

DEVOLUTION: A MECHANISM FOR SCALING ADOPTION OF SUSTAINABLE LAND MANAGEMENT IN EASTERN AFRICA HIGHLANDS

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ABSTRACT

Sustainable Land Management (SLM) technologies are known to improve food production and productivity in areas prone to high soil degradation, arising from water and soil nutrient losses. In eastern Africa, mechanisms for mitigation of this land degradation have been developed, but their uptake has been minimal. Devolution, a mechanism known to entrust communities with decision making tools and powers to plan, implement and monitor activities was tested in the highlands of eastern Africa. Generation of consensus on how to implement the scaling of adoption of SLM innovations is a crucial aspect for evaluating the devolution process. Assignment of clear roles and responsibilities facilitated involvement of multi-disciplinary stakeholders in managing the process of scaling sustainable land management innovations. At district level, officials appreciated the intervention, streamlined activities in their work plans leading to increased budgets for natural resource management which resulted into increased adoption of SLM technologies. Farmers were able to express their land management needs and give direction to operations through prioritising interventions (trenches, contour bunds and agroforestry) key to their area and facilitated dissemination of SLM technologies.

Key Words: Decision support tools, land degradation

RÉSUMÉ

Les technologies de gestion durable de terres (SLM) contribuent à l'amélioration de la production vivrière et la productivité dans des endroits sujets à une dégradation élevée par l'eau et la perte d'éléments minéraux. En Afrique de l'est, les mécanismes de mitigation de cette dégradation de terre ont été développés, mais leur utilisation a été minimale. La délégation d'autorité, un mécanisme reconnu pour persuader les communautés avec des outils de prise de décision et pouvoirs de planifier, exécuter et faire le suivi des activités était testé dans les hautes terres de l'Afrique de l'Est. La génération du consensus sur la façon d'appliquer les innovations est un aspect crucial pour l'évaluation du processus de délégation. L'attribution des rôles bien définis et responsabilités ont facilité l'implication des partenaires multi-disciplinaires dans la gestion du processus d'application des innovations de gestion durable des terres. Au niveau des districts, les autorités ont apprécié l'intervention, introduit les activités dans leurs plans d'activités conduisant à l'augmentation de budgets pour la gestion des ressources naturelles, avec pour résultats l'augmentation du taux d'adoption des technologies de SLM. Les fermiers étaient capables d'exprimer leurs besoins sur la gestion des terres et orienter les opérations par la priorisation des interventions (tranchées, courbes de niveau et agroforesterie) clés dans leur milieu et facilité la dissemination des technologies de SLM.

Mots Clés: Outil d'appui aux décisions, decision support tools, dégradation des terres

INTRODUCTION

Increased productivity of land and better utilisation of water and land are important for increasing production and productivity of

agricultural enterprises world over. However, land degradation, a phenomenon brought about by uncontrolled water runoff among others, is one of the major constraints to agricultural productivity in most countries, especially in the

eastern Africa highlands (Scherr and Yadar, 1996; Sonneveld and Keyzer, 2003). In eastern Uganda, Mt Elgon highlands are characterised by steep slopes that render them very vulnerable to soil and water run-off leading to high land degradation. The problem is further exacerbated by the flooding and more soil erosion caused in the lower altitude areas further down the highlands.

The last two decades have witnessed a shift in the conservation and management of natural resources. Since the early 1990s, devolution, through Community Based Natural Resource Management programmes, has become increasingly common across land scapes in countries of the south and have been introduced in natural resource sectors, including watershed, forests, wildlife, irrigation, fisheries and coastal zone management. Some known examples of this approach include Joint Forestry Management (JFM) which originated from India and adopted more recently by Tanzania and other African countries, the community based wild life and eco tourism programmes in Zimbabwe (such as CAMPFIRE), Namibia and Botswana, the catchment approach to soil and water conservation in Kenya, the *gestion de terroir* form of land use management planning popular in Sahelian countries of West Africa (Campbell, 2006). Previous interventions, using devolution, have shown progress with precautions that is natural resource management is central to good governance and increasing enfranchisement of rural people. Also, sufficient attention should be paid to the complexity stakeholder roles and relationships at the local level and building of local capacities to participate and influence outcomes (USAID, 2002).

Research problem. Land degradation is a severe problem especially in the steep sloping highlands in eastern Africa. The terrain of these sites is typified by steep slopes which are intensely cultivated. Studies to quantify degradation in form of erosion and run off in the area are limited but it is estimated that average value of soil depletion is equal to about one fifth of average household income (Nkonya *et al.*, 2004). Also, nutrient losses through erosion, runoff and crop harvests are intense and have led to negative

nutrient balances. There are known sustainable land management (SLM) technologies for averting land degradation in terms of soil and water losses (Mekuria *et al.*, 2008). The SLM technologies practiced in the area include the use of trenches, contour bunds, terraces and agro forestry. Traditionally, the development and implementation of SLM technologies was a top-down process, with hardly any involvement of the end users (farmer communities), and policy makers (Bossányi, 2009). As a result, technologies have remained at pilot sites without being scaled up. To address this challenge, devolution, the transfer of roles, responsibilities and rights of natural resource management to institutions and communities (Edmunds *et al.*, 2003), has been proved to be effective in accelerating scaling of SLM innovations beyond pilot sites (Juan *et al.*, 2008). Devolution entrusts communities with decision making tools, allows greater participation in community activities and promotes equity and social development through greater retention and sharing of the benefit derived from natural resources at local level (Ribot, 1999) unlike other strategies. The objective of this study was to evaluate the extent to which devolution influences adoption of SLM technologies in Highlands of eastern Uganda.

METHODOLOGY

Study area. This study was conducted in Kapchorwa, Kween and Bukwo districts on the slopes of Mt. Elgon in eastern Uganda with altitude range of the area is 1,800 - 3,000 metres above sea level. A watershed size per district was the unit of study and these were “Kaseko (45 sq km) “size which cuts across Kapchorwa and Kween districts and, “Kortek” (38 sq km) in Bukwo district both of which are in one landscape that runs across the three districts. Devolution was envisaged as one of the key strategies to cause a wide scale adoption of SLM innovations. The devolution process was of three components, apportioning roles and responsibilities, constituting the devolution structure and operationalising of the devolution process all of which were hinged on the existing District Local Government (DLG) structures in the area of study. The structure was designed to

include parallel hierarchies with donor institution, policy institution, research organisation, local government line departments and farmer communities. Other categories included the private sectors who were indirectly involved. These had overlapping jurisdictions because of the complexities in land management. Project sites were chosen by the stakeholders in a participatory manner during a site inception workshop held in Kapchorwa with sixty two (62) participants drawn from ICRAF-AHI, ASARECA, NARO, Makerere University, DLGs of Kapchorwa and Bukwo, NGOs- KADLACC, KDFA, TOFA and farmer representatives. Participants for this workshop were purposively selected to include farmer representatives from vulnerable areas in the region. As a first step, criteria for site selection was suggested, debated and adopted to be used in deciding sites for implementation. Participants were divided into work task groups in which they generated a list of sites voted and results presented to the plenary. Results from different groups were compiled and a final list generated. As per the ranking, Kortek and Kaseko watersheds in Bukwo and Kapchorwa districts, respectively; were adopted for the scaling up of SLM innovations. During the same workshop, potential interventions were proposed. However, after the first year of the project Kween district was created from Kapchorwa and arrangements were made to form similar structures for the new district. Several meetings and trainings were also conducted to enhance capacities of both local government officials and grass root level beneficiaries in SLM.

The research process. The research process used a qualitative approach and was iterative with multi-scale multi-stakeholder involvement. During this process, relevant key partners and collaborators including; farmers, DLGs officials, NARO, ASARECA and ICRAF-AHI were identified and facilitated to participate in the process. Roles and responsibilities of partners were generated through brainstorming in plenary sessions, scrutinised through discourse while considering competence and, clarified through explanations by the implementers and consultants on SLM. The key partners and their

roles and responsibilities as identified and agreed upon are given in Table 1.

This process was done to ensure equity, effectiveness and efficiency in the management of scaling out the SLM innovations. In addition to the above roles and responsibilities, guidelines on harmonising the study work plans amongst the key partners were developed (Table 2) and adopted.

These guidelines ensured leveraging resources and appreciating partners' activities and streamlined linkages between the various stakeholders of innovation platforms. Further, disbursement of funds to especially, grass root level, was streamlined in the administrative procedures of the districts and thereby ensuring accountability and value for money.

The modalities on harmonising work plans amongst the key partners, streamlining linkages between the various stakeholders, disbursement of resources to site recipients, planning, monitoring and reporting were developed and adopted into a devolution structure (Fig. 1). The flow of information and resources constituted the main catalyst for the operationalising the devolution process.

In the devolution structure, regional and national partners interfaced to share and have a common understanding of the devolution process as a means of enhancing scaling up the adoption of SLM innovations. The regional and national partners worked with the grass root stakeholders through the available administrative structures of the local governments which included the districts and their constituent sub-counties that are also made up of villages. The national agricultural researchers executed their roles of mainly leading and facilitating the scaling up process through both technical and material support. The latter, was through utilisation of the resources channeled directly from the donor to the national research system as opposed to passing such support through another intermediary. Key to the devolution process was the use of district local government structures to champion the adoption process. The Chief Administrative Officer (CAO) who is the district accounting officer appointed the District Focal Point Persons (DFPPs), approved work plans,

TABLE 1. Roles and responsibilities of key partners

No.	Key partner	Roles and responsibilities
1	IDRC	Support research process Address grey area for further capacity building and research Support publications
2	AHI- ICRAF	Coordination of capacity building, research and learning at regional level Synthesizing and harmonizing different country reports Technical backstopping on devolution and scaling up Monitoring and evaluation
3	PAAP-ASARECA	Policy processes analysis, dialogue and advocacy Reporting project activities Linking the project to ASARECA and networking and soliciting funds
4	NARO-BugiZARDI	Lead the scaling up process Initiate, facilitate and manage the innovation platforms Lead in the development and promotion of appropriate SLM technologies Monitoring and evaluation and reporting at project site level Build synergies with ongoing projects
5	District Local Government	Community mobilization Facilitating input delivery Participate in M&E at district level Mainstream project activities in district action programs Facilitate policy formulation that is conducive to the scaling up of NRM
6	Farmer groups/Individual	Involved in community-based land management and learning Play leading roles in information dissemination and scaling up and out of the technologies. Managing social processes and strengthening local innovation systems that enable rural communities to benefit from the technologies and market Providing a bridge between farmers and researchers and extension and Private Sector Voicing the problems and needs of farmers,

requisitions and accountabilities in line with the operational guidelines followed by the district local governments.

The districts' capacity was enhanced through provision of modest office equipment such as communication, computers, cameras, and printers and, capacity building through exposure visits and "write-shops" and project feedback sessions. At the grassroots, the process of building capacity involved participatory identification of training needs at both village and sub-county level platforms and actual trainings. Support was availed in form of necessary inputs (potting polythene, fence wire, wheel barrows, pick axes and spades) and seed of assorted tree species to realise the scale up process. Further, modest funds for decision

making meetings, tours, exposure and exchange visits went a long way to build the cohesiveness of the devolution process. Devolution platform cluster leaders requisitioned for inputs, funds for facilitating decision making meetings and establishment of trenches and contour bunds with contributions from the whole group of farmers through the District Focal Point Persons (DFPPs) who attached cover letters about the subject of request and forwarded them to the CAOs for endorsement and onward transmission to NARO.

Data handling and analysis. The unit of analysis was a household, a comparative analysis of the findings of the base line information and the investigation in the devolved process was used.

TABLE 2. Key guidelines for harmonizing key partner project activities

No.	Activity	Guidelines
1	Harmonising work plans	<p>Work plans should include site stakeholder roles and staff time costs including contributions from all stakeholders and should document progress of related ongoing work and scaling up advancements</p> <p>An activity should be originated and communicated a month in advance before implementation. Institutions which can leverage funds and time should be approached in advance with a brief concept note so that they plan to contribute to the activity</p> <p>Each institution should develop a quarterly work plan and disseminate it to other stakeholders</p>
2	Streamlining linkages between the various stakeholder	<p>Inform site coordinator and project partners of quarterly plans under this project and regular updates of any other site interactions going on outside this project.</p> <p>6-monthly monitoring visit or field day for all project partners and other stakeholders as dictated by the resource envelope</p>
3	Disbursement of funds to site recipients	<p>Funds will be disbursed according to the recipients' organizations rules and procedures.</p> <p>Funds from partners will be released to IPs according to work plans.</p> <p>Site partners will first be trained in institutional accounting requirements. Attach annexes of institutional procedures that site partners will have to adhere to.</p>
4	Planning and reporting	<p>Should be institutionalized right from Farmer Group – IPs – DLG (DFPP) - Principal Investigator[1] (PI) – Project Coordinator</p> <p>Work plans for implementation shall be endorsed by the Project Coordinator through the PI</p> <p>Key partners to communicate their activity plans to PI (refer to site coordination meeting)</p> <p>Field trip reports should be provided at all times to enlighten other members on what has transpired in the field and also prepare for any eventual rebuttal</p>

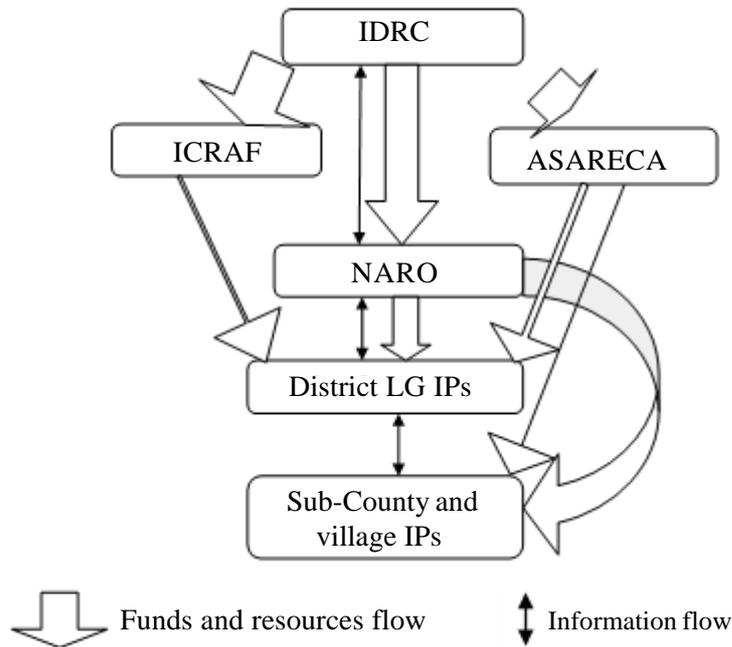


Figure 1. Devolution structure.

This also included discussion of literature reviewed combined with findings from the field activities undertaken to evaluate the process.

RESULTS

Apportioning roles and responsibilities. At all levels, effort was made to transfer some decision making responsibility from regional and national to local level. The researchers led the development and promotion of appropriate technologies; the district leadership was instrumental in mobilising the target beneficiaries, the farmers, through district focal point persons appointed by the Chief Administrative Officers (CAOs) of the respective districts. At the receiving end, the farmers were involved in community-based land management and learning and, played leading roles in information dissemination and scaling up and out of the technologies. At the district level, officials supported grass root level communities through knowledge and guidance in decision making and streamlined SLM activities in district work plans. Political leaders at this level participated in monitoring, decision making and used advocacy

talks during different meetings which enhanced the scale up process.

Operationalising of the devolution structure.

During the evaluation process, grass root beneficiaries were facilitated in the scale up process through technical and material support. This was through utilisation of resources channeled directly to the national research system as opposed to passing such support through other intermediary. Provision of materials such as tree seeds, nursery equipments among others enhanced adoption as evidenced by the increase in the number of households from 241 to 2700 that embraced sustainable land management technologies.

Through the devolution process, the DFPPs (District Focal Point Persons) drawn from DLGs formed the link between the districts and the researchers to whom they were accountable. The CAO, by virtue of endorsing the documents had a responsibility to monitor the activities of the DFPP which, in a way, acted as push for the scaling up process. At grass root level, farmers made work plans and expressed their land management needs through writing requests with

the help of the focal point persons who were well familiar with the communities. This was vital for the farmers to be part of the process and get fully involved. As a result, the importance of the natural resource management units at the districts was put in the limelight.

At village level, the DFPPs guided the farmers on making decisions on what activities to carry out to scale out SLM innovations. Devolution platform clusters, constituted based on interest, consisted of farmer groups and individuals. The clusters aligned their activities along promotion of Agroforestry and soil and water conservation practices.

The agroforestry activities resulted into establishment of tree nurseries, their management and distribution of seedlings. Farmers managed their tree nurseries with guidance of researchers and extension staff. The technical staff provided training on nursery management practices which included how to sow seed, transplant, pricking, potting and watering. This training triggered farmers' interest in tree planting and they established their own small nurseries during the learning process in addition to the group nurseries. These agroforestry activities resulted into increased number of trees (Table 3) incorporated into the farming system as windbreak, hedgerows and as stabilisers along the trenches and contour bunds.

There was a deliberate effort invested in building the capacity of the members of the community. This resulted into an effective and productive participation in the operations utilising the devolution structure. As a result, 12,000 tree seedlings were procured and distributed to 300 households in Kween. On doing this, farmers suggested that they should be given seeds to raise their own nurseries which led to the change in the mode of operations. 219,000 tree seedlings

were raised distributed to 2706 households (30 households in Kapchorwa, 2,100 households in Kween and 576 households in Bukwo).

DISCUSSION

Apportioning of roles and responsibilities. Rationalised role allocation was crucial in operationalisation of the devolution process. Roles of different stakeholders were interlinked especially at monitoring and evaluation which allowed building synergies with other ongoing projects. An innovation platform constituted a working team for all stakeholders where the level of participation was according to roles assigned and influenced by factors like interest, cultural and economic expectations. At grass root level, farming communities derived strength from collective capital (sub-county taskforces) which mobilised communities to develop working schedules, establish and maintain soil and water conservation structures in their fields. In sites where local communities were organised with influential leaders, they managed to secure greater control and benefits accruing from proper management of their land. Experiences here showed that farmers were more willing to participate if they were involved from the start and their leaders played a big role in influencing positive devolution outcomes including increasing the number of people adopting.

Operationalisation of the devolution structure. This approach removed the bureaucracy that is usually experienced with donor funding that is passed through many intermediaries such as international/regional bodies whose roles are usually short-lived as they are project dependent and less sustainable. The engagement of district natural resource units triggered attention for increasing their budgets that had been hitherto very small. This outcome is very important in the scaling out of SLM innovations since the District Local Governments are more cost effective, familiar and close to the communities. The cost effectiveness was reflected among others in their transport and operational costs which were much lower than those of national and regional experts. This has resulted into strengthened contact between farmers and

TABLE 3. Number of trees distributed into the farming system

District	Baseline	Planted trees
Bukwo	22,000	63,903
Kapchorwa	120,000	215,000
Kween		12,000
Total		290,903

District Local Government and streamlined coordination of activities.

According to results in Tables 3 and 4, Kapchorwa communities had the largest number of trees planted and trenches established followed by Bukwo and Kween. This was attributed to their proper organisation in their platform with good leadership and higher level of participation in nursery management activities.

Knowledge and skills gained through training on soil and water conservation measures resulted into increased number of trenches and contour bunds established (Tables 4 and 5). This added value as more land was protected from erosion compared to the baseline at 600 metres of trenches and 800 metres of bunds in Kapchorwa to which Kween was part and 100 metres of trenches and 400 metres of bunds in Bukwo. Establishment of structures alone was not enough, farmers continued with routine de-silting of the trenches to make them effective in controlling run off.

In Table 5, contour bunds were more in Bukwo (9,000 m), Kween (7,000 m) and the least number in Kapchorwa (2,000 m). Contour bunds were easier to construct as they could be established at lower altitudes but also required technical knowledge to measure the contour lines. The types of tree species planted were selected by farmers with guidance from the DFPPs taking care

of food security and environment concerns. The major challenge faced in nursery activities was management where group involvement was low. However, this was resolved by using nursery attendants who were remunerated accordingly and farmers came in once a week. The few farmers who participated more gained from taking a bigger number of tree seedlings when distribution was done.

One of the challenges encountered in operationalising this devolution process was that many of the actors took long to understand the context in which devolution was applied. This created gaps on how devolution through the different administrative structures could be made effective. Putting up proper communication systems and improving understanding through sensitisation of all actors was effective in creating an enabling environment for scaling out the SLM innovations. From meetings held at various levels of the devolution structure, it was evident that there was varying understanding of the process depending on the actor's expectations. For example, at grassroots level, some farmers wanted resources in form of cash and, yet there were cases where such cash would be put to different use. At higher levels, some actors preferred to spend such cash for only meetings and not availing inputs for field activities which would, directly, impact negatively on the farmers.

TABLE 4. Trenches constructed

District	Baseline	Constructed
Bukwo	100	5,000
Kapchorwa	600	11,763
Kween		4,000
Total		20,763 metres

TABLE 5. Contour bunds constructed

District	Baseline	Constructed
Bukwo	400	9,000
Kapchorwa	800	2,000
Kween		7,000
Total		18,000 metres

Major challenges of this study included;

- (i) Many of the actors took long to understand the context in which devolution was applied. This created gaps on how devolution through the different administrative structures can be made effective.
- (ii) Maintaining adequate feedback mechanisms to ensure ongoing learning remained a key role mainly for the local governments at district level even when powers were devolved to lower levels
- (iii) Establishing effective accountability and performance management mechanisms to allow government maintain and continue operationalising devolved powers beyond the project time

Key lessons

- (i) Properly designed reward systems are critical in triggering increased participation and adoption of SLM innovations
- (ii) Efforts to foster collective action in sustainable land management should be considered especially if the scale up process is to be achieved, this includes working through local institutions in mass mobilisation
- (iii) Farmers are willing to participate in collective management of land if devolved powers are clear, benefits are for the majority, the problem cannot be solved individually and are aware of the consequences of poor management practices

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REFERENCES**CONCLUSION**

This study explored the influence of devolution on adoption of SLM technologies. According to outcomes, generation of consensus on how to operate is a crucial entry point for the devolution process. Assignment of clear roles and responsibilities facilitates empowering of the stakeholders to manage the process of scaling sustainable land management innovations.

Devolution of roles and responsibilities is a new concept in advancements of scaling sustainable land management innovations. A devolution structure hinged on the local government structures with involvement of both technical and policy makers influences adoption and is sustainable beyond pilot sites. The devolution process requires a trigger which may be in the form of knowledge, skills, necessary inputs and enabling governance structures to catalyse the scaling of SLM innovations.

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