18 BRIDGING RESEARCH AND POLICY FOR IMPROVING NATURAL RESOURCE MANAGEMENT – Lessons and Challenges in the Highlands of South-western Uganda

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Abstract

Natural resource management (NRM) research and development (R&D) is becoming an expanding thrust of policy research on African agriculture because although natural resources constitute the basis of sustainable livelihoods, their degradation has intensified over the years. However, despite this interest in NRM policy research, there is a paucity of empirical studies that link research to policy process in Africa. There is concern that NRM research and technology development has not been reflected in policy change, nor has it affected decision-making processes of rural communities for better management of natural resources. This chapter reports experience with a participatory policy action research process in Kabale, Uganda. It aims at strengthening local-level processes and capacity for developing, implementing, and enforcing local policies or byelaws to improve the adoption of NRM technologies that require collective action and collaboration. The main thrust of this action research process is building and strengthening a tripartite dialogue and interaction between local communities, local government structures, and R&D organisations. This critical triangle is made operational by the policy task forces at the district, sub-county, and village levels. These task forces have proved to be critical in building support for byelaw review and formulation, and in 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. Lessons learnt suggest that there is significant opportunity for research to influence and support the process of decentralisation by strengthening the capacity of local governments and local communities to accelerate wider-scale adoption and dissemination of NRM technologies. To be able to influence policy, research needs to provide direct support to the process of policy formulation and implementation. Mechanisms that researchers could use to influence and support

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policy actions to accelerate the adoption of NRM technologies are suggested. Influencing policy in NRM is, however, a long process that needs perseverance and a sustained programme of interventions by different institutions.

Introduction

Natural resources constitute the basis of rural livelihoods systems and hold the key to increased food security and sustainable development in the highlands of east Africa. However, the degradation of natural resources is intensifying and has been described as one of the key constraints to sustainable development. Natural resource management (NRM) is a relatively new and expanding thrust in policy research on African agriculture (Omamo 2003). Several scholars 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 (Scherr et al. 1996; Egulu and Ebanyat 2000; Shiferwa and Holden 2000; Pender et al. 2001). However, there is concern that NRM research and technology development has not been reflected in policy change, nor has it affected the decision-making processes of wider communities (NRSP 1999).

In Uganda, recent decentralisation efforts have shown promising improvement in the participation of local people and other stakeholders in the policy decision-making process. To be effective, decentralisation must be based on effective and sustainable local institutions, by engaging local communities directly in the articulation of their policy needs and in the analysis, design, and implementation of policies and innovations (Rasmussen and Meinzen-Dick 1995). However, 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. As Thomson (2000) points out, in too many cases, local communities and other stakeholders have a very limited role to play and even when policies advocate participatory processes, they are often used in a more extractive than empowering context. Many problems of NRM require a wider perspective involving community organisations, research and development (R&D) institutions, local government, policy-makers, and multiple stakeholders. The need to broaden NRM research from simple technology solutions to include socioeconomic and policy dimensions is increasingly recognised in the NRM R&D community (Wang'ati 1994; Pretty 1995; Lawrence et al. 1999). Policy support is an essential ingredient for widespread adoption of NRM technologies and for scaling up sustainable management of natural resources. However, despite this interest in NRM policy research, there is a paucity of empirical studies that link research to policy process in Africa.

Recognising that policy support is always needed for the adoption of NRM innovations, the African Highlands Initiative (AHI)[7] established a policy working group to increase the

[7] "AHI was established in 1995 as an eco-regional programme to focus on the issues of land degradation and agricultural productivity in the highlands of East and Central Africa. AHI's guiding philosophy is a client-driven approach using participatory methods and an effective research development continuum where research partners, using collaborative, synergic partnership can bring together diverse contributions to foster farmers' innovation and collective action for design and dissemination of appropriate integrated technologies and methods for improving NRM in the diverse and complex situation." (AHI 1999)

policy relevance of research at the local level and to design alternative policy instruments to facilitate adoption of NRM technologies. The AHI local NRM policy research initiative focuses on assessing the effectiveness of local NRM policy processes and assessing the relationships between policy change, technology adoption, and NRM (Place 2001). This chapter reports experiences with a participatory policy action research project which aimed at strengthening social capital to improve policies and decision-making in NRM in four pilot communities in the highlands of Kabale, south-western Uganda. The purpose of the project is to strengthen local-level processes and capacity for developing, implementing, and enforcing byelaws and other local policies. This will improve NRM by supporting and facilitating the integration of participatory approaches into policy decision-making and implementation to promote the adoption and increase the impact of NRM innovations and byelaws that require collective action and collaboration.

This participatory action research addresses three important aspects of sustainable livelihoods: social and human capital, policies, and institutions to improve natural capital. Its purpose is to strengthen the social capital of pilot communities to improve their participation in local policy formulation, implementation, and decision-making to accelerate the adoption of sustainable NRM practices. The central hypothesis of the project is that the presence of social capital is a necessary pre-condition for the participation of resource-poor farmers in policy formulation and implementation, and in R&D activities and for the adoption of NRM innovations that require collective action and collaboration.

The rest of the chapter is divided into four sections. The next section describes the research setting, its institutional and policy setting, and the operational framework for the study. Based on this framework, we describe the policy action research process, which includes (1) participatory research in NRM; (2) facilitating policy dialogue; (3) participatory policy analysis; and (4) supporting policy action. We also discuss some mechanisms for supporting policy action. The chapter concludes with some key lessons learnt and challenges for policy and R&D.

Research Methodology and Conceptual Framework

The research setting

The highland areas of east Africa cover 23% of the region and house over 50% of the people (over 50 million). Population pressure has continued to increase resulting in high population densities, land shortage, and fragmented small farms (0.25-1.0 ha for a family of 6). In Uganda, the highlands account for 27% of land area and close to 40% of the total population. They are mostly in the south-western and western part of the country as well as in the east. This paper is based on research work conducted in Kabale, a mountainous district in south-western Uganda and a benchmark site of AHI. The benchmark site is also characterised by high population density (exceeding 400 inhabitants/km^2 in some areas), and steep cultivated slopes (1500-2700 masl) but with an adequate bi-modal rainfall (annual average 1000 mm). The majority of the hills have semi-permanent bench terraces up to the hilltops, developed some 50 years ago along

the contours of the hills and now a common feature of Kabale district. These soil conservation measures were widely practised prior to the 1970s, promoted by agricultural services and enforced by the local administrators. However, as a result of several years of political turmoil, breakdown in administrative services, population pressure, and poverty, many of these old terraces have seriously deteriorated (Pender et al. 2001). As a result, declining soil fertility and erosion are serious problems in this area. It is estimated that about 90% of the district soil is affected by erosion, due to steep slopes, population pressure, deforestation, poor farming, and vulnerable soil. Results of household interviews showed that indeed most households are affected by soil erosion, gullies, collapsing terraces, and flooding of valley bottom farmlands (Sanginga and Kamugisha 2003). A recent study, which assessed the extent of land degradation and soil losses in the pilot communities, estimated that between 21 and 59 t/ha of soil are lost at slope gradients ranging between 48% and 71%, respectively, through gully and rill erosion in the watershed (Mbabazi et al. 2003). Livelihood options for most people are limited to food crop production (sorghum, beans, potatoes, field peas, sweet potatoes, maize, and banana) and a few livestock. Off-farm employment options are limited, but there is an increase in the number of men seeking employment elsewhere.

The project works directly with its primary stakeholders in the Buramba-Mugandu watershed in Rubaya sub-county – poor male and female smallholder farmers – using community-based participatory action research methods. Rubaya is notable both for its land degradation and the large number of projects that have attempted to address NRM issues. The project facilitates regular interactions and discussions between the primary stakeholders, decentralised policy institutions, and local target institutions. The implementation of the study combines and integrates a range of participatory research approaches and formal survey methods in order to triangulate research findings from different perspectives and to ensure the participation of local stakeholders.

Policy and institutional setting

Decentralisation in Uganda is probably one of the most ambitious and far-reaching reforms of local government reform undertaken in sub-Saharan Africa. The decentralisation process was initiated in 1986 and culminated in the '1997 Local Government Act', which provides the legal framework for the participation of local communities in policy-making and for sustainable NRM. The functions and services regarding land use, management, and administration are the responsibility of local government and local councils (LCs) (Table 18.1). At the base of the local government structure, the LC1 (village council) consists of all adults residing in a particular village. The village community elects a nine-member village LC executive committee. Beyond the village, in ascending geographical size, there are parish (LC2), sub-county or gombolola (LC3), county (LC4), and district (LC5) councils. The district council (LC5) is the highest level of local government and links with central government. The sub-county level (LC3) is the basic unit of local government, both political and administrative. The provision of local government elections guarantees widespread representation at the various councils and includes quotas by gender, people with disabilities, and young people. For example, at least one-third of the council members must be women, an affirmative action to empower women and promote gender equity.

Table 18.1: **Decentralised structures in Uganda: levels and main functions**		
Local Council Level	**Composition**	**Functions**
LC 1: Village (composed of about 50 households)	9 members At least 4 women	• Assist in maintaining law, order, and security • Initiate, support, and participate in self-help projects • Recommend people for local defence units • Serve as a communication channel 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)	• At least 4 women from each village elected	• Assist in maintaining law, order, and security • Serve as a communication channel 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)	• At least 1/3 women • At least 2 young people • At least 2 people with disabilities • Elected councillors from parishes	• Local government • Enact byelaws • Approve sub-county 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-chairpersons from each sub-county)	• 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 • At least 12 women councillors • At least 2 young people • At least 2 people with disabilities • 19 elected councillors	• Exercise all political and executive powers • Provide services • Ensure implementation of and compliance with government policies • 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

The mechanisms of decentralisation are established and functioning, with the structure of a five-tier system of local councils and committees, decentralised staff, a bottom-up planning process, and powers to collect and disburse local revenue (James et al. 2001). These changes have brought some impressive results, creating a fundamentally different environment for open and participatory policy and decision-making at the lower councils. However, there are some problems in the implementation of the decentralisation policy. Inadequate resources, trained personnel and human capital, revenue collection and use, and accountability of funds, and weak institutions and misconception of policy are some of the most common problems (Kabale District Local Government 2002). Decentralisation in Uganda is still a relatively young process and does not yet constitute a genuinely participatory system of local governance (James et al. 2001). The need to strengthen that process and ensure the participation of local

communities in the decentralisation process constitutes the thrust of this participatory policy action research conducted in Kabale, Uganda.

Operational framework

Our operational framework (Figure 18.1) is adapted from the policy process framework (Minde 2002) and is based on the following key components: (1) participatory NRM research and development, (2) participatory policy analysis, (3) facilitating policy dialogue, and (4) supporting policy action. The process is facilitated and monitored by policy task forces (PTFs) at different levels (district, sub-county, and village), which ensures the integration of the different elements of the process. For an effective policy dialogue, some conditions are necessary. One is the presence of social capital or efforts to strengthen social capital. The other condition is effective mechanisms for participatory policy analysis. Policy action follows the participatory policy analysis process and needs to be supported by technologies that will improve the natural resource base and increase land and labour productivity and profitability.

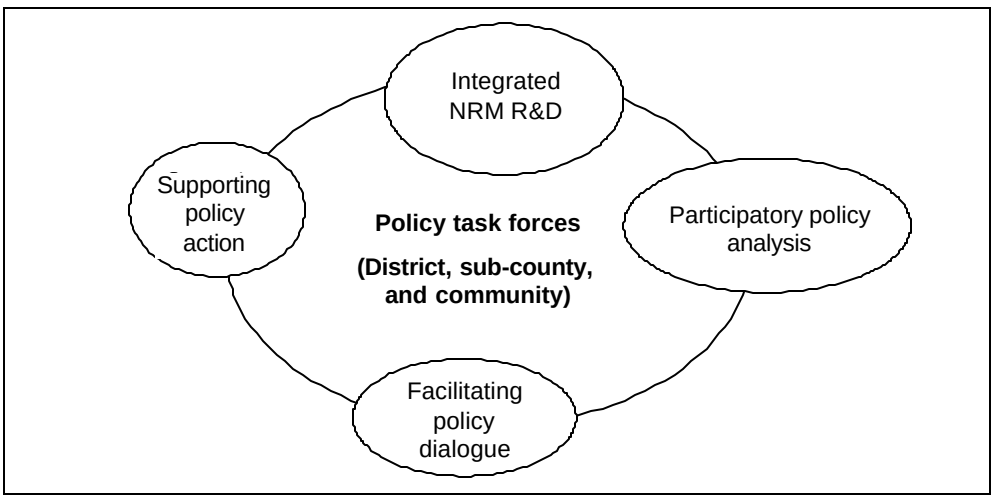

Figure 18.1: **Operational framework for the participatory policy process**

Results and Discussion

In this section, we present and discuss the experiences and lessons learnt in the implementation of this participatory policy action research. First we summarise the participatory research process in NRM promoted by AHI and other development partners. Second, we describe our efforts in promoting and facilitating policy dialogue through the use of stakeholder forums and PTFs at the different levels.

Participatory NRM R&D

The decrease in soil fertility and high rates of land degradation and erosion are some of the common concerns of farmers and R&D workers as well as government leaders in Kabale. Several NRM technologies are available locally and are being promoted by R&D organisations such as Agroforestry Research Network for East and Central Africa (AFRENA), AFRICARE, the National Agricultural Research Organization (Uganda)

(NARO), AHI, CIAT, and Africa 2000 Network. A recent survey (Raussen et al. 2002) compiled an inventory of existing technologies to solve NRM issues in Kabale. Despite these considerable efforts, widespread adoption of NRM technologies is still a challenge (Table 18.2).

Table 18.2: **Use of soil conservation measures by farm households**

Soil Conservation Measure	(Percentage of farmers, n=146)		
	Female	Male	All households
Construction of new terraces	38.6	45.3	42.1
Digging of trenches	32.9	38.7	35.9
Mulching	14.3	21.3	17.9
Use of trash lines	5.7	6.7	6.2
Planting grass strips	8.6	9.3	9.0
Use of agroforestry	25.7	30.7	28.3
Fallowing with trees	20.0	32.0	26.2
Natural Fallow	31.4	34.7	33.1

Source: Sanginga and Kamugisha (2003)

It has been argued that the dearth of participatory approaches for technology development and dissemination is one of the key factors that limits the adoption of NRM technologies. There is a general dissatisfaction with the agricultural research and extension system (Röling and de Jong 1998), which has not been particularly successful in supporting positive technological change for small-scale farmers. Over the years, it has been widely suggested that a new type of approach for agricultural R&D is called for. There is considerable evidence to show that new R&D approaches allowing farmers to participate fully in developing, demanding, and accessing information will improve farmers' capacity to select and adopt appropriate technologies and will improve the capacity of scientists and partners to respond to research needs (Chambers and Jiggins1986). In other words, the participation of potential users increases the efficiency and effectiveness of the processes of technological change in agriculture.

Over the years, the AHI has made substantial efforts to catalyse and promote participatory research in NRM. AHI's approaches emphasise the use and formation of farmer research groups as a central strategy for participatory research. The participatory agroecosystem management (PAM) approach has eight distinct stages, from rapid rural appraisals to technology dissemination. In general, participatory rural appraisal exercises provide the starting point for identifying problems by developing problem trees with farmers that can then be used as a basis for identifying and selecting solutions and best-bet technologies.

Once the entry points were established, PAM planning workshops were organised to develop participatory research action plans. The next phase was the design of adaptive research experiments, which were established on farmers' fields, managed by farmers, and evaluated to select best-bet options. Successful options could then be disseminated through farmer-to-farmer dissemination channels or other alternative dissemination channels, such as the telecentre or rural community information centres. Greater participation, of farmers in all the research processes, moving from the consultative to collegial type of participation, is a major thrust of AHI.

Given the wide range of NRM issues and approaches for addressing them, AHI has adopted the term 'integrated natural resource management' (INRM). This novel approach needs to balance and integrate different disciplines, embrace focused systems thinking, have multiple scales of intervention and analysis, focus on creating adaptive capacity of farmers, and give considerable attention to policy and strengthening social capital or organisational development (Sayer and Campbell 2001). The INRM paradigm would engender a focus on participatory approaches that redefine the role of scientists, farmers, and other stakeholders (Opondo et al. 2002), in a resource-to-policy system. The resource-to-policy system links farmers resources and capital assets, their management and production constraints and opportunities for marketing, and policy to provide incentives for the adoption and use of NRM technologies. It examines policy options that provide incentives to adopt NRM technologies that increase productivity and profitability of land and labour and facilitate collective action and collaboration.

Participatory policy analysis

Policy analysis is another important aspect of the research contribution to policy. As Thomson (2000) points out, the contents of policy, the process of policy formulation, and the way policy is implemented, need to be fully understood by those responsible for policy implementation. In this chapter, we use the term policy in its broad sense, to refer to programmes, strategies, plans, rules, and regulations and their implementation resulting from public (state) or collective decision-making (Thomson 2000; Means et al. 2002). Policy can be generated at different levels: international, national, regional, district, and local levels and can operate at all levels, and in both public and private spheres or in community organisations. They can be formal (for example, laws that govern land tenure) and informal (for example, social customs and conventions), created (for example, as a result of deliberate political or policy decisions), or evolved over time. In this study, we are particularly concerned with those local-level policies and local authority and community regulations usually referred to as byelaws. Byelaws are rules made by lower LCs under the 1997 Local Government Act and provide the local policy guidelines to be followed in sectoral developments such as agriculture and NRM.

Under decentralisation, many local governments are involved in reviewing existing byelaws and formulating new ones. However, there is no systematic information that provides policy-makers and other stakeholders with much guidance on people's awareness, implementation and assessment of the effectiveness of existing byelaws, constraints in their implementation and their outcomes, and strategies for making existing byelaws more effective. In too many cases, byelaws and policies are designed on the basis of inadequate empirical understanding or weak empirical evidence. The need for more empirical information about the awareness and effectiveness of current byelaws and other local policies and the problems or constraints in their implementation was evident in the various policy stakeholder workshops. The first policy stakeholder workshop in 1999 recommended that a study should be conducted to improve the understanding and awareness of byelaws, to assess their effectiveness, and to suggest mechanisms and processes for improving the formulation and implementation of byelaws and other local policies.

Byelaws (or local arrangements and institutions) for NRM now receive greater attention as a viable alternative for enforcing government policies and rectifying their inefficiencies in agriculture. There are six general byelaws in agriculture and NRM in the areas of soil and water conservation, food security, tree planting, bush burning, controlled grazing, and swamp reclamation. Each of these byelaws has specific regulations and enforcement mechanisms (Box 18.1).

Box 18.1: **Examples of byelaw regulations and enforcement mechanisms**

The soil and water conservation byelaw

1: Any person who clears land for cultivation on a slope shall:

- construct bunds /barriers across the slope parallel to the contour;
- plant appropriate grasses or agroforestry trees on the bunds;
- construct barriers as determined by technical agricultural extension officer;
- not plant annual crops on a steep slope, but plant trees.

2: Planting of crops shall be done along the contour.

3: Any person demarcating two plots shall not use farrows nor gullies, but mark stones, live hedges or shrubs.

4: (a) All paths, cattle tracks, and access roads shall be protected against erosion by runoff channels and soak-away pits and;

(b) Paths or tracks may be closed by community leaders to prevent erosion and alternative routes provided.

Any person disobeying the provisions of this law shall be guilty of an offence and shall on first conviction be liable to a fine not exceeding UG SHS 3,000/= or imprisonment for 15 days or both and shall on any subsequent conviction be liable to a fine not exceeding Shs. 5,000/= or to imprisonment as may be effective.

The tree planting byelaw

- Any person who cuts a live tree shall (a) plant two (b) ensure the planted ones are protected and well looked after
- All persons who own private woodlots on hills and want to clear fell must first seek advice from forest department, local council and local chiefs
- Appropriate tree species shall be planted not less than 3m on both sides of feeder roads
- 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
- The local committees with help of chiefs will make sure all road reserves are planted with rows of trees on both sides

Whoever contravenes the conditions of this byelaw should be guilty of an offence and shall on the first conviction be liable to a fine of UG SHS 3,000/= and planting the number of trees felled; on second conviction will be liable to both imprisonment of 21 days and planting the number of trees felled.

To make the byelaw review process more systematic, we adapted the sustainable development framework of the International Institute for Sustainable Development (IISD) (Hardi and Zdan 1997), which has the following steps.

1. Bring together all stakeholders and begin to analyse the issues; to begin the analyses of the policies, byelaws, and related issues, adopt an appropriate scope and focus
2. Prioritise policies and byelaws for analysis
3. Analyse whether the policies and byelaws are consistent with sustainable NRM in the broader rural livelihoods context
4. Assess the capacity for implementing policies and byelaws to identify potential problems
5. Develop action plans to revise byelaws and to build capacity for policy formulation and implementation; this step involves full stakeholder participation in developing policy reform options, allocating responsibilities and resources, and undertaking additional activities to build the necessary local capacity for successful policy formulation and implementation
6. Develop criteria and indicators by which progress will be assessed and measured
7. Review and monitor the implementation of policies and byelaws on a regular basis

We conducted a survey of 146 male and female farmers in the pilot communities to assess their awareness and perception of the effectiveness of these byelaws in agricultural and natural resource management (Sanginga and Muhanguzi 2003). Among other results, it is interesting to note that there is a byelaw that recommends that the construction of barriers and planting of vegetation on the bunds should be guided by technical agricultural extension workers. This regulation was not known by the majority of farmers and its enforcement was therefore not effective. The enforcement of the soil and water conservation byelaws was very effective in the colonial times, because then there was strict and regular monitoring of byelaws by extension workers, local chiefs, and government administrators. Most soil conservation measures, especially the terrace bunds, were established during that period. This strict administration faded in the 1980s, with civil unrest and the degradation of administrative and extension services. The inefficiency of government extension services has partly led to the increasing number of non-government organisations (NGOs) that are actively working with farmers to combat soil erosion and land degradation. But given their nature and modalities of work, they do not have capacity to enforce the implementation of byelaws. With the recent initiatives of the National Agricultural Advisory Development Services (NAADS) in privatising agricultural extension services in Uganda, there are concerns that public authority for enforcing such byelaws will be further lost.

Results show further that about half of the farmers were not aware of the tree planting byelaw, recommending that “only agroforestry trees shall be planted at boundary or terraces of neighbouring plots”. The regulation that “all persons who own private woodlots on hills and want to clear fell must first seek advice from forest department, local councils and local chiefs”, was the least effective. This has caused the dramatic destruction of woodlots for poles and timber production, leaving many hills with very

little, if any, tree cover. Figure 18.2 shows that the main reasons for the ineffectiveness of the byelaws include weak enforcement mechanisms, outdated regulations, no sensitisation of farmers, and conflicts between different policies and administrative structures (agriculture, forest, and wetlands departments), as well as lack of effective extension services. With the decentralisation process, the local chiefs are not sufficiently empowered to reinforce strict implementation of byelaws and the dual nature of decentralisation has created some confusion about the roles of different power structures. In many cases byelaws are outdated and their prescribed sanctions can be easily abused.

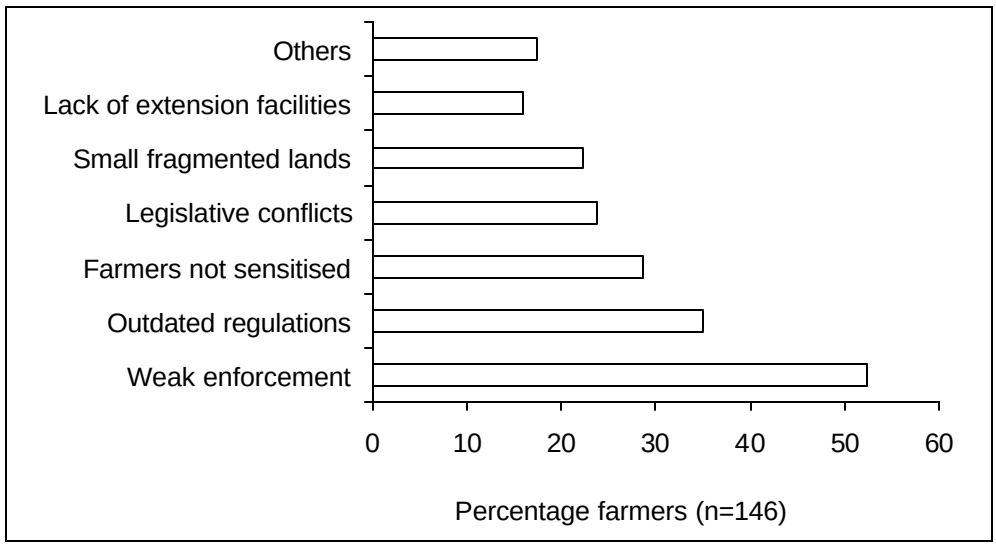

Figure 18.2: **Farmers' assessment of the reasons for weak and ineffective byelaws**

Byelaws that are thought to be more effective are associated with strong enforcement mechanisms, participation and sensitisation of local communities in their formulation and enforcement, and technologies and practices that increase productivity. 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. Many of the recommendations to make byelaws more effective require capacity building of different stakeholders, both local communities and decentralised structures, which R&D organisations are better placed to facilitate. This is a significant role that R&D institutions can play, but it requires initiatives to facilitate and promote policy dialogue between the different stakeholders and to support policy action for improving decision-making and the adoption of improved NRM practices.

Promoting and facilitating policy dialogue

It is evident from the results of the participatory analysis of byelaws that it is important to develop capacity for implementing byelaws and enhancing community level participation in formulating and monitoring byelaws. 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. Participation can be promoted by facilitating dialogue where community members or community representatives can engage in dialogue with local leaders, government officials, and other stakeholders. The project used two mechanisms: policy stakeholder workshops and PTFs.

NRM policy stakeholder workshops

The first district-level policy stakeholder workshop was held in November 1999. The workshop was organised by AHI in collaboration with the district council and was attended by district leaders and councillors, members of parliament, sub-county councillors, local government technical services, R&D organisations, and farmers' representatives. The theme of the workshop was: "Improving the policy relevance of NRM research and development" (AHI 1999). The workshop identified a number of priority issues for research and policy intervention.

Policy stakeholder workshops are held twice a year to bring together a large number of participants (80-100), including representatives of neighbouring districts. The themes of these workshops vary according to the needs expressed during previous workshops and results from R&D to share with a wider policy audience. The workshops are organised into three sessions: (1) presentations by farmers, R&D organisations, and government technical services; (2) plenary discussions to identify and debate key issues from the different presentations; and (3) multi-stakeholders' working groups to discuss specific issues in detail and to develop policy recommendations.

As noted earlier, even such participatory processes may actually be extractive rather then genuinely participatory; local farmers may have little role to play and their presence may be more symbolic (Thomson 2000). To make this dialogue more effective and participatory, some specific efforts are necessary to strengthen the weakest stakeholders, the farmers, and other local stakeholders. To prepare farmers to be effective partners in the district-level stakeholder workshop, we facilitated a number of meetings and consultations in the villages. Using a range of participatory techniques (mapping, diagramming, role plays, group discussions, and visioning techniques) farmers are facilitated to develop their community action plans, indicating NRM issues that need policy and R&D interventions. The village policy task forces (VPTFs) are further facilitated and mentored to a articulate their presentations better with confidence. It has been particularly useful to organise farmers' exposure visits to areas with some successful experience in collective action, effective byelaws, and adoption of NRM technologies. After such visits, the VPTFs of the different villages meet together to reflect on their observations and impressions and on opportunities for their integration in their community plans. They also use the opportunity to rehearse their presentations while other farmers ask questions and suggest improvements. Some farmers are elected to chair and facilitate the meetings and discussions, while the research team play a low profile role. We found that this process has been very useful not only for exposing farmers to innovative NRM technologies, but also for building their confidence and capacity to engage in policy dialogue with other stakeholders. This confidence

grows with the number of meetings and events that farmers attend. In his mid-term review report, Stocking (2002) observed that the most interesting highlights of the stakeholder meetings were farmers' presentations and subsequent working group discussions. Indeed in several cases, farmers' presentations were more articulate than those of researchers and development workers.

Policy task forces (PTFs)

The first stakeholder workshop recommended the formation of a PTF, with the principal responsibilities of identifying and undertaking joint priority activities and providing a forum for institutional linkages between the different stakeholder groups. The members of the task force were nominated by the stakeholder workshop to represent their stakeholder groups. It was initially composed of eight members, representing different stakeholder groups (district council, local government technical services, R&D organisations, sub-county council, and farmers' representatives), but has been extended recently to 12 members to enable a broader representation. The district policy task force (DPTF) was coordinated by the district council speaker, a 'champion' in NRM R&D and policy, who was later elected as the district chairman.

It was further resolved to facilitate the formation of PTFs at the sub-county level and in the four pilot learning communities. The sub-county is a critical aspect of the decentralisation system, as it has important political and administrative powers to develop byelaws, development plans, and budgets, and to allocate resources. It is ultimately the unit where policy reform can be initiated more effectively. The VPTFs are modelled on the 'Landcare triangle' (Figure 18.3) of the tripartite relationships of key actors in NRM: farmers, local government, and R&D technical facilitators (Garrity et al. 2000; Catacutan et al. 2001). The criteria for electing or selecting members, and the number of members of the VPTF, were determined during community meetings. In general, a VPTF has between 6-8 elected members with a representation of women of at least 40%.

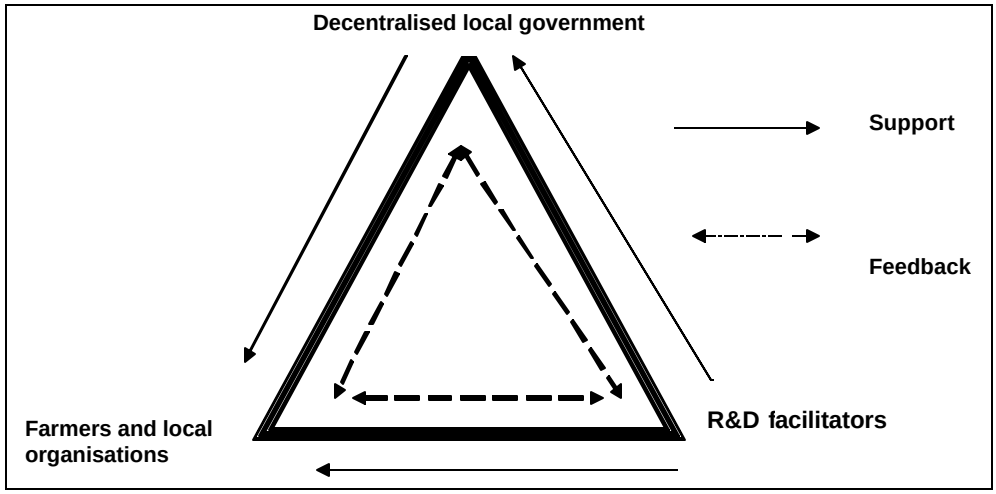

Figure 18.3: **Policy Task Force (critical triangle)**
source: adapted from Catacutan et al. (2001)

Besides the elected farmers, at least four local councillors and government officials are appointed to the VPTF. The VPTFs also nominate their representatives to the sub-county PTF that meets regularly. The formation of the PTFs is based on the 'synergy approach' of social capital (Woolock and Narayan 2000). This approach contends that the synergy between local policies and social capital is based on the complementarity and mutually supportive relationship between local government and community actors. At the village level, because local government councillors or government officials are from local communities, they are embedded in local social relations and hence can be under pressure from the community to perform and be responsive to them.

The VPTFs are meant to (1) create a platform for dialogue between communities, local government councils, and R&D organisations on the analysis of NRM issues and local byelaws, (2) to initiate and monitor the review, formulation, and implementation of byelaws, and (3) disseminate NRM technologies. This requires strengthening the social capital of local communities to improve their decision-making powers and collective analysis. The steps include the following among others.

- Identifying and supporting farmers' organisations and institutions in relation to NRM
- Motivating and facilitating people and communities to be involved in the process of action learning, and stimulating reflection on policies, byelaws and their NRM practices
- Use of group dynamic methods to facilitate and support actions, initiatives, and interventions that catalyse the development and strengthening of community organisations and sustainable management of natural resources
- Stimulating joint analysis through visualisation, diagramming, and other relevant participatory tools
- Creating opportunities and space for collective action, and common platforms and forums for negotiation of NRM issues and providing links between research, extension and policy, and local communities – these include community meetings, village-level meetings, multi-village meetings for making connections and exchange between representatives of different villages, and stakeholders' meetings for negotiations between local communities and policy-makers

Supporting policy action

The aim of the participatory policy analysis and facilitating and promoting policy dialogue is to provide necessary information and space for influencing policy decision-making and implementation processes. In his recent compelling critique of policy research on African agriculture, Omamo (2003) argues that policy researchers must get closer to the reality and become more concerned with practical issues of implementation, for example, how to promote the feasibility of the alternative policy options and recommendations. As Tyler (1999) also observed, for the findings of the participatory policy analysis and policy dialogue to be reflected in policy use and systematic practice, initiatives for supporting policy action are required rather than only "abstracting data, analysing and generating expert-driven technical solutions". To be able to influence policy, R&D needs to provide direct support to the process of policy

implementation. The way in which policy is implemented can change the effective content of policy. In the various policy stakeholder workshops and DPTF meetings, we aimed to identify mechanisms researchers could use to influence and support policy actions. Some of these mechanisms are consistent with and exemplify some important elements of the sustainable livelihoods policy guidance sheets (DFID not dated). They include the following.

Coordination and networking

Constraints on influencing policy include lack of coordination and duplication and fragmentation of R&D efforts. It was pointed out that in many cases, R&D players convey different and at times conflicting messages to policy-makers as well as to farmers. Reaching and influencing policy-makers depends on R&D, and building effective networks of influence and communication. Networking between local NGOs, and other national and international organisations and civil society engaged in agriculture and NRM may be an effective strategy in getting research results into the policy-making process.

Communication and information

It was observed that research results are like any other products that need to be marketed to be used. However, the language of academic researchers is frequently inappropriate to a policy and development audience. Effective communication skills are essential for influencing policy. Well-documented evidence, quantitative economic analysis, scenario building with practical examples using simple graphical analytical tools and information representation (for example, mapping and geographical information systems) can be powerful ways of presenting results to policy-makers. Researchers need to develop alternative innovative communication and information strategies and processes for targeting people who make, influence, or implement policy. Some powerful means are tailor-made policy-learning events' (workshops, seminars, videos, exposure visits, and field visits) that aim to disseminate 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. Researchers should market their own products or build strategic alliances with NGOs and government institutions who can market these products.

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 recognise short-term opportunities associated with related legislative calendars, planning and budgeting activities, changes in key leaderships, political appointments, and government personnel. R&D needs to pay attention to two important aspects in order to influence policies.

– Identifying and capitalising on crisis situations. Windows of opportunity for change can present themselves at times of crisis, such as floods, land slides, drought, fires, and other natural disasters. The successful example of Kyantombi watershed (Raussen et al. 2001) was a response to flooding during the El Nino rains.
– Leadership consistently plays an important role in any policy initiative. It is generally

leaders who put reform on political agendas, who provide a vision, who are actively involved in shaping the content of proposals for change, and who spearhead the process of generating support for policy change. The emergence of strong NRM champions in the district councils provides an opportunity for advancing policies that promote NRM.

Capacity building

In a decentralised system, the most effective voices in reaching policy makers are those of the elected local councillors. However, 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. Appropriate capacity-building events on NRM technologies and policy process and content are critical for any sustainable policy change.

Strengthening social capital

Social capital is one of the specific factors that point to successful and effective implementation and sustainability of agricultural policies and innovations. Effective policy action must be based on effective local institutions and community organisations that engage local communities and farmers in the formulation and implementation of policies. It was recognised that even in a decentralised system or a participatory process, local communities and farmers' representatives often have a very limited role to play and are limited simply to representation. As argued by Thomson (2000), a sustainable livelihood-friendly policy process would require a much more active role for farmers and local communities, community-based organisations, and civil organisations. The greatest potential for achieving participatory policy action lies in an emphasis on strengthening and sustaining the capacity of local communities to carry out policy dialogue and action. The success of any policy dialogue and policy action will depend on the presence of mature social capital and efforts towards strengthening synergies between social capital and policy or political capital. Recent research has also shown the importance of social capital foundations for successful policy interventions and community development (Uphoff and Mijayaratna 2000; Woolock and Narayan 2000; World Bank 2000; Grootaert 2001). Its reinforcement and continued deployment in a society is what maintains both the existence of particular institutions and the process of institutional innovations within society. The challenge is to maintain and enhance social capital so that all forms of capital, including natural capital, can be enhanced.

Finding and promoting policy incentives

Research needs to identify and document successful cases of good NRM policies and explore and recommend policy incentives for better NRM, taking into consideration the institutional framework and socioeconomic conditions. For example, research can explore what incentive systems and mechanisms might work for land consolidation in the context of small fragmented agricultural lands in Kabale. What strategies can

national policies, such as the plan for modernisation of agriculture, with its related programmes, such as NAADS, put in place to provide incentives for investment in soil conservation and sustainable land management? Could a land management fund to reward farmers who are found to comply with given byelaws (Akelo 2002) provide incentives for sustainable management of natural resources? Should the district provide subsidies for improved varieties of seeds linked to soil conservation measures, such as hedgerow planting and trench making? Should there be a policy on 'minimum input strategies' (Raussen et al. 2001) to facilitate widespread adoption of agroforestry technologies in Kabale? Results of 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. Can this work in Uganda, given the current policies of liberalisation of economy, decentralisation, and modernisation of agriculture?

Conclusions

The main thrust of this action research process was building and strengthening tripartite dialogue and interaction between local communities, local government structures, and R&D organisations. This 'critical triangle' materialises through PTFs at different levels, from the district to the sub-county and local levels. The PTFs have proved to be critical in building support for byelaw review and formulation; in mobilising the 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. For instance, through their VPTF, farmers in the small village of Muguri B (about 59 households) have formulated a byelaw on digging trenches to reduce runoff on hillsides. They have so far established 220 trenches in a short time and are now actively engaged in adaptive research to stabilise the bunds with different options of dual purpose barriers using different legumes and shrubs. This byelaw has now been discussed in the sub-county council for its general application in the sub-county. Raussen et al. (2001) have also reported similar successful cases of this tripartite alliance in Kyantombi watershed in Kabale.

Lessons learnt so far suggest that the VPTFs are also supporting mutual beneficial collective action and other important dimensions of social capital such as exchange of information and knowledge, sharing of resources, collective management of resources, community engagement, spirit of voluntary work, charitable involvement, and local community participation in R&D activities. The VPTFs are strengthening their organisational capacity and their group and leadership structure to act collectively, not only on their experimental activities, but also increasingly towards other activities for the common good. We found that the VPTFs are increasingly becoming vehicles through which farmers are pursuing wider concerns, initiating new activities, organising collective action among members, and extending relationships and linkages with external organisations. These VPTFs are taking the lead in catalysing the development process within their communities and are increasingly making demands to AHI and other R&D organisations. With regular exposure and farmers' exchange visits, the VPTFs are also helping to create 'bridging' social capital by linking VPTFs amongst themselves and to other formal and informal R&D organisations.

However, despite considerable progress at the local and district levels, effective links with national institutions and higher-level policy makers are still problematic. This is partly due to the nature of decentralisation where decisions are taken at lower levels. There are, however, some opportunities that can be realised, such as interactions with the Ugandan parliamentarian group on food security and land degradation and leaders of neighbouring districts, and linking up with national level institutions such as Uganda National Agricultural Advisory Services (NAADS) and the National Environment Management Authority (NEMA), and with nationwide NGOs and civil society organisations within and outside Uganda. There is good potential for scaling up as Stocking (2002) observed in his mid-term review of the project. He notes "... 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, Rukungiri, and Ntungamo), at high population densities, relying on rain fed arable cultivation on steep slopes and valley-bottom wetlands. If the adjacent areas in Rwanda, eastern Congo and Burundi are included, then the project is representing the conditions of at least 30 million people. 'Social capital' has been eroded significantly in the region by migrations, conflicts and ethnic tensions."

We argue that with the current decentralisation in Uganda, there are significant opportunities that R&D can utilise to influence policies, and to translate research results into policy and decision-making in wider communities. The chapter has highlighted such opportunities and strategies that can improve the policy relevance of NRM R&D, and strengthen the capacity of local governments and local communities to accelerate wider-scale adoption and dissemination of NRM technologies. We need to note however, that influencing policy is a long process that needs perseverance and a sustained programme of interventions implemented by different institutions.

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