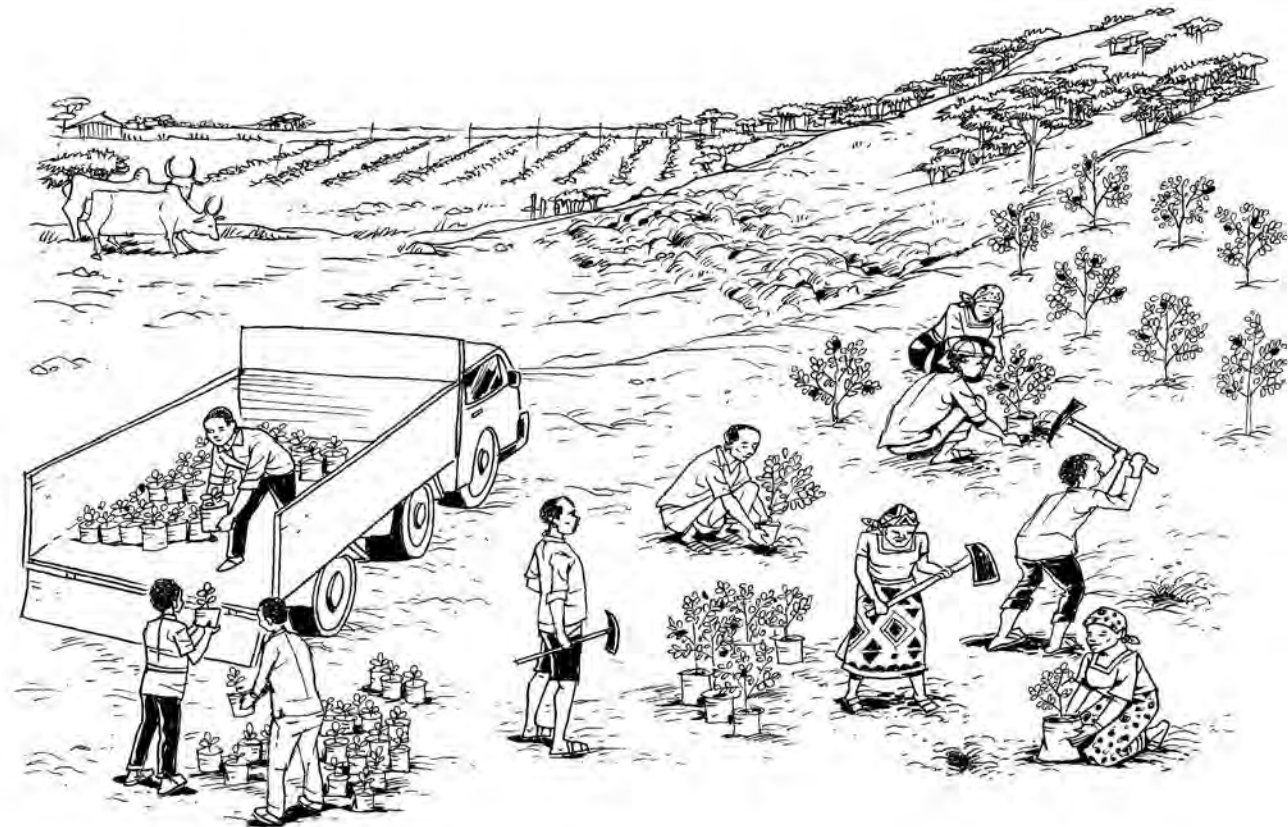


Role of Collective Action and Policy Options in Fostering Participation in Natural Resource Management



With globalization and liberalization, combined with democratization and the information revolution, the roles of governments and socioeconomic actors have changed significantly. From a direct role in delivery, governments are now beginning to act as facilitators. At the same time, communities are demonstrating far greater interest in public affairs and committing themselves to contribute more actively to the socioeconomic development of their countries. Furthermore, globalization, marketization, agglomeration, and corporatization of the economic sector are reducing policy space for the government, which diminishes the state's ability to manage information, respond to contingencies, and reach out to the poor in a manner that is mutually beneficial, transparent, and accountable (UNESCO, 2007). In such changing circumstances, governments, and NGOs, among other practitioners, should aim

to transform themselves from using paternalistic approaches to using engaging partnerships with local institutions.

The past decade has seen the benefits of transferring control over natural resources from central governments to local bodies. Community-based management and the empowering of local communities hinge on concepts such as co-management, using local/indigenous knowledge, recognizing local institutions, and establishing a common property regime (Ostrom, 1990; Berkes, 1989). Local users often have intimate knowledge of the resource and because their livelihoods depend on it, they have the greatest incentive to maintain the resource base. It is now widely believed that people will only defend common properties if they feel they have a stake in them (Ostrom and Wertime, 2000). Therefore, giving certain benefits or empowering local

users to be appropriators encourages communities into using a common resource in a sustainable manner.

The success of community organizations in the management of natural resources depends largely on collective action so that where local institutions are self-organized, the chances of success are higher. Social capital creates the capacity for collective action, which allows for better bargaining power, especially over rights governing natural resources that may be considered 'common property.' In Eastern Africa, as in many other parts of Africa, collective action is recognized and encouraged for development among rural populations (Place *et al.*, 2004).

Social capital, which is categorized into structural and cognitive components, is often associated with the ability of groups to act collectively. For instance, structural social capital includes composition and practices of formal and informal local institutions that are instrumental in community development (Sultana and Thompson, 2003). It is built through transparent decisionmaking processes, accountable leadership, and practices of collective action and mutual responsibility. Through structural social capital, groups or communities take collective action through established roles and social networks that are supplemented by rules, procedures, and precedents. On the other hand, cognitive social capital embraces values, beliefs, attitudes, and social norms that influence people and communities toward collective action (Sultana and Thompson, 2003). The values include cooperation, trust, solidarity, and reciprocity shared among members of a community, which create conditions under which communities can work together for a common good.

Natural resource management (NRM) is an approach that integrates research of different types of natural resources into stakeholder-driven processes of adaptive management and innovation. Local institutions should, through collective action, use NRM to improve livelihoods, ensure agroecosystem resilience, agricultural productivity, and availability of environmental services. NRM should help solve complex real world problems affecting natural resources.

There is a need for a holistic approach that facilitates decisionmaking at the landscape level as a substitute for isolated efforts. To achieve this goal, the spirit of collective action endemic in many

societies in eastern Africa needs to be drawn upon in development and conservation activities. At the local level, partnerships among research, development, and conservation agencies can play a crucial role in ensuring more inclusive decisionmaking at all levels and to link livelihood goals with conservation objectives. This approach necessitates collaboration with local government structures at various administrative levels (Tanui *et al.*, 2007).

Policies and institutions have often caused important and sometimes unintentional impacts on land degradation and on how natural resources are used. Institutional development is particularly important in the case where common property and open-access resources prevail. Policies on natural resources should ensure that there is close interaction with farmers to increase the understanding of the natural resource dynamics, as local resource users have a wealth of accumulated transmitted knowledge across generations about natural resource status, typology, degradation, sensitivity, resilience, and value for livelihoods.

Development and conservation interventions continue to be carried out with an uncritical view to equity and possible negative repercussions on certain social groups and to environmental sustainability, while local institutions (rules and structures) remain largely invisible to outside actors. Development actors tend to ignore local institutions and their role in livelihoods, preferring instead to set up new structures—representing both a lost opportunity as well as marginalizing local institutions that work. Research and development organizations focus on individual over collective decisionmaking, often leading to solutions that bring benefits to some groups at the expense of other groups either because others do not access benefits or because actions taken by some individuals have a negative impact on others. For the full potential of collective action to be realized in development and NRM reforms in institutional practice and local policies are needed (German *et al.*, 2008).

Community-based management and empowering local communities are based on co-management, using local/indigenous knowledge, recognizing local institutions, and the establishment of common property regime. Local users often have intimate knowledge of the resource and, because their livelihoods depend on it, they have the greatest incentive to maintain the resource base. However, community-based NRM can only succeed through

building social capital, enhancing collective action, and empowering communities to be involved in policymaking and decisionmaking. Therefore, the objective of this study was to illustrate the importance of local collective action institution, and their contribution to NRM and setting policy options to foster their participation.

Some of the specific objectives were to examine the role and capacity of local collective action institutions in NRM, to illustrate the changing nature of local collective-action institutions in NRM, and to suggest some policy options that can foster collective action in NRM. Some of the research questions the paper seeks to answer are as follows:

1. What roles can the local institutions play in NRM?
2. How did collective action institutions evolve over time?
3. What policy options can foster collective action of local institutions in the management of natural resources?

Methodology

This paper highlights different modes of collective action that were randomly found in the countries under study by the African Highland Initiative (AHI). It illustrates how collective action in different scenarios has managed to solve problems facing the various communities. It is worthwhile to note that these methodologies were not predesigned but rather a learning experience and integration of various activities accomplished through collective action. These are lessons and experiences from the AHI projects aimed at improving livelihoods of grassroots communities. A descriptive meta-analysis on the growth, roles, activities of local institutions, and impacts in the countries was compiled in the form of tables.

Data were collected from the Gununo Watershed and surrounding villages in southern Ethiopia, which used an approach grounded on collective action and indigenous knowledge to control porcupines that were destroying crops from farms to engage in, soil and water conservation, and to enhance improved seed dissemination through local bylaws. In Kenya, data were collected from groups in the eastern and southern parts of Mt. Kenya forests and their changes over time to illustrate the role of collective-action institutions in managing forest

resources, improving agricultural productivity, and generating income. In Uganda, data were collected from the Tuikat Watershed in Kapchorwa District to demonstrate the development of groups in addressing marginalization and inequality issues, soil and water conservation, local innovation and use of traditional indigenous knowledge. In Tanzania, data were collected from the northern Highlands of Tanzania in Moshi Rural (Kilimanjaro region) and Arumeru districts (Arusha region) to determine different roles of groups in NRM.

Study area

The Gununo Watershed is one of the sites of research where AHI, in collaboration with Areka Agricultural Research Centre in Ethiopia, is conducted. Located in Wolayita zone of southern Ethiopia, its population pressure is high. The area of the watershed is 544 ha and residents come from more than 622 households. Land scarcity and poor crop performance are big problems in the watershed. The area is located at an altitude between 1950 and 2100 m above sea level with an annual rainfall of 1350 mm. The area has low fertility, which adversely affects agricultural productivity. Through collective action and the development of by laws with the help of AHI, farmers were able to develop a system of improved seed dissemination, porcupine control, and soil and water conservation.

The Mount Kenya region groups from Embu and Meru South in Kenya were studied. The Mount Kenya ecosystem is categorized into four broad zones based on vegetation, altitude, land use, and management. It is composed of a forest reserve that covers an area larger than 200,000 ha, spanning Embu (18,398 ha), Kirinyaga (29,215.30 ha), Meru (53,560.60 ha), Nyeri (60,402 ha) and Tharaka Nithi (39,300 ha). The forest is one of the largest, most ecologically significant, and commercially important natural forest areas in Kenya and is considered among the highest priority forests for national conservation (Wass, 1995). It exerts a profound influence on the livelihoods of the communities living within this region. The forest presents a rich biological diversity that contains diverse vegetation that includes endemic afro-alpine plant species as well as the commercially valuable *Juniperous procera*, *Ocotea*, *Olea*, *Podocarpus*, and *Vitex* timber species (Emerton, 1999).

Mount Kenya forest forms a major water catchment area from which two of the country's five river basins

arise, the Tana and Ewaso Nyiro, which together supply water to more than a quarter of Kenya's human population and more than half its land area (Wass, 1995), including the five main hydroelectric power sources that, in the aggregate, provide nearly three quarters of national electricity requirements. Forest degradation and excision has been taking place in the forest's long history and, as a result, there has been scarcity of forest products leading to a ban in entry and harvesting of products, from the forest. Communities, especially those in Upper Imenti, decided to form groups to curb the alarmingly high rate of deforestation while at the same time conducting income-generating activities.

The unreliable rainfall and the consequent insufficient water for agriculture were a problem in some areas in Mt. Kenya and the farmers expressed the need to have technologies for water harvesting and also crop varieties that are drought-tolerant. This was especially so in the drier areas of Laikipia District and Meru. These, coupled with the forest degradation, motivated the catalyzed formation of several groups to address the various problems facing the communities.

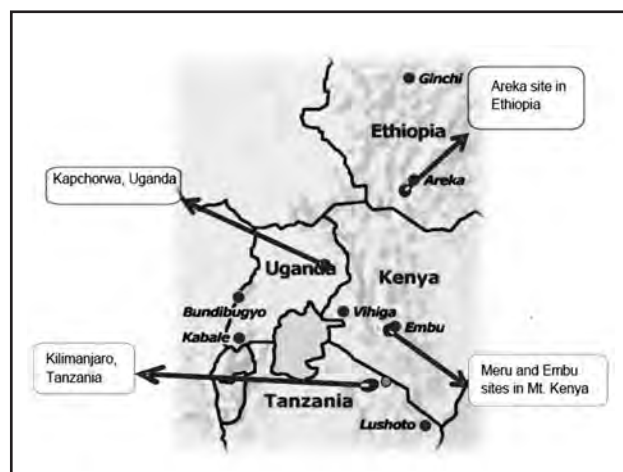
Kapchorwa District is situated on the slopes of Mt. Elgon in eastern Uganda. The district stretches from an altitude of 600 m above sea level (in the lowlands) up to 3000 m above sea level in the highlands. The Kapchorwa District Landcare Chapter (KADLACC) has played a major role as a district-level innovation platform. It works closely with local, district, national, and regional member stakeholders, including AHI, Mt. Elgon Ecosystems Regional Program (MERECEP), NAADS, Uganda Wildlife Authority (UWA), and UNDP. KADLACC is managed by a steering committee.

Data collection

Data were collected from collective action groups/villages in Kenya, Uganda, Tanzania, and Ethiopia. These groups/villages were picked from the various groups studied and monitored over varying periods of time, depending on the country, to determine their growth in terms of capacity and their adaptation to suit current trends of decentralization and participation of communities in NRM. These groups were selected due to their evolution and adaptation to these changing trends in terms of institutionalization and formation of bylaws. A total of 14 groups in Uganda, 12 in Kenya, 34 in Ethiopia, and 50 in Tanzania were selected from the different

studies across the countries. The numbers differed due to differing scopes and objectives of the different studies in these countries.

Various participatory methods and tools had been used to collect information from the four countries. In the Kenyan and Ugandan sites, PRA methods, village meetings, and group discussions were carried out to facilitate interactions with community members, forest managers, and other key informants in the area and to get their perspectives on collective action. Historical trend analyses were conducted to capture the history of the groups and their evolution over time. Participatory action research was conducted in Ethiopia on how to enhance improved seed access and control of pests in the Gununo Watershed. In Tanzania, focus group discussions were held to get information and to better understand group activities.



One of the AHI Project sites (adapted from AGILE 2007).

Results and discussion

Roles of collective action-institutions

Results from the studies indicated that collective-action institutions were involved in various activities aimed at NRM and improvement of livelihoods (Table 1). They further indicated the groups' major roles in NRM, rehabilitation and enrichment, innovation and use of traditional indigenous knowledge, conflict resolution, networking, and, to some extent, ensuring equitable distribution of resources among the poor and the marginalized.

Collective-action institutions in eastern Africa (Kenya, Uganda, Tanzania, and Ethiopia) have been involved

Table 1. Roles of collective-action institutions in Eastern Africa.

Percent of groups/villages utilizing various modes in collective action*				
Mode of collective action	Kenya	Uganda	Ethiopia	Tanzania
Innovation/use of traditional indigenous knowledge	75	64	85	84
Management and conservation of natural resources	100	100	11	12
Rehabilitation and enrichment	67	36	11	6
Conflict resolution	42	14	85	82
Networking	92	100	100	18
Equitable distribution of resources to marginalized (e.g. women and the poor)	17	21	14	60

*The N value in Kenya-12, Uganda-14, Ethiopia-34 and Tanzania-50. Value in each cell is a percentage of the total number of groups per country

in various modes of collective action ranging from innovations and use of traditional indigenous knowledge to conflict resolution, management, and networking. Results indicated that most groups across countries had networking links with other partners (Table 2). This was crucial, especially in terms of information flow, introduction of new technologies, and ensuring access to inputs and financial facilities. Majority of the groups were also innovative in the use of indigenous knowledge in either management, conservation, or substituting technologies with indigenous ones, which were more popular and cost-effective. In Kenya, 75% used traditional knowledge, whereas Uganda, Ethiopia, and Tanzania recorded 64%, 85% and 84% usage, respectively. All groups studied in Kenya and Uganda had been involved in some form of NRM.

Majority of the groups were also involved in conflict resolution, which is a crucial aspect that must be addressed in collective action and management: 42% in Kenya, 14% in Uganda, 84% in Ethiopia, and 82% in Tanzania. Although not the majority, some groups also recognized the role of marginalized groups in society such as the poor, the landless, and women by addressing issues affecting them.

Evolution of local institutions

Results from Uganda indicated that all groups evolved into institutionalized collective-action entities registered at some level with bylaws to govern the functioning of the groups. This reflects their level of adaptability and capacity to handle emerging issues. Those that had not been registered at the time of their formation became registered and those that had been registered at the time of formation had either modified their structure or registered with higher authorities.

Results from Ethiopia showed that farmers managed to solve age-old problems through collective action. They were successful in disseminating improved seeds through use of bylaws, which they developed with the help of AHI. They also managed to control porcupines that greatly affected agricultural production. This indicates the capacity of collective action not only to improve livelihood but also to contribute to policymaking. This capacity is further demonstrated in the case of KADLACC in Uganda and MEFECAP in Kenya.

Table 2. *Evolving collective-action institutions in Kapchorwa District, Uganda.*

Name of collective-action institution	Old structure	Present structure
Trikat watershed	Had small watershed committees	Registered with KADLACC, Parish level; has village watershed committees.
Turban Organic Farmers Association	Not registered	Registered with KADLACC; has parish committees
Kapchorwa Bee Keepers and Agroforestry Association	Registered at district level	Registered with KADLACC
Keptotoy Integrated Farmers Association	Registered at district level Had management body	Registered at District level; registered with KADLACC, has executive committee
Kapchorwa Community Development Association	Registered at district level	Registered at national level; registered with KADLACC
Sabiny Community Development Association	Not registered	Registered with KADLACC
Bukwo Agroforestry Association	Registered at subcounty level	Registered with KADLACC
Chesower Integrated Farmers Association	Not registered	Registered with KADLACC and at sub county level
Gloria Mercy Women Group	Registered at district and sub county levels	Registered with KADLACC
Arokwo Growers Farmers Association	Not registered	Registered at subcounty level and with KADLACC
Kapchorwa Agro Veterinary Services	Registered at district level	Registered with KADLACC
KADLACC	Registered at district level	Planning to upgrade into an NGO

KADLACC is a platform under which 14 groups, NGOs, and local government bodies are involved in NRM. It contributes to policy making through supporting the development of bylaws on free grazing, boundary management, and co-management of natural resources. It builds the capacity of farmer groups and also links them to donors, thereby contributing to income generation. It trains them on bee keeping, soil and water conservation, agro-forestry, promotion of efficient wood-burning stoves, apple growing, and fish farming (Table 3).

MEFECAP (Kenya), on the other hand, has activities ranging from nursery establishment, tree planting events, forest protection and management, and rehabilitation and enrichment, among others. It is an umbrella body with 11 smaller groups involved in these activities. The association has been carrying out activities such as protecting the forest through

patrolling and reporting illegal activities, planting and maintaining plantations, protecting water catchment areas by planting appropriate tree species, uplifting the standards of living of members by starting income-generating projects, and educating its members on the importance of forests and environmental conservation.

Role of policy in fostering collective action

Collective action improvement is the aspect of NRM that can, too often, be neglected. Yet, improvements in human capital have been the source of most of the gains in productivity of agricultural land and labor in the past. Given that the land frontier has been reached in most

Table 3. Major KADLACC member organizations and activities undertaken.

			Budgetary contributions (US\$)	
Organization	Site	Activities	Community	AHI
Bukwa Agro-forestry Farmers Association	Bukwa subcounty	<ul style="list-style-type: none"> ◆ Planting of agroforestry (AF) trees and napier grass along contour bands; Rhodes grass <i>Calliandra</i> for fodder ◆ Nursery establishment and management for agroforestry, fruit trees, and passion fruit seedlings. ◆ Soil and water conservation 	731.70	304.80
Tuban Organ Farmers Association	Tegeres subcounty	<ul style="list-style-type: none"> ◆ Apple growing and management ◆ Fish farming 	1,463.40	487.80
Tuikat Watershed	Kwosir subcounty	<ul style="list-style-type: none"> ◆ Fish farming ◆ Apple growing and management 	1,463.40	487.80
Kaseko Soil and Water Conservation	Benet subcounty	<ul style="list-style-type: none"> ◆ Promotion of fuel-saving technologies ◆ Demonstration on multipot stove installation 		365.90
Kaptotoy Integrated Farmers Association	Binyiny subcounty	<ul style="list-style-type: none"> ◆ Soil fertility and water management ◆ Contour siting and construction ◆ Agroforestry – planting of <i>Grevillia</i> tree seedlings along the contour bands 	731.70	304.80
Kapchorwa Bee Keepers and Agroforestry Association	Kwosir and Tegeres subcounties	<ul style="list-style-type: none"> ◆ Langstroth hives and KTB hives 	914.60	365.90
Arokwo Growers Association	Tegeres subcounty	<ul style="list-style-type: none"> ◆ Soil and water conservation ◆ Napier grass along the contour plants for fodder and for stabilizing contour bands ◆ Agroforestry 	731.70	304.80

countries and that areas available for farming and forestry are likely to decline, policies to enhance rural human capital need to be given high priority.

Various studies indicate that effective collective action in watershed management improves natural resource conditions, reduces vulnerability to drought, and improves cash incomes for the poor via diversification into marketable products; marketing

groups pay farmers higher prices than do brokers and middlemen. Performance improved where decisionmaking is participatory, members make regular contributions and provide starting capital; levels of collective action in watershed management increase where groups have prior history of cooperation, where they have conflict resolution mechanisms, and are closer to markets (Shiferaw *et al.*, 2006).

Proper policies are thus required to ensure poverty reductions. These will surely require integrated and effective implementation of a wide range of policy initiatives.

Conclusions and recommendations

Studies have shown that local institutions play major roles in the management of natural resources. The roles of the collective-action institutions have been changing over time from being directly controlled by governments to being a decentralized system where they are more involved in decisionmaking. They have further expanded their roles from lobbying to conflict management, raising funds, negotiating during most meetings, initiating rural development and forestry development activities, and, more importantly, developing systems that introduce equity principles and address the needs of the poor and disadvantaged members of the community. The institutions have also pioneered income-generating projects and dissemination of improved technologies, which have improved the livelihoods of grassroots communities. The initiatives have added value to collective action in a situation where communities would hardly realize any benefit from natural resources.

Some major roles of collective institutions as a result of their evolution include capacity building as result of their vast traditional indigenous knowledge and benefit sharing, whereby availability of both tangible and intangible benefits to local institutions contributes to the cohesiveness of the members (Ongugo *et al.*, 2008; Stroud, 2003). Another important role where natural resources are concerned is the management role. Communities throughout the world are increasingly involved in the management of local natural resources and the environment. This trend toward participatory decisionmaking introduces challenges and opportunities for practitioners, donors, and analysts. Last is the conflict resolution role; conflicts are inevitable, especially in the use and management of natural resources in brittle ecosystems (Waithaka and Minde, 2007). Measures to reduce conflicts suffer in the wake of a lack of clear policy guidelines and weak institutional setups to enforce social order. Social capital is a potential least-cost means of

addressing rural poverty, which can be sustained at reasonable costs in a community.

Local collective-action institutions have been evolving over time to adjust to emerging situations and to address various problems affecting them. As such, they have utilized their indigenous knowledge and sometimes able to synchronize with technical knowledge received from extension services. They have succeeded, to some extent, but due to various constraints (ranging from high poverty levels to lack of incentives to be involved in collective action), they have been unable to realize their full potential. This requires that policies be geared toward fostering their capacity building and improving social capital to ensure that they are involved in NRM.

While multiple strategies could be pursued to strengthen rural institutions and facilitate the development of collective-action institutions, the following focal interventions may address bottlenecks in collective natural resource management: apart from governments instituting legal and policy frameworks that recognize collective-action institutions, they should also strengthen rural institutions and farmer marketing groups. These would require public-sector resources and action plans to address the specific needs and constraints of similar organizations. Such support is justified, given the livelihood benefits to the rural poor and the growth linkages derived from improved commercialization of agriculture.

Source

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