NATURAL RESOURCES SYSTEMS PROGRAMME

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Strengthening social capital for improving policies and decision-making in natural resources management

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NATURAL RESOURCES SYSTEMS PROGRAMME

FINAL TECHNICAL REPORT - R7856

ANNEX D

Facilitating Participatory Processes for Policy Change in Natural Resource Management: Lessons from the Highlands of South-western Uganda

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ABSTRACT

Despite the recognition that policy processes are important for sustainable natural resources management (NRM), there is concern that agricultural research and technology development have not been reflected in policy change, nor have they affected decision-making processes of wider communities. Most policy research focuses on policy analysis, often at the macro, national level, ignoring the much more difficult and rather murkier part on how to get policies implemented and adopted by users and how to get the intended beneficiaries - small-scale resource poor farmers, to influence policies in NRM.

This paper reports results of a participatory policy action research process that aimed at strengthening local-level processes and capacity for developing, implementing and enforcing local policies and byelaws to improve the adoption of NRM technologies in Kabale, Uganda. The action research was built around six key components: (i) community visioning and planning; (ii) participatory policy analysis; (iii) policy dialogue linking bottom-up processes to higher level policy processes; (iv) policy learning events; (v) policy process management, and (vi) supporting policy action at different levels. As a result of this process, the pilot communities have formulated and implemented a number of integrative byelaws on soil erosion control, tree planting, animal grazing, wetlands management, bush burning and food security. Results suggest that recent decentralization reforms in Uganda provide significant opportunities for research to influence and support the process of policy change in NRM. To influence policy change in NRM, the paper suggests a five "INs" approach: (i) strengthening local institutions; (ii) providing information; (iii) linking byelaws to NRM innovations; (iv) promoting incentives, and (v) building network of influence. Influencing policy is, however, a long process that needs perseverance and commitment, and a sustained programme of interventions by multiple stakeholders.

Key words: *Byelaws, decentralisation; NRM; action research, policy process, social capital, Uganda*

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1. Introduction

Natural resource management (NRM) is becoming a relatively new and expanding thrust in policy research on African agriculture. Many of these studies have concluded that if natural resources are to be protected against the risk of destruction, it is essential that governments devise a range of policy instruments that can influence behaviour for the adoption of technology innovations and institutions that promote sustainable management of natural resources to alleviate poverty (Omamo, 2003; Scherr et al., 1996; Shiferaw and Holden, 2000, Egulu and Ebanyat, 2000). The new paradigms of integrated natural resource management "INRM" (Sayer and Campbell 2001), sustainable livelihoods approaches "SLA" (Carney, 1998; Scoones, 1998); and integrated agricultural research for development "IAR4D" (FARA, 2003) emphasize the need to broaden natural resource management (NRM) research from technology solutions to include socio-economic and policy dimensions, with emphasis on participatory approaches that redefine the role of scientists, farmers and other stakeholders. All these approaches explicitly recognize that policy support is an essential ingredient for widespread adoption and scaling up of NRM technologies and innovation.

However, despite the recognition that policy processes are important for sustainable livelihood outcomes and natural resources management, there is concern that NRM research and technology development have not been reflected in policy change, nor have they affected decision-making processes of wider communities (NRSP, 1999). Most research on agricultural policy has been concerned with macro policy studies at national and international levels. There is an implicit assumption that if research results are taken on board by policy-makers, planners at the higher levels, there is a high probability that research results will translate into policies that can be implemented at lower levels. In their recent review of policy research on African agriculture, Idachaba (2001) and Omamo (2003) observed that agricultural researchers and policy analysts have failed to put Africa's agricultural problems on the policy agenda in more than abstract fashion. Idachaba (2001: 46) contends that policy analysis is the easier part, "the much more difficult and rather murkier part is to get the policy implemented and adopted by users; that is to get the results of policy analysis and policy recommendations into political decisions by governments". There is still a critical gap in policy research to provide insights for change in local communities (Scherr et al., 1996). Omamo (2003) recommends a different approach to policy research focusing on piloting action research in case studies of innovative approaches for identifying convincing '*how to'* answers. Other studies (Scherr et al., 1996; Idachaba 2001; Keeley, 2001; Vincent, 2003; Scoones and Thompson 2003) have argued that participatory research approaches could make a significant contribution towards this critical, yet missing area of policy research.

For more than two decades, participatory methodologies have proved effective in enabling people to take greater control of the development process. However, with few exceptions, efforts have not focused on increasing local participation in policy review and formulation (Scoones and Thompson 2003). In a recent summary and reflection based on field experiences in participatory research in NRM, Vincent (2003) observed that there is still a critical gap for participatory research to address wider policy initiatives for transforming NRM, or how to build new policies to support NRM. Recent decentralisation efforts in Uganda have shown promising improvement in the participation of local people and other stakeholders in the policy decision-making process. These changes have brought some impressive results, creating a fundamentally different environment for an open and participatory policy and decision-making at the lower local community level (James et al., 2001). However, despite such progress, there is concern that decentralisation has not resulted in improvements in the management and use of natural resources, nor has it affected the capacities and decision-making processes of local communities over the management of natural resources.

This paper reports results of a pilot participatory policy learning and action research project aimed at strengthening local-level processes and capacity for developing, implementing and

enforcing local policies and byelaws and other local policies to improve the use and management of natural resources in the south-western highlands of Uganda. The main thrust of this action research is supporting and facilitating the integration of participatory approaches to policy decision-making by building and strengthening local community capacity to initiate, formulate, review and implement policies and byelaws that promote the adoption and wider impact of improved NRM technologies. The rest of the paper is organized into five sections. First we describe the research setting and its institutional and policy framework. The results of the application of the framework are presented in five points based on the operational framework for participatory policy action research: community visioning and action planning, participatory byelaw analysis, policy learning events; and policy dialogue linking bottom-up and top down processes, mechanisms for policy process management and for supporting policy action. The implications for policy research in NRM are discussed in the concluding section.

2. The research context and setting

2.1. Setting

The action research was conducted in four pilot communities in Kabale district in the south-western highlands of Uganda. Kabale is a mountainous district (1500 to 2700 masl) characterized by semi-permanent bench terraces along the contours of the hills, and seriously fragmented arable lands (ranging from 0 to 38 small plots, and average size of individual plots of 0.1 and 0.7 acres). The degree to which fragmentation appears on the landscape is deemed excessive, and has been found to impede incentives for better management of distant plots, and makes collective action on soil conservation and management efforts exceedingly difficult (Bamwerinde and Place 2000, Raussen et al.2002). Many of the old terraces have seriously deteriorated, and as a result, soil fertility decline and erosion are serious problems. Results of a participatory field assessment of land degradation in four pilot communities in the Mugandu-Buramba watershed estimated that about 90% of the watershed land is affected by erosion due to slope, population pressure, deforestation, poor farming and vulnerable soil (Mbabazi et al. 2003).

Kabale is one of the eight benchmark sites of the African Highlands Initiative (AHI). AHI was established in 1995 as a CGIAR ecoregional program to focus on the issues of land degradation and agricultural productivity in the densely populated highlands of Eastern Africa. AHI's guiding philosophy is a client-driven approach using participatory methods and an effective research-development continuum to foster farmers' innovation and collective action for designing and disseminating appropriate, integrated technologies and innovations for improving watershed management. Recognizing that policy support is always needed for the adoption of NRM innovations, AHI established a policy-working group to increase the policy relevance of research at the local level, and to design alternative policy instruments to facilitate adoption of NRM technologies (AHI 1999). Kabale is one of the two AHI benchmark sites where participatory policy experiments are being tested to improve watershed management.

2.2. Institutional and policy framework

Decentralization in Uganda is one of the most ambitious reforms of local governance in Africa. The decentralization process was initiated in 1986 and culminated in the 1995 Constitution and the 1997 Local Government Act which provide the legal framework for the participation of local communities in policy-making. The mechanisms of decentralization are established and functioning, with the structure of a five-tier system of local councils and local government structures, a bottom-up planning process, and powers to collect and disburse local revenue (James *et al.,* 2001), develop and implement byelaws and local policies for land use, environmental management and agricultural production.

Table 1. Decentralised structures in Uganda: levels and main functions

Local Council Level	Composition	Functions
Local Council 1: Village (composed of more or less 50 households	9 members, at least 4 women	• Assist in maintaining law, order and security • Initiate, support and participate in self help projects • Recommend persons for local defence units • Serves as communication channels with government services • Monitor the administration of projects • Impose service fees • Collect taxes • Resolve problems and disputes • Make byelaws
LC 2: Parish (composed of 3-10 villages)	• Depending on the number of villages elected from the village, at least 4 women	• Assist in maintaining law, order and security • Serves as communication channels with government services • Initiate, support and participate in self help projects • Monitor the administration of projects • Resolve problems and disputes
LC 3: Sub-county (Composed of 2-10 parishes)	• Depending on the number of parishes, 1/3 women • 2 youth • 2 persons with disabilities • elected councillors from parishes	• Local government • Enact byelaws • Approve subcounty budget • Levy, charge, and collect fees and taxes • Monitor performance of government employees • Formulate, approve and execute sub-county budgets • Resolve problems and disputes
LC 4: County (composed of 3-5 sub-counties)	• 5, chairpersons or vice-chairperson from each subcounty	• Advise district officers and area members of Parliament • Resolve problems and disputes • Monitor delivery of services
LC 5: District (composed of 3-5 counties)	• 36 members • 12 women councillors • 2 youth • 2 people with disabilities • 19 elected councillors	• Exercise all political and executive powers • Provide services • Ensure implementation of government policies and compliance with it • Plan for the District • Enact district laws and ordinances • Monitor performance of government policies • Levy, charge and collect fees and taxes • Formulate, approve and execute district budgets

Source: Adapted from Raussen 2001

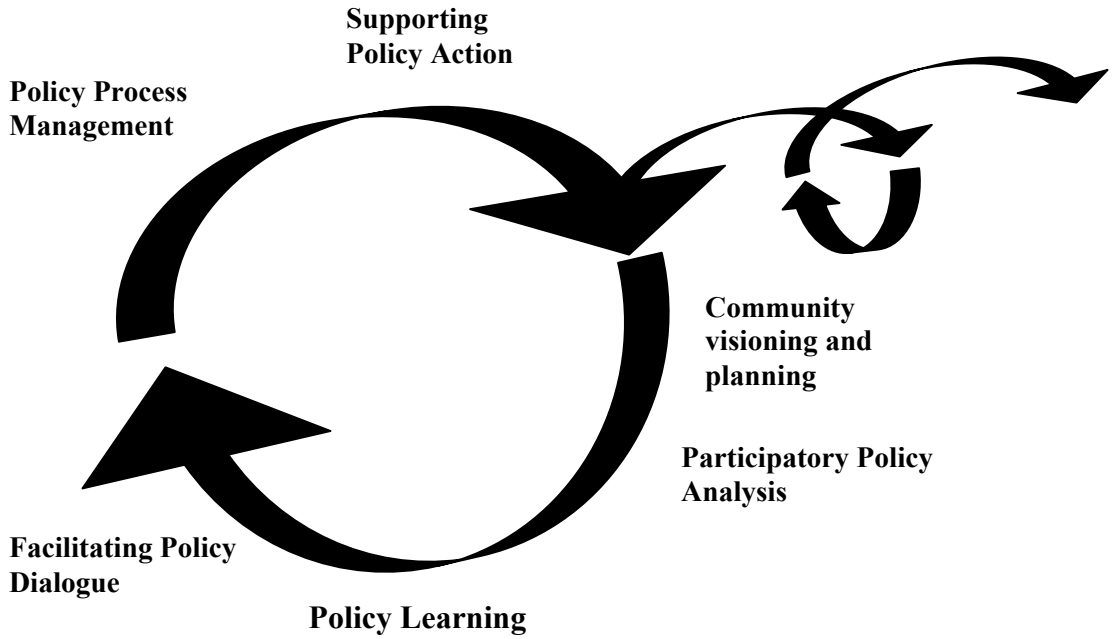
At the base of the local government structure, the local council or LC1 (village of about 50-100 households) consists of all adults residing in a particular village who elect a nine-member village local council executive committee. Beyond the village or LC1, in ascending geographical size, there are parishes (LC2), sub-county or *gombolola* (LC3), county (LC4) and district (LC5) councils. The sub-county level (LC3) is the basic unit of local government,

both political and administrative. The district (LC5) is the highest level of local government and links with central government. The provision of local government elections guarantee widespread representation at the various councils and include quotas by gender, people with disabilities, and youths. For example, at least one-third of the council members must be women, an affirmative action to empower women and promote gender equity.

3. Results and discussions

The project's approach is grounded in the tradition of action research (Reason and Bradbury, 2001; Dick 2002), a process that pursues action (policy change) and research (understanding of policy process), at the same time learning by doing (participatory natural resources management). The results of the study are discussed following the key components of the framework (figure 1) built around the following key components: i) community visioning and planning; ii) participatory policy analysis, iii) participatory policy learning, iv) policy dialogue, v) supporting policy action, and vi) policy process management.

Figure 1: Operational framework for participatory policy action research



3.1. Engaging with rural communities and developing visions of desired future conditions

Most participatory research projects routinely start with a participatory rural appraisal (PRA) exercise to identify problems and constraints in the farming system, and as an entry point into communities. Recently, PRA has come under criticism for being superficial, extractive, transitory, unable to initiate change and build local capacities, and lacking adequate process of follow up. At the heart of initiating participatory policy analysis and action, there was an intensive and iterative process of community visioning to stimulate collective learning and articulation of collective visions of desired future conditions. One important tool for community visioning is the "river code" (Hope, Timmel and Hodzi 1984). The "river code" is a

play used for stimulating self-awareness and establishing dialogue for discussing participation, social change and approaches to development. It helps farmers and rural communities to realize the potential for change, and the need to be cognizant and understand the forces that can facilitate or constrain change, and define workable strategies for seizing opportunities and dealing with potential challenges. An important principle of this approach is that it starts with an analysis of strengths and opportunities, rather than problems and constraints.

The river code is based on the SARAR technique (The World Bank, 2000), which stands for the following five attributes:

- **Self-esteem**: a sense of self-worth as a person as well as valuable resource for development;
- **Associative strength**: the capacity to define and work toward a common vision through mutual respect, trust and collaborative effort;
- **Resourcefulness**: the capacity to visualize new solutions to problems, and the willingness to take risks;
- **Action planning**: combining critical thinking and creativity to come up with new, effective and reality-based plans in which each participant has a useful and fulfilling role; and
- **Responsibility**: for follow through until the commitments made are fully discharged and the vision of benefits achieved.

Visioning using SARAR techniques has the advantage of facilitating an internal drive for change, starting with collective analysis of opportunities, strengths and community assets and bringing different perspectives for achieving collective visions. Combining SARAR with creative participatory tools such as community resources and social mapping is useful for fostering and strengthening community skills in systematic action planning, monitoring and evaluation. Through this process, all the four pilot communities have developed action plans with desired outcomes, explicit objectives, activities, roles and responsibilities of different stakeholders and partners. One of the key components of the community action plans clearly specified the need to strengthen communities' capacities to review existing byelaws, formulating new ones to facilitate collective action in the implementation of action plans for better management of watershed resources. It was therefore important to initiate participatory processes for analyzing the different byelaws to identify the key problems in their implementation and identify opportunities and incentives for their effective enforcement.

3.2. Participatory byelaw analysis

In this paper, we use the term policy in its broad sense to refer to laws, rules and regulations and their implementation resulting from public (state) or collective decision-making (Thomson 2001, Means *et al.* 2002). Policies can be generated and operate at different levels: international, national, regional, district and local levels. In this study, we are particularly concerned with those local-level policies and community regulations usually referred to as byelaws. Byelaws are rules made by lower local councils (LC1 and LC3) and provide the local policy guidelines to be followed in sectoral developments, such as agriculture and natural resource management. These byelaws or local arrangements for natural resource management are now receiving greater attention as a viable alternative for enforcing government policies and rectifying their inefficiencies in agriculture and NRM.

Across all the four pilot communities, the process of community planning identified six general byelaws in agriculture and natural resource management (soil and water conservation, food security, tree planting, bush burning, controlled grazing, and swamp reclamation bye-law). Each of these byelaws has specific regulations and enforcement mechanisms. The study found that there was a considerable awareness of existing byelaws and their different regulations and implementation mechanisms. However, the majority of

these byelaws were formulated before independence by British colonial administration without local participation, with strict enforcement mechanisms, often using force and coercion. The majority of farmers were not satisfied with their implementation mechanisms, and many of the byelaws are now outdated.

Using a number of participatory techniques, we encouraged farmers to think creatively about potential arrangements to encourage compliance and equitable implementation of byelaws, by constantly asking questions such as: For whom is this a problem? Who benefits from the byelaw and how? Who loses out from the byelaw and how? Who will have difficulty in complying and why? What mitigating arrangements can be introduced for strengthening byelaw implementation?

Table 2: Knowledge and assessment of the effectiveness of selected byelaw regulations

Details of the regulation	Percentage*	
	Effective	Not effective
Construct bunds across the slope parallel to the contour	77.8	19.0
Plant appropriate vegetation on the bunds	63.5	27.0
Construct barriers guided by extension worker	30.2	54.0
Not planting annual crops on steep slopes	28.6	27.0
Planting crops along the contour	34.9	49.2
Demarcating two agricultural plots with mark stones	81.0	14.3
Paths, cattle tracks and access roads protected against erosion	17.5	30.2
Any person who cuts a live tree shall plant two and ensure they are protected and looked after	68.3	31.7
Farmer shall ensure livestock graze only when herded	92.1	08
Livestock shall graze in own piece of land except with consent of land owner	74.6	25.4
Animals shall not take water from same point used to draw water for domestic uses	92.1	08
Pigs shall not graze where other animals graze	79.4	17.6
No grazing in crops and farmers whose crops are destroyed shall be compensated	96.8	03.2
No person shall set fire to a bush or part of it without authorisation	85.7	07.9
In the event of fire outbreak all able bodied members of community will participate in extinguishing it	82.5	17.5

** Percentages do not add up to 100%. Some regulations were not known to farmers.*

The analysis revealed that some categories of farmers have difficulties in complying with many of the existing byelaws. These include older men and women, widows and orphans with limited family labour or money to hire labour and to buy implements like spades and hoes needed to establish conservation measures. Farmers with alternative sources of income, which are more lucrative than farming, may not have time for putting up conservation structures on the plots they are using for food security. It was also revealed that small livestock owners, especially women, who don't own grazing land or large farm sizes

will have problems complying with the controlled grazing byelaw. The byelaw may force the poor to sell their livestock, and will increase poverty, conflicts and hatred among farmers.

3.3. Participatory Policy Learning

As observed by Norse and Tschirley (2000), in many cases policy makers don't know what kind of information they can reasonably expect or ask for from the R&D community. For example, we found that the majority of political leaders and policy-makers were not aware of the existing byelaws and NRM policies, their regulations and implementation mechanisms, and the process of formulating byelaws. A proactive role was essential in assessing the information needs of policy makers and developing effective communication strategies for guiding and informing debate and fostering public understanding of the policy process. The project initiated a series of policy stakeholder workshops and other learning events (seminars, field visits, documentation) to increase the relevance of research to policy makers, to communicate research findings to policy makers, to catalyse local political support for positive and sustainable NRM. Over the four years of the project, we have facilitated a dozen of policy stakeholder workshops and seminars. In addition to these regular workshops and policy meetings, one strategy has been to organize and facilitate field visits to identified success cases. This has had a much bigger effect to convince policy makers, local leaders and farmers by seeing things with their own eyes, and sharing of experiences with more innovative farmers. We found that this process has been very useful not only for exposing policy makers and farmers to innovative NRM technologies, and research results but also to build their confidence and capacity to engage in policy dialogue with other stakeholders.

Another important aspect of policy learning was to use policy narratives and developing NRM scenarios. These have the advantage of simplifying complex problems and making them amenable to better understanding and decision-making (Keeley, 2001). For example, the soil fertility loss narrative has been a powerful strategy for getting policy makers learn about and supporting agroforestry policies and byelaws. These types of narrative, coupled with field visits to research stations and on farm demonstrations, have been useful for getting policy support for the tree planting and agroforestry byelaws.

3.4. Promoting and facilitating policy dialogue:

Despite considerable progress in local government reforms, it is only to a limited extent that policy makers seek information from key stakeholders in designing and formulating policies. James et al. (2001) observed that decentralization in Uganda is still a relatively young process, and does not yet constitute a genuinely participatory system of local governance. Farmers and local communities are often limited to simple representation and the small-scale poor farmer is often forgotten.

Effective policy dialogue must be based on effective and sustainable local institutions (or mature social capital) capable for engaging local communities directly in the articulation of their needs, analysis, design and implementation of NRM policies and innovations. The presence of social capital is a necessary pre-condition for the participation of resource-poor farmers in policy formulation and implementation, in research and development activities, and for the adoption of NRM innovations that require collective action and collaboration.

The main thrust of this action research is supporting and facilitating the integration of participatory approaches to policy decision-making by strengthening local-level processes and capacity for developing, implementing and enforcing byelaws and other local policies to improve natural resources management. At the community level, the policy dialogue seeks to explore the multiple perspectives of resources users with the aim of gaining credibility and support of different categories of farmers through more inclusive and consultative processes**.** To make policy dialogues more effective and participatory, some specific efforts were necessary to strengthen the weakest stakeholders-the farmers, to be effective partners in the

policy dialogue with district-level stakeholders. We used a range of participatory techniques and other adult learning methods (The World Bank, 2000) for engaging and empowering local communities directly in the articulation of their policy needs, and in the analysis, design and implementation of policies and innovations. This has involved coaching and mentoring farmers' representatives to break passiveness and increase their assertiveness and confidence in articulating their policy needs and collective NRM visions.. It has been particularly insightful to sequence policy dialogues with farmers' exposure or exchange visits and with interactions between the different communities where they harmonise their policy needs, and demands. This also provides a good opportunity to share experience, rehearse presentations, and strategize interventions to the policy dialogue. As a result, the most interesting moments during the policy dialogues and stakeholders' workshops are when farmers articulate their community visions and experiences with the process of reviewing, formulating and implementing byelaws.

Despite progress made at the village level, it was recognised that the strengthening of community level processes cannot stand on its own. The link with local government structures is a critical element to any policy process. The subcounty and the district constitute critical aspects of the decentralisation system as they have important political and administrative powers to make byelaws, prepare development plans, budgets and allocate resources. The subcounty is the basic political and administrative unit of local government that enacts byelaws and resolves disputes. This level has good potential for stimulating local organisations and democratic processes to deliberate and influence policies from bottom up. The different byelaws initiated at the village level were presented and debated at the subcounty level for harmonisation and better co-ordination before they were enacted into byelaws.

The District level dialogues are usually high profile events aimed at raising and refocusing the policy debate. The focus of the project is on building a network of actors who can influence the policy process with messages tailored and focused to gain attention and support. Five policy stakeholder workshops were held over the three years and brought together a large number of participants (80-100), district leaders and councillors, members of parliament, subcounty councillors, local government technical services, research and development organisations, and farmers representatives, and in the later years representatives of neighbouring districts and national institutions. The Policy workshops and task forces offer a good opportunity to achieve closer relationship between the different stakeholders in policy formulation process, and for increasing the relevance of R&D to the needs of political leaders and policy makers

3.5. Policy process management:

The thrust of the project is that farmers and local stakeholders are likely to see byelaws and other decisions they have participated in making as legitimate, addressing their own needs and constraints. Such byelaws are likely to be more effective and implemented by the communities, drawing on social capital mechanisms. However, a byelaw cannot be only a statement of intent. It needs to specify the institutional mechanisms that would translate the byelaw into practice, monitoring their implementation, reporting and sanctioning non compliance. The project uses three mechanisms for managing the process of byelaw formulation and implementation. These mechanisms are complementary and feed into one another. They include bottom-up community-level inclusive processes; subcounty-level policy processes and district level policy stakeholders' task force.

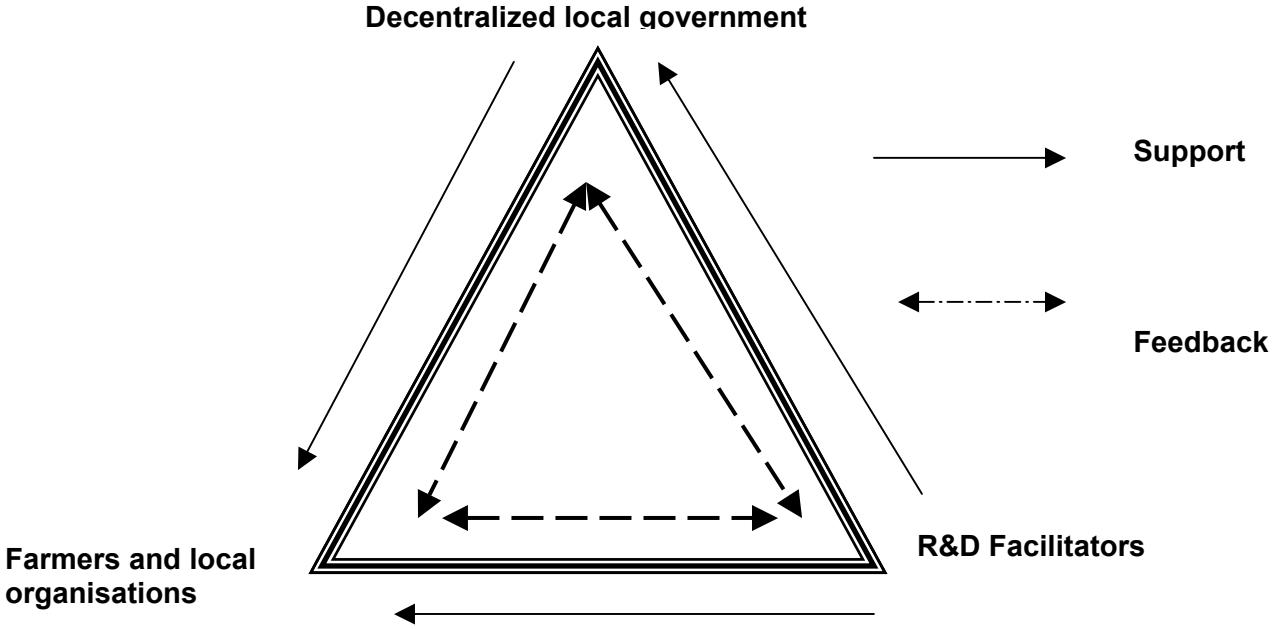
At the community level, the project initiated the formation and facilitation of village-level byelaws committees. The formation of these committees followed a more inclusive and participatory process for electing the committee members and defining their roles and responsibilities, as well as mechanisms for consultation and accountability. The formation of

village byelaws committees followed a process that was open and inclusive of all social categories in the community. In general, a village byelaw committee or policy task force could have between 5-8 elected and appointed members with considerable representation of women (at least 40%), and local government officials. The roles and responsibilities of the byelaws committees include: initiate and facilitate the review of existing byelaws, and formulation of new ones; facilitate the implementation of byelaws turning rules made into use, monitoring and reporting implementation, reporting non-compliance and linking with higher-level policy institutions and development organisations.

It is important to note that where the byelaw committees are integrated into other forms of social organisation, and where the local council (LC) was supportive and part of the process, there have been many more opportunities to discuss byelaw issues. In communities where there are farmers groups working on agriculture and NRM, they usually have weekly meetings for the group. For example, in Muguli village, the byelaw committee is a part of a community group working on natural resource management and reports at each community group. The chairperson of the Village local council (LC1) and a number of LC1 executive are members of the community group with different responsibilities and positions in the group.

The management of the policy process is by a skilled community development facilitator to strengthen the self-organizational capacities within communities, stimulating collective analysis of byelaws and local policies, and motivating and facilitating people to participate in policy learning process,

Figure 2: Policy Task Force Critical Triangle of the tripartite relations of key actors in NRM



Source: Adapted from Catacutan *et al.* (2001)

At the subcounty and district levels, the policy task forces are modelled to the "landcare triangle" (Figure 2) of the tripartite relations of key actors in NRM: farmers, local government, and R&D technical facilitators (Catacutan *et al.* 2000; Garrity *et al.* 2000). These task forces help create space for constructive exchanges and dialogue between local community and local government as well as other key policy stakeholders. They also serve as a kind of steering committee to follow up plans, and monitor implementation of the project. These task

forces, usually (but not always) chaired by the local council leader and comprising of local NRM champions and district leaders have been instrumental in building networks of influence for influencing policy change and supporting the implementation of byelaws formulated by local communities.

3.6. Supporting Policy Action

As a result of this process, the pilot communities have reviewed and formulated a number of byelaws for improving agricultural production and natural resources management. These include byelaws on soil conservation and erosion control; on tree planning, on controlled grazing, drinking and wetlands management. These byelaws were debated at the subcounty and harmonised for their general application to other villages and parishes. Sequencing policies was important. Many policies and byelaws have failed because they tried to do so much too soon, with little time of efforts to learn by doing. Piloting byelaws in selected communities offer policy makers, research and development agents and other stakeholders the opportunity to test the implementation of policies and byelaws, and their effectiveness in terms of sustainable NRM practices before expanding to other areas.

For example, the soil and water conservation byelaw states that:

- Nobody in the village is supposed to clear land for cultivation, whether a resident in the village or not, on a slope where erosion can easily take place, without establishing trenches. Nobody in the village is supposed to cultivate his or her plot without putting a trench and planting stabilisers like elephant grass.
- Areas that do not accommodate trenches or where trenches cannot be accommodated, elephant grass and legume grasses to act as stabilisers should be planted.
- Every member of the community who accesses water from the community source is supposed to participate with the rest of the community in cleaning and fencing on an agreed routine and timetable.
- Any member in the village who wants to destroy a bund (Enkkiigo) should do it in the presence of a neighbour.
- Nobody in the community should wash near the source of water and anybody in the community who has land near the source of water or spring should leave some metres (1-2) before cultivating. And anybody who possesses land near a road reserve or where there is a trench or community path should leave at least 1 or 2 metres before starting to cultivate.
- Anybody in or outside the community who is to hire land from the owner or neighbour for cultivation should be able to first negotiate the conditions of hire and be able to abide by the rules and byelaws set by communities. Anybody in the village who attempts to exchange land with a neighbour in the village should be able to agree with the already formulated policies in the communities/villages.

The tree planting byelaw

- Anybody in the village who cuts a tree should at least plant two and make sure that the existing ones are well protected.
- If any member of the village is to plant trees, they should plant only agroforestry trees like *Calliandra*, *Alnus* and *Grivellia* which add fertility to the soil and reduce erosion. They should replant the one that existed after failing to get agroforestry trees.

Some of these byelaws have been implemented with different levels of success in the four pilot communities. As a result of village policy task forces formulating and implementing byelaws, a total of 480 farmers in the pilot communities have established trenches and

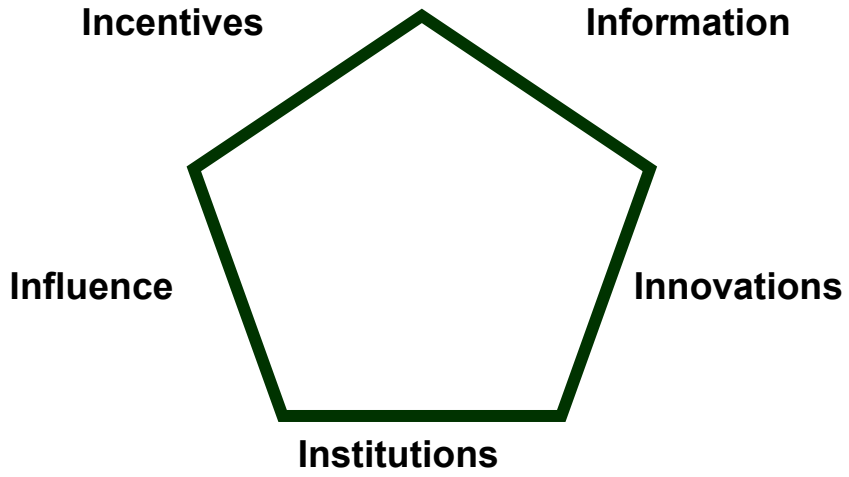
associated soil and water conservation measures. However, more efficient technologies for stabilising trenches and controlling soil and water run off need to be promoted. It was also reported that setting bush fires in the pilot communities significantly reduced during the last dry season, compared to previous years and other villages not involved in the policy action research process. These achievements have been attributed to the establishment of byelaw committees and their role in catalysing community participation in the formulation and enforcement of byelaws and sensitisation through meetings in the pilot communities. It is also important to identify key points of leverage, and recognize short-term opportunities associated with related legislative calendars, planning and budgeting activities, changes in key leaderships, political appointments and government personnel.

It is important to note that a constraint to effective byelaw implementation was the lack of inputs and technical innovations.

4. Discussion and Lessons learned

The main thrust of this action research was supporting and facilitating the integration of participatory approaches to policy decision-making by strengthening local-level processes and capacity for developing, implementing and enforcing byelaws and other local policies to improve natural resources management. Results of this action research suggest that with current decentralisation in Uganda, there are significant opportunities that research and development can utilise to influence policies, and to translate research results into policy and decision-making of wider communities to accelerate wider-scale adoption and dissemination of NRM technologies. Drawing from Barrett et al. (2002), the paper suggests a five "INs" approach (i) strengthening local institutions; (ii) providing information; (iii) linking byelaws to NRM innovations; (iv) finding and promoting incentives , and (v) building a network of influence as effective mechanisms that research and development organisations can use to influence policy action for sustainable NRM. We briefly discuss each of the five elements.

Figure 3: The Five "INs" Model for policy change in NRM



4.1 Strengthening institutions (local institutions and local government

Results of this paper show that to be effective, decentralization must be supported by strong local institutions or mature social capital. Pretty (2003), Uphoff and Mijayaratna (2000), Woolcock and Narayan (2000) and many others have shown that social capital lowers the cost of working together and facilitates cooperation, trust, and collective action. Therefore strengthening social-capital i.e. the self-organizational capacities within communities, and create conditions in which local people are able to formulate, review, monitor and implement

appropriate byelaws, and engage in mutually beneficial collective action. One key achievement of this process has been the establishment and functioning of village byelaws 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 bye-laws 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, resources mobilization, 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, organizing collective action among members and extending relations and linkages with external organisations. They are also increasingly taking the lead in catalysing the development process within their communities, and are increasingly making demands to R&D organizations

Many other recommendations to make byelaws more effective require capacity building of different stakeholders, both local communities and decentralized local government structures. This is a significant role that research and development (R&D) institutions can play to facilitate the implementation of policies and byelaws, and improve the adoption of NRM technologies. Building on the strengths and opportunities of local institutions is essential for unleashing the potential of local communities to develop collective long-term visions of desired future conditions, and realistic plans for achieving them. Research and development have a role to facilitate local communities to articulate their visions and engage in policy dialogue. However, to be effective, local level processes and institutions must be supported by high-level government institutions and policy processes. Policy dialogue is facilitated through effective mechanisms to link bottom-up, community level processes that must be complemented and supported by high level institutions and political leaders.

In a decentralised system, the most effective voices in reaching policy-makers are those of the elected local councillors. The inadequacy of human capital at the different levels of local government is a key constraint to policy formulation and implementation. Researchers can have an important influence on policy by helping to build the capacity of local councillors, helping their understanding of the situation, giving them credible data and evidence, and strengthening their confidence. Tailor-made capacity building events targeting those who make and implement policies are critical to have any sustainable policy change. Some of the needs for training identified during one of the policy stakeholder workshop include leadership skills, communication, participatory planning, conflict management, policy process, and as well as technical NRM issues.

4.2. Providing Information:

The study revealed that majority of policy makers have a limited understanding of the policy process, and of policies and byelaws they are supposed to implement. In many cases policy makers don't know what kind of information they can reasonably expect or ask for from the R&D community. It was observed that research results are like any other products that need to be marketed to be used. However, more often researchers rely on more passive communication channels to reach policy makers, producing policy briefs and other technical reports that policy makers and political leaders don't read. The language of academic researchers is frequently inappropriate to a policy and development audience. To influence policy change, a more proactive communication strategy and effective communication skills are essential to influence policy. Researchers need to develop alternative innovative communication and information strategies and processes in targeting people who make, influence or implement policy. Some powerful means used in this study are tailor-made

policy learning events (workshops, seminars, videos, exposure visits, field visits) that aim at disseminating NRM best practices or technologies, share lessons of experiences; and expose policy makers and other stakeholders to existing practices and knowledge that improve natural resources.

An important consideration in communicating with policy makers is opportunistic timing: If researchers wish to influence policy, they must be able to diagnose the relevant policy environment to identify key points of leverage, and recognize short-term opportunities associated with related legislative calendars, planning and budgeting activities, changes in key leaderships, political appointments and government personnel.

4.3. Linking byelaw to NRM innovations:

It was evident that byelaws need to be supported by appropriate technologies that can increase agricultural productivity for resource-poor farmers with diminishing land resources. For example, the soil and water conservation byelaw emphasises the use of agroforestry technologies which have multiple purposes and advantages, controlling soil erosion, improving soil fertility, providing feed for livestock, poles for staking and building, and other environmental services. The tree planting byelaw also encourages multipurpose trees, especially fruit trees that provide food and income, in addition to their other environmental services. An important aspect of the success in formulation and implementation of the soil erosion control byelaw was its link with NRM innovations. It is therefore as important to link any byelaw to NRM technologies that would provide sufficient incentives to farmers to implement the policies. In addition to technology innovations, mechanisms for encouraging collective action and farmers' innovations are key to promote and sustain community's interest and participation in NRM. Research and development organizations have a role to disseminate profitable technologies to farmers and provide minimum inputs that are needed to resolve some key constraints and bottlenecks.

4.4. Finding and promoting policy incentives:

Many of NRM technologies needed for the implementation of the soil erosion byelaw require some minimum inputs. Based on their experience with disseminating of agroforestery technologies in the highlands of Kabale, Raussen et al. (2001) recommended a "minimum input strategy" to facilitate widespread adoption of agroforestry technologies. Other empirical studies in Ethiopia (Shiferaw and Holden 2000) showed that policies that link production subsidies with soil conservation could provide opportunities for combating soil erosion. Research could investigate the feasibility of developing a reward system to communities and farmers that are championing NRM issues and implementing the byelaws. This system could be integrated into local government development plans and budgets to provide inputs such as seeds of improved varieties, small livestock, seedlings of high value trees to those communities and farmers that are outstanding in NRM innovations. Such communities could be selected as priority areas for new government interventions and other development initiatives. A "land management fund" could be institutionalized in local government development plans and budgets. Other studies have found that given good knowledge about local resources, appropriate institutional, social and economic conditions, and processes that encourage deliberation and participation, rural communities can work together collectively to use natural resources sustainably over the long term (Pretty, 2003). It is therefore important to provide incentives that encourage community participation in NRM and policy process.

4.5. Building effective networks of influence:

To be effective, R&D professionals need to stay close to the policy process, and exploit opportunities that come along to get local community byelaws translated into political decisions or policies. Reaching and influencing policy-makers depends on a number of key issues including: building effective networks of influence, identifying and supporting NRM

champions at various levels of local government who champion NRM initiatives and demonstrate keen interest for advancing policies that promote NRM. These political and community leaders consistently played an important role in any policy and community initiatives. The NRM forum coordinated by AFRENA for the dissemination of of agroforestery technologies could be broadened to other NRM and policy issues. The emergence of the coalition for effective extension delivery (CEED), a coalition of major NRM R&D organizations in Kabale is a right step in this direction.

5. Conclusion

Results of this action research suggest that with current decentralization in Uganda, there are significant opportunities that research and development can utilize to influence policies, and to translate research results into policy and decision-making of wider communities to accelerate wider-scale adoption and dissemination of NRM technologies. The paper has highlighted mechanisms that research and development organizations can use to influence policy action and facilitate the participation of local communities in policy processes for natural resources management. Lessons learned suggest that to be able to influence policy, research and development need to adopt and support the policy process. The paper suggests a five "IN's" model for facilitating and influencing policy change: strengthening local *institutions*; providing *information*; linking byelaws to NRM *innovations*; finding and promoting *incentives*, and building a network of *influence*.

One key challenge is, however, how to sustain such processes and linking with national level policy structures. In order for the byelaws committees to become part of the policy making process, there is need to work towards mechanisms to institutionalise such participatory processes for policy formulation and implementation. The decentralization policy in Uganda offers good opportunities for achieving such participatory processes for policy change. Many districts and other decentralized local governments have legislative and executive powers to formulate and implement their own policies and byelaws in NRM. They need support from research and development organizations for using effective ways of engaging local communities in the formulation and implementation of byelaws. At the national level, there are some opportunities that can be realized. Many national level institutions and programmes such as the National Environmental Authority (NEMA), the National Agricultural Advisory and Development Services (NAADS) and nationwide and international NGOs and civil society organizations within and outside Uganda could provide a fertile ground for scaling up such participatory policy action research processes for sustainable natural resources management. Understanding and assessing the outcomes and the impacts of these processes on the status of natural resources, and rural livelihoods in the pilot communities remains an important consideration that requires a longer-term perspective. It is also important to assess the sustainability and uptake of strengthening local institutions for NRM policy formulation and implementation at higher policy level.

The work described in this paper constitutes a promising beginning. Although it is difficult to estimate, about 5 million poor rural people in Uganda live in similar physical environments (taken as the nearby districts of Kabale, Kisoro, Bushenyi, Mbarara, Rukungiri, Ntungamo, and eastern districts of Kapchorwa, and Mbale), at high population densities, relying on rainfed arable cultivation on steep slopes and valley-bottom wetlands. If the other highlands areas of Tanzania, Ethiopia, Rwanda, Madagascar are included, then the project is representing the conditions of at least 50 million people who live in the highlands areas, where social capital has been eroded. However, it is important to note that influencing policy is a long and complex process that needs perseverance, and a sustained programme of interventions and lobbying by different institutions and actors.

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