an important step towards the development of a more robust framework for monitoring and evaluating the tangible and non-tangible benefits of participatory learning and action research. However, broadening this analysis over time to include lasting livelihood changes and attributing impacts to different dimensions of social capital, or their combinations to achieve wider outcomes is still an important challenge for research and development. An important consideration to bear in mind is that effective innovations in the policy and institutional arenas is generally location and context specific. Therefore, understanding the scaling up process and the sustainability of such intensive social learning processes is an important research challenge. Understanding the conditions under which such participatory processes could transform into functional innovation platforms for articulating demand from communities and for providing quality services to rural communities is an important area for comparative action research. One important consideration in assessing and sustaining such social learning processes is the issue of transaction costs. It is generally considered that such processes inherently result in high transaction costs, and are inherently time and resources consuming. It is generally argued that the tangible and non tangible benefits may offset the initial high costs, which gradually decrease as farmers build trust and continue to work together. Unfortunately, few projects have records and data on the real costs (operation, transaction and opportunity costs) incurred with these participatory learning processes. Some of the methodological difficulties in relation to social capital are common to wider research into poverty and livelihoods, including challenges of how to derive valid generalisations, to link different levels of analysis, incorporate diversity of livelihood components, especially over time, and how to understand the relationship with the macro context together with political economy analysis. The study underlines the extent to which social capital and its relationships to gender and vulnerability is still poorly understood. New interest in studying gendered social capital and social inclusion/exclusion processes in accessing technologies and linking farmers to markets and higher level institutions has emerged and will form our research agenda in the near future.

7 Contribution of Outputs

7.1 NRSP Purpose and Production System Output

Though the delivery of its two outputs this study provides evidence that social capital is an important asset upon which poor people who are largely dependent on the natural resource

base to draw in pursuit of their livelihood objectives for improving NRM. A major finding of this study is that the main outcome of increased social capital is producing more social capital. This is not tautological considering the different dimensions, types and mechanisms for activation of social capital. Results show there have been dramatic changes in structural and linking social capital, with only marginal effects on bonding social capital. Bonding social capital generated between kin and neighbours is very important for coping with poverty. However, it is the bridging and linking social capital that generates more dramatic and far reaching changes in NRM and livelihoods. of the study suggest that social capital can be not only productive, but also persistent. Social capital mechanisms and particularly byelaws implementation have also been important drivers of adoption of agroforestry technologies. Mature social capital has increased the ability of local communities to manage conflicts, minimize their destructive effects, and transform conflict situations into opportunities for mutually beneficial collective action . However, strengthening social capital has some downside and limits, and may increase burden to women and other categories endowed with less social, human and financial capitals.

7.2 Impact of outputs

As a follow-on to Project R7856, this project was intended to provide the evidence-base for the uptake and dissemination of the processes and approaches for strenthening social capital developed by the earlier project. Through its two outputs the project has delivered new knowledge to enable poor people dependent on the NR base to improve their livelihoods. Results show that strengthening social capital has had positive outcomes on at least three key components of sustainable livelihood assets: social, human, and natural cpaitals. At the community level, there were evidence of significant improvements in social capital expressed in terms of sustained participation in mutually beneficial collective action, participation in byelaw implementation, increased cooperation and compliance to byelaws, networking and liking with the local government structures and other rural service providers.

Results showed that levels of awareness of, for example, the byelaws developed in R7856 has improved considerably, along with participation of farmers in community collective actions related to the implementation of these byelaws. Household interviews and analysis of group records showed that more than 75% of farmers attended community meetings and events related to byelaws on tree planting, erosion control, and controlled grazing. Both women and men participated equally, but men tended to participate more where important decisions were to be made. 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. A key outcome of this type of communication is illustrated by the Karambo Tukoro policy task force members who won a district tender for providing facilitation services on institutional development to other groups in a different sub-county. Providing backstopping services to this group remains an important issue for follow up. Tangible outcomes of the community byelaws and PTF include adoption of NRM technologies and increased willingness to pay for technologies. The PTF also play an important role as an alternative community-level mechanism for managing conflicts over the use of natural resources. There are however some downside of social capital strengthening, particularly in relation to gender and vulnerability. Social capital alone has some limits to cope with vulnerability and to bring about long lasting changes in NRM and people's livelihoods.

7.3 Uptake Promotion

The second output focused on developing appropriate communication materials to be used in uptake promotion against selected target institutions. The assessment of the

communication needs of different stakeholders revealed that the project needed more active and interactive communication strategies with local stakeholders at the community level. Several community meetings were organized and eight community representatives were trained in leadership skills, community mobilization, communication skills and assertiveness, citizen participation, participatory planning, conflict management, gender awareness and other important aspects of social capital strengthening. These representatives were further mentored for a period of time. They are now able to carry out a number of functions within their communities. Several community meetings were organized and eight community representatives were trained in leadership skills, community mobilization, communication skills and assertiveness, citizen participation, participatory planning, conflict management, gender awareness and other important aspects of social capital strengthening. A key outcome of this type of communication is illustrated by the Karambo Tukoro policy task force members who won a district tender for providing facilitation services on institutional development to other groups in a different sub-county.

There is evidence of uptake of project results by research and development partners. For example, community visioning is now used routinely by Africare, CARE, Africa 2000 Network, and NAADS as an approach for participatory planning with communities. NARO is also using this approach for participatory diagnosis in its agricultural research and development centres. The community visioning guide (Sanginga and Chitsike, 2005) has been distributed to over 400 R&D professionals form 143 organisations in Uganda, Malawi, Kenya, Rwanda, Ethiopia, Zimbabwe, and Ghana. Requests of this guide are increasing and plans are underway to produce more copies for further distribution. AHI and CIAT Research Assistants, AFRICARE, Africa2000Network community development facilitators are also using AAR as a tool for participatory monitoring and evaluation of community activities. Byelaws formulation is now included in NAADS and some community based organisations operations in Rubaya sub-county.

Uptake of results of this study is also reflected in the validation report of he Lake Kivu Pilot learning site of the Sub-Saharan Africa Challenge programme (Bekunda et al., 2005) and programme development that explicitly inclusion of social capital and community byelaws as important aspects of integrated agricultural research for development (IAR4D). Specifically, there are two research hypotheses, namely the Farmer Association Hypothesis and the community leverage hypothesis. The Farmer Association Hypothesis states that "*Stronger farmer associations have increased bargaining power and the ability to influence markets and thus increase members' returns to investment, land and labor"*. The Community Leverage Hypothesis states that "*stakeholder empowerment and its resulting collective action encourage local government to develop more responsive policies toward agribusiness, land tenure and natural resource management*." A key objectively verifiable indicator related to the development and promotion of appropriate policy and institutional options explicitly states "At least X stakeholder/community groups successfully formulating and promoting appropriate byelaws by 2010".

The Pan African Bean Research Alliance (PABRA) that includes activities on strengthening local communities capacity to formulate and implement community byelaws for better natural resources management in its 2006-2007 workplan and programme implementation plan. Strengthening social capital has also become an important research pillar of the African Highlands Initiative (AHI). Analysis of responses to the recent call for competitive grant under the Association for Strengthening Agricultural Research in Eastern and Central Africa (AFRICA), shows that several concept notes, and subsequently research proposals explicitly sought to upscale and validate the methodology and findings in other parts of Uganda, Tanzania; Ethiopia, and Rwanda. Similarly, some new research projects specifically

include some aspects of this project's findings. These projects are:

- Making markets work for the poor: Unlocking opportunities for agro-enterprise diversification in Eastern and Central Africa. This project will be implemented in the Lake Kivu Pilot Learning Site (Uganda, Rwanda and DR Congo) of the Sub-Saharan Africa Challenge Programme and will explore, among others, mechanisms for strengthening farmers' organisations and other rural innovation systems to encourage participatory processes for linking with local government to develop policies that facilitate efficient marketing systems and promote sustainable natural resources management.
- Strengthening the Capacity for Research and Development to Enhance Natural Resources Management and Improve Rural Livelihoods in sub-Saharan Africa. This collaborative project between the Tropical Soil Biology and Fertility Institute (TSBF) and the Enabling Rural Innovation funded by the International Development Research Centre IDRC, has two outputs related to strengthening farmers' organisations and on participatory policy analysis and formulation to improve NRM. The project will be implemented in Uganda, Kenya, Malawi, Zimbabwe, Ghana and Burkina Faso.
- Enhancing watershed functions for improved productivity, sustainability and equity in the Lake Kivu Pilot Learning Site of the Sub-Saharan Africa Challenge Program. This proposal submitted for targeted funding by BMZ will be implemented in the Lake Kivu PLS of the SSA-CP. The project will promote institutional innovations and policy options for participatory planning and integrated watershed management.

For the scientific community, the project has produced three scientific articles (Annexes B, D, and E) which are international public goods. Other materials from this project will be widely shared with the international scientific community through publications in peer reviewed journals, and web posting.

8 Publications and other communication materials

8.1.1 Journal articles

Sanginga, P. Tumwine, J.; and Lilja, N.K. (2006 In press). Patterns of participation in farmers research groups. Agricultural and Human Values 23 (4)

Sanginga, P., Kamugisha, R. and Martin, A. 2006 In Press Conflicts management, social capital and Adoption of Agroforestry Technologies: Empirical findings form the Highlands of Southwestern Uganda. Agroforestry systems (.Manuscript AGFO12R1 Accepted 22 February 2006)

Sanginga, P., Kamugisha, R. and Martin, A. 2006 In Press The Dynamics of Social Capital and Conflict Management in Multiple Resource Regimes: A Case of the Southwestern Highlands of Uganda. Ecology and Society (Manuscript ES-2006-1698 Accepted 7 May 2006)

Sanginga, P.; Kamugisha, R.; Martin, A and Abenakyo, A. 2005. Motivations for collective action: gender and social capital in the highlands of southwestern Uganda. Paper prepared for the workshop on collective action and property rights. CAPRI 37pp

Sanginga P., Kakuru A, Kamugisha, R, Place F., Martin. A and Stroud, A (2005b) Bridging Research and Policy for Improving Natural Resource Management-Lessons and Challenges in the Highlands of South Western Uganda; Pp 247-266. In Stocking M, Helleman H and White R (2005) Renewable Natural Resource Management for Mountain Communities

Sanginga, P. and Chitsike, C., 2005b. The power of visioning. A handbook for facilitating the development of community action plan. Enabling Rural Innovation Guide #1. International Centre for Topical Agriculture: Kampala, Uganda

8.2 Institutional Report Series

Sanginga, P; Kamugisha, R; and Abenakyo, A. .**2006** Tracking Social Capital Outcomes and Sustainability of local policy initiatives.. Final Technical Report to the Natural Resources Systems Programme (NRSP) of the Department for International Development (DfID). www.nrsp.co.uk. - 49pp

8.3 Symposium, conference and workshop papers and posters

Sanginga, P.; Kamugisha, R.; Martin, A and Abenakyo, A. 2005. Motivations for collective action: gender and social capital in the highlands of southwestern Uganda. Paper prepared for the workshop on collective action and property rights. CAPRI 37pp

8.4 Reports and data records

8.4.1 Project technical reports including project internal workshop papers and proceedings

Kamugisha, R, Abenakyo, A., Muzira, R.; and Muhanguzi, D.2005 Monitoring the outcomes of byelaws and policy task forces CIAT-AHIXXpp. (Page numbers)

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10 Project logframe

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
Goal			
Improved hillside farming strategies relevant to the needs of marginal farmers developed and promoted	Natural resources management and agricultural productivity will be improved through strengthening social capital, decision-making and policy processes of local communities.	Reviews by programme manager. Reports of research team and collaborating/target institutions.	Political environmer (decentralisation system) in Uganda doe not change Programmes an budgets of targe institutions ar sufficient and prioritiz community-based NRM
Purpose			
Social capital and local institutions are strengthened to improve the adoption of NRM innovations and policies.	By October 2005, the organisational capacity of local communities for collective action, and participation in implementation of bylaws and NRM action plans improved. By October 2005, the performance and implementation of at least two byelaws, two village action plans and two policy taskforces are documented and disseminated to different audiences By December 2005, selected uptake promotion materials developed and disseminated to selected target institutions	Final Technical Reports and evaluation/ reviews by NRSP management Reports of project research team and collaborating/target institutions. Communication materials available to selected target institutions	Community dynamic are conducive t collective action i NRM Political events do nc interfere wit community dynamics Target institution contribute resource for uptake promotio and dissemination c research products
Outputs			
1. Tracking of outcomes, impacts and sustainability of social capital mechanisms, byelaws and local	1.1.By October 2005, the level of participation of different categories of farmers (women, men,	Final Technical report and scientific annexes, papers Process documentation and	Local governmer structures an local stakeholder contribute resources to th

policy processes evaluated and documented.	poor) in different task forces, and in the implementation of byelaws and village action plans has improved. 1.2.By October 2005, the performance, effectiveness, relevance and outcomes of at least two village action plans and two byelaws assessed and documented 1.3.By October 2005, conditions for sustainability and potential impacts of village byelaws taskforces is assessed '.	field reports Quarterly reports Functioning policy task forces at different levels	functioning of different taskforces. There are sufficient funds for continued involvement of project scientists
2. A communication plan and uptake promotion materials developed for selected target institutions	2.1.By May 2005, a communication plan developed with selected target institutions, including assessment of communication needs 2.2.By October 20005, at least one communication product (lessons learned and generic findings) developed for each of the selected target institutions and by December 2005, disseminated to various stakeholders 2.3.By October 2005, at least 2 journal papers drafted and submitted to international journals	Copies of communication materials (policy briefs, guides) Copies of journal articles submitted to international journal	Key target institutions willing to contribute resources for uptake promotion of research products
Activities		**Milestones (and budget if budgeting by Activity)**	
Output 1: Outcomes, impacts and sustainability of strengthened social capital in Kabale District'			

Activity 1.1. Tracking the performance, effectiveness and outcomes of at least two bye-laws	1.1.1. Facilitate community-meetings and build consensus on two byelaws to track 1.1.2. Identify community level and local indicators for monitoring and evaluating byelaws 1.1.3.Establish a community-based tracking system to monitor and evaluate byelaws. 1.1.4. Conduct stakeholders' interviews and case studies on the selected byelaws 1.1.5. Facilitate feedback meetings to validate findings and results, share lessons and discuss plans for sustainability	
Activity1. 2. Tracking the activities, performance and conditions for sustainability of at least two task forces at two levels (village and sub-county)	1.2.1. Identify performance indicators for task forces 1.2.2. Conduct self assessment of different task forces 1.2.3. Conduct in-depth interviews and case studies on the selected taskforce 1.2.4. Assess community and stakeholders' perceptions of the different taskforces and 1.2.5. Mapping the outcomes of different task forces in terms of participation, representation, roles and responsibilities, partnerships, etc. 1.2.6. Organize feedback meetings to validate findings and results, share lessons and disseminate findings	
Activity 1.3. Tracking the level of participation performance, and the outcomes of at least two village action plans	1.3.1. Establish a community-based Participatory monitoring and evaluation system, including indicators for tracking participation and performance of village action plans 1.3.2. Document the process of implementation and participation in the implementation, review and evaluation of village action plans. 1.3.3. Conduct case studies on the effectiveness and outcomes of village action plans. 1.3.4. Facilitate village exchange visits and knowledge sharing mechanisms between villages and stakeholder groups.	
Output 2. Communication plan and appropriate uptake promotion materials developed		
Activity 2.1. Develop a communication plan with selected target institutions	2.1.1. Identify key target institutions and conduct a stakeholder analysis to determine their uptake promotion pathways 2.1.2. Determine communication needs of various target institutions 2.1.3. Develop a communication strategy and buy-in by target institutions	.

2.2. Develop and disseminate appropriate communication materials for the selected target institutions	2.2.1. Drafting of communication materials 2.2.2. Conduct stakeholder workshop for pre-testing of communication materials and incorporation of feed back from target institutions and stakeholders 2.2.3. Assess the effectiveness of different communication products of R7856 2.2.4.Develop and submit scientific papers for submission to peer reviewed international journals 2.2.5. Prepare and submit Final Technical Reports	
	Pre-condition	Political events (constitutional review, referendum) do not interfere with community processes and dynamics

11 Keywords

Byelaws, collective action, gender, participation, policy, social capital, sustainability, visioning, Uganda

12 List of Annexes

12.1 Annex A Scientific Report: Tracking Social Capital Outcomes and Sustainability of Local Policies in Natural Resources Management

12.2 Annex B: Conflicts Management, Social Capital and Adoption of Agroforestry Technologies: Empirical findings from the Highlands of Southwestern Uganda

12.3 Annex C : Developing Indicators for Monitoring and Evaluating Social Capital And Local Policy Outcomes

12.4 Annex D: The Dynamics of Social Capital and Conflict Management in Multiple Resource Regimes: A Case of the Southwestern Highlands of Uganda

12.5 Annex E : Patterns of Participation in Farmer's Research Groups

12.6 Annex F: Project Database of case study interviews