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**The influence of Community Based Organizations' (CBOs') characteristics, opportunities and challenges on sustainable management of forest, water and soil commons: a case of Mt. Elgon ecosystem, Uganda.**

By

Stonewall Shaban Kato <sup>1</sup>\*, James Okot Okumu <sup>2</sup> and Joseph Obua <sup>3</sup>

<sup>1</sup> Makerere University, P.O Box 7062, Kampala, Uganda, <sup>2</sup>Makerere University, Department of Environmental Management, Kampala, Uganda and <sup>3</sup> Inter-University Council for East Africa, P. O Box 7110, Kampala.

*\*Correspondence:* E-mail: [stonewallkato@yahoo.com](mailto:stonewallkato@yahoo.com)

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## **Abstract**

Between 2009 and 2010, Community Based Organizations' (CBOs) characteristics, opportunities and challenges faced in the management of forest, water and soil in the Mt. Elgon ecosystem in Uganda were assessed. The aim was to examine how CBO characteristics, opportunities and challenges influence their roles in the management of forest, water and soil resources. The study was conducted on a case of collective action by communities who improved their rights over common resources management by adapting appropriate institutional rules and practices as government role in forest, water and soil resources management dwindles in the area. Data were collected using semi-structured interviews and focus group discussions and then entered in SPSS to create data file and later generate descriptive statistics. Multiple Linear Regression (MLR), chi-square tests, Kruskal-Wallis and Median tests were applied to show the relationships between the roles played by CBOs, their characteristics, opportunities available to them and the challenges they encountered while carrying out forest, water and soil management. Results reveal that CBO's longevity, size of area of operations and membership strength have significant positive correlation with CBOs' roles in forest, water and soil management ( $t=1.617$ ,  $0.948$  and  $0.043$  respectively at  $p<0.05$ ). It is recommended that there is a need to put in place a CBO advisory agency in the Mt. Elgon region to oversee community management of forest, water and soil around MENP.

*Key words:* CBOs, characteristics, opportunities, challenges, influence and roles.

## **Introduction**

From the 1980s NGOs and CBOs have been playing important roles in the socio-economic growth of developing countries by participating in development activities including management of critical ecosystems that support peoples' lives (APO, 2004; SDC, 2009). However, the distinction between the two has been confused by many. not all NGOs are CBOs. CBOs (also referred to as grassroots organizations or peoples' organizations) are distinct in nature and purpose from NGOs. Whereas NGOs (local, national and international) are "intermediary" organizations, which are formed to serve others, CBOs serve a specific population in a narrow geographic area (Fischer, 1994; Flower, 1997). CBOs are normally "membership-based" organizations made up of a group of individuals who have joined together to further their own interests e.g.: women's groups, credit circles, youth clubs, beekeepers, forest resource users and farmers' associations. In Uganda, CBOs have played crucial roles in environmental management at various administrative and governance levels (Nanna *et al.*, 2002; UNESCO, 2009). In the process, they have facilitated the implementation of decentralization reforms including those in the natural resources sector because they operate at the grassroots level with local communities. In view of these, CBOs have become familiar with the management, utilization and conservation of natural resources in their areas of operation. On Mt. Elgon, It was found that areas (parishes) with functional CBOs were more likely by 1.08, 1.36 and 1.34 odds ratios to participate in the management of forests, water and soil respectively than those from areas without CBOs (Kato, 2013). However, CBOs' success

depends on their characteristics such as membership composition and strength, how they seize and utilize prevailing opportunities and address the challenges they face. The geographical location, socio-cultural, political and economic situations influence CBOs' characteristics and functions. CBOs that operate around Mt. Elgon National Park and are involved in the management of forest, water and soil have, over time, adapted characteristics that enabled them to operate in the last two decades. CBOs' opportunities are situations that enhance their operations, while the challenges they face comprise situations that need management efforts in order to achieve their goals.

The CBOs that operate around MENP are familiar with both past and present forest, water and soil management situations in their localities but their successes have been affected by inadequate resources, limited technical knowledge about forest, water and soil management to the extent that they have not fully utilized opportunities such as the community support that they enjoy. Furthermore, they have not fully addressed the numerous challenges they encounter such as high reliance on donor funding and inadequate transparency in their organizations. The CBOs have, therefore, not fully achieved their goals because of poor internal organization and presence of operational inadequacies brought about by both internal and external factors. In view of the above, this paper examined the characteristics of CBOs, the opportunities at their disposal and challenges encountered while managing forest, water and soil around MENP. This collective community action is an attempt to improve their rights over common resources management by adapting appropriate institutional rules and practices to fill in the gaps created by government.

## **Methods**

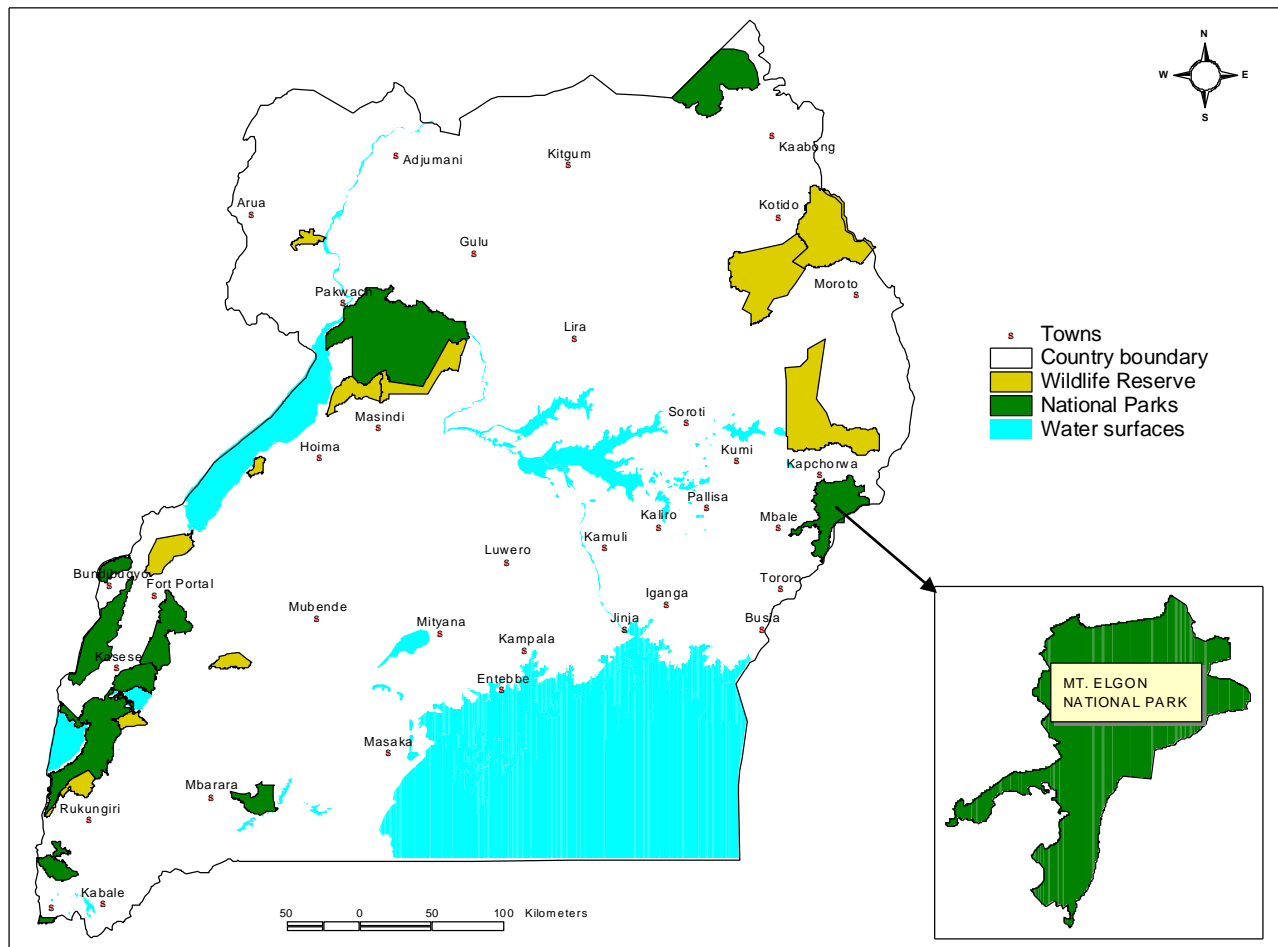
### **Study area**

Mt Elgon National Park is part of the Mount Elgon ecosystem ( $0^{\circ}5' - 1^{\circ}25'N$  and  $34^{\circ}14' - 34^{\circ}44'N$ ) (Republic of Uganda, 1996; UWA, 2000). It is located in Eastern Uganda on the border of Uganda and Kenya (Figure 1). The highest point, Wagagai, is 4,321 metres above sea level, and is the second highest massif in Uganda after the Rwenzori Mountains (Scott, 1994b). The park covers parts of Manafwa, Bududa, Mbale, Sironko, Kapchorwa and Bukwo districts. All the districts extend from the lowlands to the forest on the mountain and are separated by rivers or streams radiating from the mountain and ridges. The districts are divided into administrative units comprising county, sub-county, parish and village (UBOS, 2010) (Table 1). There are 111 parishes that are adjacent to the park's boundary; out of which, 35 parishes were selected for this study. The protected area begins at about 2,000 meters above sea level up the mountain. Most of the boundary is adjacent to land that is almost completely under agriculture, reflecting the high human population density of the area that is dependent on farming as the main economic activity. The average population density around the park is 756 people per square kilometer in the Bugisu sub-region and 327 persons per square kilometer in the Kapchorwa sub-region (Thor *et al.*, 2008; UBOS, 2010). The Uganda side of the Mount Elgon terrain is highly

rugged and most of the parishes that are adjacent to the park lie between 1,800-2,500 meters above sea level with no access roads except in few areas (Scott, 1994b; UWA, 2000).

**Table 1: Administrative units on the Uganda side of the Mt Elgon ecosystem**

| Unit       | Description  |
|------------|--|
| Village    | Smallest administrative unit consisting of about 50-250 households     |
| Parish     | Second smallest administrative unit consisting of about 10-25 villages |
| Sub County | Medium size administrative unit consisting of 2-8 parishes             |
| County     | Large administrative unit consisting of 2-10 Sub Counties              |
| District   | Larger administrative unit with 1-2 counties                           |



**Figure 1: Location of Mount Elgon National Park in relation to other National Parks and Wildlife Reserves in Uganda**

## Data collection

Focus group discussions and semi-structured interviews were held with 34 CBOs identified in the study parishes. The interviews were conducted with the help of questionnaire that comprised pre-categorized answers in a standard sequence and open handed questions. Responses to questions that sought opinions on CBOs activities were categorized as 1=very low, 2=low, 3=medium, 4=high and 5=very high. Additional data were collected through physical observation, forest and farm walks and visits to water sources. However, registration status was not assessed because registration status variable had very inadequate data for multiple logistic regressions (MLR) analysis.

## Data analysis

Data were entered in SPSS to create data file and generate descriptive statistics. Multiple Linear Regression (MLR) was used to show the relationship between CBOs' activities related to forest, water and soil management and their characteristics. The equation used was:

$$Y = f(X_1, X_2, X_3, e)$$

Where Y= activities undertaken by CBOs as measured by the number of actual roles performed out of the total number of expected roles.

$X_1$  = CBO's longevity (number of years in existence).

$X_2$  = size of administrative unit covered by the CBO (village, parish and sub county).

$X_3$  = Membership size (number of people).

e = error term and f = constant.

MLR was used because it is an appropriate method for analyzing small sample size data with continuous group variables. MLR has been successfully applied by Njoku *et al.* (2009) to assess factors that influence role performance of community based organizations in agricultural development in Imo State of Nigeria.

Non-parametric chi-square ( $\chi^2$ ) test, Kruskal-Wallis and Median tests were used to analyze data that were not continuous, ungrouped and discrete such as funding sources, training, management of revolving fund, saving levels and corruption, to show the association between CBOs' characteristics, opportunities, challenges and their involvement in forest, water and soil management. Chi-square ( $\chi^2$ ) test, Kruskal-Wallis and Median tests were based on Nyakundi (2010) and Mridula (2011). The t-statistic was used to generate coefficients or multipliers that describe the effect of independent variables such as registration status, longevity, membership strength and extent of administrative unit size coverage on dependent variable, in this case the roles of CBOs in forest, water and soil management.

## Results

### CBOs' characteristics

CBOs' characteristics such as registration status, longevity, membership strength and extent of administrative unit size coverage that influenced their operations are given in Table 2.

**Table 2: Characteristics of CBOs working around MENP**

| S/no. | CBOs' characteristics                             | status         | response |
|-------|---|----------------|----------|
| 1.    | <b>Registration status</b>                        | Registered     | 88.2     |
|       |   | Non-registered | 11.8     |
| 2.    | <b>Longevity</b><br>(Age in years)                | 1-3            | 35.3     |
|       |   | 4-6            | 35.3     |
|       |   | Above 6        | 29.4     |
| 3.    | <b>Administrative unit size coverage</b>          | Village        | 29.5     |
|       |   | Parish         | 47.0     |
|       |   | Sub county     | 23.5     |
| 4.    | <b>Membership strength</b><br>(Number of members) | 1-20           | 20.6     |
|       |   | 21-40          | 35.3     |
|       |   | Above 40       | 44.1     |

CBOs' involvement in forest, water and soil management around MENP included promotion of forest products' alternatives, forest restoration, working in partnership with UWA in MENP boundary planting, advocacy for resource users' rights, promotion of bee keeping and monitoring the park's resource use. In order to improve on their operations, CBOs developed rules and regulations, administered penalties to members who broke the rules and regulations, resolved conflicts, mobilized and educated the local communities on forest, water and soil management issues, trained members on forest, water and soil management practices and raised funds from both internal and external sources to support their operations. Water management activities involved construction and maintenance of soil catchment trenches/bunds, protection of water sources such as springs and wells, construction of gravitational piped water structures for the local communities, promotion of rain water harvesting technologies and strip cropping practices. CBOs also promoted contour/conservation farming, planting of nitrogen fixing crops, planting of trees and grass on fragile grounds, mulching, use of plant and animal manure and fertilizers.

Table 3 shows the relationship between CBOs’ role (criterion or dependent variable) and selected characteristics (predictor or independent variables). The characteristics tested were longevity, extent of administrative unit coverage and membership strength. The null hypothesis tested was that involvement of CBOs in forest, water and soil management is not influenced by their characteristics.

**Table 3: Results of Multiple Linear Regression showing relationship between involvement of CBOs in forest, water and soil management and their characteristics**

| <b>CBOs’ characteristics</b> | <b>t-value</b> | <b>P-value</b> | <b>Significance</b> |
|------------------------------|----------------|----------------|---------------------|
| CBO's longevity              | 1.617          | 0.116          | S                   |
| Administrative unit coverage | 0.948          | 0.351          | S                   |
| Membership strength          | 0.043          | 0.966          | S                   |

S=Significant

Results reveal that CBO’s longevity, the extent of administrative unit coverage and membership strength have significant positive correlation with CBOs’ roles in forest, water and soil management (t-values are 1.617, 0.948 and 0.043 respectively,  $p \leq 0.05$ ). This implies that the longer the CBOs operate in an area the more experience they acquire and therefore well placed to get more involved in the management of forest, water and soil. This is in consonance with the administrative unit size coverage; the bigger they expand administrative unit size coverage, the more roles they take on to match the increased challenges relating to down, upstream and activities across mountain ridges that need coordination. Similarly, the more members CBOs’ recruit, the greater they are involved in forest, water and soil management due to increased numerical strength and collective human capacity.

CBOs’ funding is crucial for their successful operation. Analysis of CBOs’ funding sources revealed that most CBOs that were operating around MENP obtained their funding indirectly from government and membership subscriptions; followed by donors and fines. Very few CBOs had own financial resources (Table 4).

**Table 4 CBOs' funding sources**

| <b>CBOs' funding sources</b> | <b>response</b> |
|------------------------------|-----------------|
| Donors                       | 20.6            |
| Government                   | 29.4            |
| Membership subscription      | 29.4            |
| Fines                        | 8.8             |
| Investment                   | 2.9             |
| Personal contribution        | 8.8             |

Table 5 shows the association between CBOs' characteristics and their roles/activities in forest, water and soil management.

**Table 5: Chi-square tests of CBOs' characteristics and their roles**

| <b>Variables</b>                | $\chi^2$ | <b>P-value</b> | <b>df</b> | <b>Significance</b> |
|---------------------------------|----------|----------------|-----------|---------------------|
| Funding source x training       | 7.459    | 0.189          | 5         | Ns                  |
| Funding source x revolving fund | 7.227    | 0.204          | 5         | Ns                  |
| Funding source x work planning  | 7.048    | 0.245          | 5         | Ns                  |
| Funding source x record keeping | 7.342    | 0.197          | 5         | Ns                  |
| Activities x training           | 0.408    | 0.816          | 2         | Ns                  |
| Activities x revolving fund     | 0.406    | 0.816          | 2         | Ns                  |
| Activities x work planning      | 0.408    | 0.816          | 2         | Ns                  |
| Activities and record keeping   | 0.406    | 0.816          | 2         | Ns                  |
| Registration x training         | 0.455    | 0.500          | 1         | Ns                  |
| Registration x revolving fund   | 0.381    | 0.537          | 1         | Ns                  |
| Registration x work planning    | 0.206    | 0.650          | 1         | Ns                  |
| Registration x record keeping   | 0.206    | 0.650          | 1         | Ns                  |

Ns=Not significant



Results in table 5 shows that CBOs' funding sources do not depend on training, revolving fund, work planning and record keeping activities. The null hypothesis which states that CBOs' funding sources does not depend on training, revolving fund, work planning and record keeping activities is therefore accepted. There was no significant association between CBOs' activities such as promotion of tree planting and sensitization of the local community about forest, water and soil management and non-environmental activity such as training and revolving fund portfolio. Similarly, there was no significant relationship between CBOs' registration with work planning and between registration and record keeping. This implies that the involvement of CBOs in forest, water and soil management around Mount Elgon National Park is not influenced by the source of funding and CBOs' registration.

### **The opportunities available to CBOs' to manage forest, water and soil on Mt. Elgon**

Table 6 shows CBOs' opportunities in terms of targeting vulnerable groups, access to external funding, conducting monitoring and evaluation, holding elections as part of democratic governance, keeping records, large membership and participation in forest, water and soil management.

**Table 6: Opportunities available to CBOs that can help to sustain their involvement in forest, water and soil management around MENP**

| <b>CBOs' opportunities</b>                 | <b>response</b> |
|--|-----------------|
| Targeting of vulnerable groups             | 13.7            |
| Access to external funding                 | 13.7            |
| Participation in monitoring and evaluation | 15              |
| Adherence to democratic practices          | 18              |
| Keeping record                             | 12.8            |
| High membership participation              | 18              |
| Others                                     | 8.8             |

The response percentage indicates the extent to which the opportunities are available to CBOs. Opportunities in terms of adherence to democratic practices and a high number of members participating in forest, water and soil management are followed by monitoring and evaluation,

targeting vulnerable groups, assessing external funding and keeping records. The high level of membership participation and adherence to democratic practices in governance and decision making indicate presence of high work interests and consensus decision making among the CBOs engaged in forest, water and soil management. Values for targeting vulnerable groups, record keeping and monitoring and evaluation had average performance, indicating that there were needs to maximize such opportunities to enhance CBOs management effectiveness. The percentage measurement also gauges the level of support that CBOs receive from their communities, which is an important aspect of CBOs' strategy for sustainable management of forest, water and soil.

Table 7 shows results of Kruskal-Wallis and Median test for the relationship between CBOs' roles/activities related to forest, water and soil management and opportunities.

**Table 7: Relationship between CBOs' roles and opportunities**

| <b>Variables</b>                            | $\chi^2$ | <b>df</b> | <b>P-value</b> |
|---|----------|-----------|----------------|
| Targeting of vulnerable groups*             | 12.98    | 3         | 0.005          |
| Access to external funding*                 | 27.24    | 3         | 0.000          |
| Participation in monitoring and evaluation* | 21.89    | 2         | 0.000          |
| Adherence to democratic practices*          | 12.04    | 3         | 0.007          |
| Keeping records*                            | 19.09    | 3         | 0.000          |
| High membership participation*              | 12.77    | 2         | 0.002          |

\*Significance at  $p \leq 0.05$

CBOs utilized the available opportunities to improve on their performance and achievements. For instance, they deliberately included clauses in their constitutions and guidelines that allowed them to implement affirmative action to address problems faced by vulnerable communities such as women and people living with HIV/AIDS. Furthermore, CBOs developed short and long term plans that highlighted periodic monitoring and evaluation of their activities and training of local communities in different aspects of forest, water and soil management. In order to promote democratic principles, 18% of the CBOs (Table 6) hold regular members' meetings to review their operations. In such meetings members are informed about their achievements, learnt lessons, all of which motivate members to participate in activities of forest, water and soil management. Further, CBOs conduct regular transparent elections. Democracy promotes transparency and accountability.

### Challenges faced by CBOs' in management of forest, water and soil on Mt. Elgon

The challenges faced by CBOs in the management of forest, water and soil include low saving levels, donor dependence, founders' syndrome, corruption, untrained members and government interference (Table 8).

**Table 8: Challenges faced by CBOs that are operating around MENP**

| <b>CBOs' challenges</b>    | <b>response</b> |
|----------------------------|-----------------|
| Low saving levels          | 21.4            |
| Donor reliance             | 15.2            |
| Founders' syndrome effects | 16.4            |
| Corruption                 | 13              |
| Untrained members          | 19              |
| Government interference    | 8.3             |
| Others                     | 6.7             |

Table 9 shows results of Kruskal-Wallis and Median test of the relationship between CBOs' role/activities and challenges.

**Table 9: Kruskal-Wallis and Median test of the relationship between CBOs' roles and challenges faced in management of forest, water and soil**

| <b>Variables</b>            | $\chi^2$ | <b>df</b> | <b>P-value</b> |
|-----------------------------|----------|-----------|----------------|
| Low saving levels*          | 16.34    | 3         | 0.001          |
| Donor reliance*             | 34.00    | 2         | 0.000          |
| Founders' syndrome effects* | 14.44    | 2         | 0.001          |
| Corruption*                 | 11.13    | 3         | 0.011          |
| Untrained members*          | 26.61    | 2         | 0.000          |
| Government interference*    | 34.00    | 1         | 0.000          |

\*Significance at  $p \leq 0.05$

There were significant associations between all the six elements of challenges and CBOs roles (Table 9). The challenges faced by CBOs significantly affected the roles they played in the management of forest, water and soil implying that they must be addressed if the CBOs are to effectively carry out their functions in the Mt Elgon area.

The low levels of saving indicated an operational constraint to their ability to expand and implement activities. In an effort to overcome the inadequate saving problem, 14.7% of the CBOs instituted revolving fund system that appeared to be working well. The activities of CBOs that rely heavily on donor funding are at the risk of decline or collapse when funding support ceases hence the need to build capacity to mobilize resources and sustain activities. This study has found that about 15% of the CBOs heavily relied on donor funding (Table 8). Strategies to overcome this problem included establishment of enterprises such as dairy farming and tree planting to raise some funds.

'Founders' syndrome' is a term used to describe CBOs whose management and operations tend to be guided by founder members who are always in the board or management. Such founders tend to be "elite members" who stick around at the top of CBO leadership even if they are not needed by majority of their members to the detriment of the CBO. They stifle democratic progress and resist new approaches to handling issues. This challenge was being addressed by the CBOs involved in the study through holding of transparent and regular elections by members queuing behind preferred candidates and institution of leadership term limits.

Thirteen percent of the CBOs recognized that corruption was one of the major challenges that they faced. Corruption in CBOs is experienced in terms of misuse of resources and positions for personal gains such as embezzlement of funds and nepotism in staff employment. Corruption encourages shoddy work and breeds hatred among members. CBOs addressed corruption challenge mainly through sensitization, exposure of the culprits and reprimanded some of the members. Corruption, founders' syndrome, favoritism, nepotism were reported to be a common practice in Uganda's CBOs (Mutekanga, 2004).

Presence of untrained members was a challenge that resulted in poor implementation of activities due to lack of skills and knowledge. To solve the problem of untrained members, CBOs engaged in internal and external skills training. This was particularly important for the marginalized and vulnerable people, who lacked access to workshops or conferences.

Government interference was a challenge brought about mainly through government bureaucracy and unnecessary legislative restrictions. Government bureaucracy and legislative restrictions slow or frustrate CBOs' activities. About 8% of the CBOs experienced government interference (Table 8). Government interference, being small but significant problem, is being tackled by CBOs through holding of dialogue with different government agencies to give CBOs more operational space and constant follow-up of issues.

## Discussion

### **CBOs' characteristics in forest, water and soil management**

This study has shown that CBOs characteristics influence the way in which they carry out activities. For instance, longevity, administrative unit coverage and membership strength significantly affect the roles that CBOs play in forest, water and soil management. The older CBOs have experienced staff and tend to carry out activities more efficiently than the relatively new CBOs. A case in point is Bamokoki 1988 Development Association located in Busano (BDA) Sub County in Mbale district that has been in operation for 12 years and is implementing 18 out of the 24 (75%) activities related to forest, water and soil management that were documented during this study. In contrast, younger CBOs such as Kaseko Soil and Water Conservation Organization located in Benet Sub County in Kapchorwa district (four years old), is implementing 12 out of 24 (50%) activities.

Longevity of a CBO affects the way in which forest management activities are carried out through collaborative arrangement between the CBO and MENP authority. Collaborative forest management (CFM) was introduced in Mt. Elgon in the mid 1990s to improve forest management by involving stakeholders especially the local community. CFM allows time for exploratory learning through lessons based on uniqueness of each locality (Scott, 1998). Methven (2007) noted that forest management can improve through experience and capacity building of CBOs. At the same time, effective water management demands professionalism from participating CBOs that need to develop water management infrastructure and maintenance as well as linkage with downstream partners. This can be achieved through lessons that CBOs learn through their activities over time. Soil management is a little more complex because it involves dissemination to and adoption of technologies such as agroforestry by farmers, investment in drainage facilities, construction of contours and grass strips, establishment and adaptation of deep and minimum tillage practices and many others. These practices achieve effective soil management due to the learning lessons process as observed by Nkonya *et al.* (2002) in the analysis of CBOs engaged in soil management in the hilly and fragile areas of south-western Uganda.

CBOs that operate in large administrative areas such as county and district covers several mountain ridges divided by mountain cliffs, gorges and deep valleys that sometimes serve as administrative boundaries. Such CBOs require extra efforts to overcome challenges related to communication, physical barriers, technology use and membership cohesion as they implement forest, water and soil management activities. The larger CBOs expand their operational areas (from village to parish to sub county) in consonance with increased roles in forest, water and soil management. This tends to be case up to sub county level beyond which the CBOs become ineffective and lose focus due to limited financial resources and technical expertise. In contrast, the operational areas of smaller CBOs are confined to mountain ridges, villages or relatively smaller sub counties.

CBOs that operate on one mountain ridge have adequate membership that can control unsustainable forest resource use, establish alternative sources of forest products alternatives

and restore portions of degraded forest areas across that ridge. Mt. Elgon ridges have distinct drainage patterns (Howard, 1991; UWA, 2000) and the inhabitants utilize water and conserve soils. For instance, contour construction and maintenance and extension of benefits of gravitational piped water flow were successful in Busano parish, Bumasisfwa/Butandiga ridges in Mbale and Sironko districts respectively. This study has also revealed that CBOs that have large number of members take on more forest, water and soil management roles than those with fewer members. For instance, Mount Elgon Beekeeping Community Association that has over 300 members implemented 16 activities compared to Kitobo Bee Farmers Association with 28 members that implemented 11 activities. Large membership is appropriate for collaborative forest management that requires collective efforts of both neighboring communities and Park staff (Hinchley, 1996). High human resource powers means adequate labour for forest management activities such as monitoring forest resource use and running large community tree nurseries where CBO members work on a voluntary basis and rotational work schedule. Higher numbers of members also means a considerable financial contribution to the CBO especially membership fee that can be used to install water and soil management infrastructure such as protected water sources and grass multiplication centers. However, high CBO membership that is spread over large areas such as a county and district does not result into improved forest, water and soil management functions due to low cohesion among members and stress on operation capacity. For instance, KAWACOM CBO with over 400 members spread in more than half of Kapchorwa district had fewer forest, water and soil management activities (13) than Shyunya Yetana CBO (18) which concentrate its operations in Bududa sub county.

Funding plays an important role in the sustainability of CBO's operations and existence. In the Mt Elgon area, half of the CBOs' activities are sustained by internally generated financial resources and the other fraction is obtained from government (indirectly) and donors. However, this study has found that CBOs' forest, soil and water management activities on Mt. Elgon are independent of funding sources implying that funding conditions do not affect CBOs programmes. This is true of CBOs that practice collaborative forest management because their members are more motivated by access to and use of resources from the Park than monetary gains (Scott, 1998; Hinchley *et al.*, 2000). CBOs' funding sources have convergent interests with those of CBOs' members that carry out water and soil management activities. This is probably due to the fact that CBOs' revenues were too small to finance their planned programmes adequately. For example, individual CBO's annual average revenue was Uganda Shillings 2 million (about \$800 at exchange rate of USD 1 = Ug. Shs 2,500).

### **Opportunities for CBOs to participate in the management of forest, water and soil**

In the Mt. Elgon area, forest management is mainly affected by marginalized vulnerable community groups such as women, the landless and extremely poor people who heavily rely on forest resources for fuel wood, food, medicine and construction materials (Bagoora, 1988; Scott, 1994; UWA, 2000; Mugagga, 2011). These vulnerable local people have been forced to encroach on MENP in search of livelihoods. They cultivate marginal areas such as steep slopes and river banks and have in turn caused further environmental and resource degradation

(NEMA, 1997; MFPED, 2000; Kapchorwa and Mbale districts, 2004). Therefore, CBOs that provide alternative livelihoods to vulnerable groups that halt forest and soil degradation would contribute effectively to improved forest, water and soil management.

Significant relationships were found to exist between access to external funding opportunity and the functions of CBOs in the management of forest, water and soil. External funding mainly supports research, monitoring, evaluation and information dissemination of forest management strategies. Meanwhile, water and soil management is supported through development of appropriate technology, farming inputs' supply and infrastructure establishment. Due to its strategic location and fragility of the ecosystem, the CBOs in the Mt. Elgon area have high opportunities to attract foreign funding. This study has indicated that half of the CBOs' revenues are donation from external international, regional agencies and local governments. Although external funding is small, CBOs can maximize opportunities for project implementation by increasing their advocacy activities.

Ability to undertake monitoring and evaluation was an opportunity that had significant relationship with the roles played by CBOs in forest, water and soil management. For instance, monitoring and evaluation is a key component of collaborative forest management that helps to check unsustainable resource use. Monitoring and evaluation also helps in gauging effectiveness and efficiency of water and soil management interventions such as the impact of conservation farming and nitrogen fixing tree species that communities use. This study has found that 15% of the CBOs carry out monitoring and evaluation either internally or with external assistance.

Adherence to democratic practices influences CBOs' functions including roles in forest, water and soil management. Forest, water and soil management activities such as establishing community tree nursery and maintenance of water sources and trenches/discs are driven by both collective and individual responsibilities built through community mobilization, education and training without discrimination of some community members. CBOs' adherence to democratic governance is widely believed to bring about legitimacy, recognition and acceptance of CBOs by local communities in the areas where they operate. As noted by Yacouba (1998), adherence to democratic governance improves forest, water and soil management functions. CBOs that lack transparency are usually unaccountable to its members thus making members become non committal to the organizations' activities.

Record keeping has a significant influence on CBOs' roles in forest, water and soil management as found in this study. For instance, resource use records such as quantity of fire wood, poles and species of trees that the local community collected from MENP helped to evaluate forest resource harvest levels (Scott, 1994; Tiyoy, 1998). Similarly, consistent record keeping of the quantity of crop harvests, terraced farming, waterways construction, monitoring of dams, retention walls and gully control, alley cropping, bamboo planting in gullies, mulching and application of organic and inorganic fertilizers to control soil degradation helped to evaluate the effects of such water and soil management strategies (Bagoora, 1988, Buinza *et al.*, 2007). The

fact that only 12.8% of the CBOs keep some records implies that there is a need to step up efforts to ensure that CBOs keep good records of their activities.

It has been found that high level of participation by members influence CBOs' roles in forest, water and soil management. This observation has also been reported by Hinchley *et al.* (2000) who recommended that there is a need for unrivalled community commitment in order for collaborative forest management to succeed in the Mt. Elgon area. However, Buyinza (2010) noted that community commitment is heightened when they receive net economic benefits from the forest such as in Mutushet parish, Bukwo district on Mt. Elgon. Indicators of high community commitment in forest management include high and regular attendance of meetings, no degradation of MENP forest in that area and on-farm production of alternative forest products. In water and soil management, availability of safe water and high crop yields in areas where CBOs operate indicate high level of community participation with positive results.

### **Challenges faced by CBOs in forest, water and soil management**

Low saving levels is one of the challenges that influence CBOs' roles in forest, water and soil management on Mt. Elgon. About 21% of the CBOs do not save funds despite having bank accounts. Low saving affects implementation of planned activities such as establishment of tree nursery that requires consistent funding over a period of time. Water and soil management infrastructures such as piped water facilities, dams, protected wells and galleys also require funds for regular maintenance and emergency repairs since Mt. Elgon is prone to severe soil erosion and landslides (Knapen *et al.*, 2006).

CBOs' reliance on donor funding has significant effect on their roles in management of forest, water and soil. Scott (1994) and Hinchley *et al.* (2000) reported that donors played a key role in initiating and developing collaborative management arrangements in MENP. They noted that donors tend to continually support collaborative management process modification in order to suit local situations through research and training. Similarly, donors contribute to the development of appropriate technology and techniques for water and soil management which CBOs adopt. In addition, donors build the capacity of CBOs as part of the effort to sustain their activities. However, while donor support is good, the sustainability of some CBOs that over rely on such support is weakened and in extreme cases the CBOs cease to exist and operate when donor support ends. Ulukusi Resource Users' Group is an example of such CBO that did not renew its Memorandum of Understanding with MENP after IUCN project stopped in 2002 due to lack of resources.

"Founders' syndrome" significantly affects the roles of CBOs in forest, water and soil management. Founders' syndrome tends to breed self-interest and discourages new members from playing their roles and supporting the CBOs activities in forest, water and soil management. It was noted that founders' syndrome distracted mobilization and supervision of members and adversely affected the operations of some CBOs. For instance, a portion of MENP



forest in Bushiyi was degraded mainly due to inadequate mobilization and supervision of members of the Mt. Elgon Farmers' Group that operates in the area.

Corruption is the other major challenge that was found to significantly affect the operations of CBOs involved forest, water and soil management in the Mt Elgon area. Corruption takes many forms, but in this study it was found that CBO members gave bribes to park rangers in order to access the park's resources such as timber, agricultural land, poles and fire wood illegally. It was also noted during distribution of water and soil management inputs such as T-frames, seedlings, grass, hoes and inorganic fertilizers in which some relatives, friends and CBO members were favored. Furthermore, it was noted that some members were favored during selection for training and occasionally, some CBO leaders diverted or embezzled funds meant for forest, water and soil management activities.

Untrained CBO members posed another significant challenge that hindered implementation of forest, water and soil management around MENP. Training was carried out in areas such as forest resource off-take monitoring methods, agroforestry skills, contour making, simple irrigation methods, soil erosion control skills, soil fertility improvement methods, conservation farming and beekeeping techniques. However, CBOs did not carry out training themselves but through external experts such as government agencies and other NGOs. There was little evidence to show that the trained CBO members had put their skills into practice, therefore further training was still needed.

Government interference was noted as a major challenge to CBOs' operations in the management of forest, soil and water areas around MENP. For instance, government interference caused delay in negotiating collaborative forest management agreements (Kato, 2003) due to the many Local Council layers (I to V). Delay due to government bureaucracy was also experienced when formulating and approving bye-laws and ordinances which facilitates water and soil management. For example, in Kapchorwa district river bank management, soil erosion control and tree planting in Benet area took over two years to get completed due to government bureaucracy. Government is mandated to monitor and evaluate the activities of CBOs, but it is not doing so effectively (ACODE, 2006). For example, government had not monitored and evaluated the activities of Mt. Elgon Farmers Group for the last five years.

## **Conclusions**

The following conclusions can be drawn:

1. CBOs' longevity, administrative unit coverage and membership strength characteristics influence their role in forest, water and soil management around MENP.
2. CBOs' funding source and registration status characteristics do not influence their role in managing forest, water and soil in MENP surrounding areas.
3. Targeting vulnerable groups, access to external funding, participation in monitoring and evaluation of activities, adherence to democratic practices, record keeping and high

membership participation are available opportunities that CBOs operating around MENP can utilize to enhance management of forest, water and soil.

4. Low saving levels, donor reliance, founders' syndrome effects, corruption, untrained members and government interference in CBOs' activities are challenges that influence forest, water and soil management around MENP.

## Recommendations

1. Government should put in place a special CBO advisory body to enhance the management of forest, water and soil around MENP based on researched information that takes into account CBO characteristics, opportunities and challenges they face.
2. CBOs should seize the existing good will of the local community to manage forest, water and soil around MENP.
3. In order to reduce reliance on donor funds, CBOs should establish revenue generation enterprises and promote saving culture through revolving fund system for management of forest, water and soil around MENP.

## References

ACODE. 2006. The Narrowing Space for NGOs Operations in Uganda: An Analysis of the Implication of the NGO Registration (Amendment) Act, 2006. ACODE, Kampala, Uganda.

APO. 2004. Role of Local Communities and Institutions in Integrated Rural Development. Report of Asia Productivity Organization (APO) seminar in Iran, 15-20 June 2002, Tehran, Iran.

Bagoora, F. D. K. 1988. Soil Erosion and Mass-wasting Risk. In: The Highlands areas of Uganda. *Mountain Research and Development* 8 (2/3):173-182.

Buyinza, M. 2010. Income Distribution Analysis of Collaborative Forest Management in Mt. Elgon National Park: Dual Action on Poverty Alleviation and Environmental Management. *Applied Sciences* 5 (2): 101-107.

Buyinza, M., Kaboggoza, John R. S., Nabanoga, G., Nagula, A., Nabalegwa, M. 2007. Site specific soil conservation strategies around Mt. Elgon National Park, Eastern Uganda. *Research Journal of Applied Sciences* 2(9): 978-983.

Fischer, J. 1994. Is the Iron Law of Oligarchy Rusting Away in the Third World? *World Development* 22:2-129.

Fowler, A. 1997. Striking a Balance: A guide to Enhancing the Effectiveness of Non-governmental Organizations in International Development. Earth scan, London, UK.

Hinchley, D., Turyomurugyendo, L. & Stonewall, K. 2000. Review of Collaborative Management Arrangements for Mt. Elgon National Park. IUCN Eastern Africa Regional Office, Nairobi, Kenya.

Horward, P.C. 1991. Nature Conservation in Uganda's Tropical Forest Reserves. IUCN, Gland, Switzerland and Cambridge, UK.

Kapchorwa District Local Government. 2004. State of Environment Report, Mbale, Uganda.

Kato, S. S. 2003. Learning Lessons: The Challenges of Implementing Collaborative Management in Mount Elgon National Park, Uganda. MSc. Thesis, University of Wales, UK.

Kato, S. S. 2013. Assessing the Role of Community Based Organizations (CBOs) in Sustainable Management of Forest, Water and Soil: The Case of Mt. Elgon Ecosystem, Uganda. PhD thesis (draft), Makerere University, Kampala, Uganda.

Knapen, A., Kitutu, M.G, Poesen, J., Breugelmans., Deckers, J. and Muwanga, A. 2006. Landslides in a densely populated county at the footsteps of Mount Elgon (Uganda): characteristics and causal factors. *Geomorphology* 73: 149 - 165.

Mbale District Local Government. 2004. State of Environment Report, Mbale, Uganda.

Methven, S. 2007. Report on Mid Term Review for Strengthening and Empowering Civil Society for Participatory Forest Management in East Africa (EMPAFORM). International NGO Training and Research Centre, Oxford, UK.

MFPED/UBOS .2000. Uganda National Household Survey 1999/2000. Kampala, Uganda.

Mridula, N. and Jiju, P. A. 2011. Accomplishing Food Security through Community Action. Thrissur, Kerala, India.

Muggaga, F. 2011. Land Use Change and Landslide Occurrence and Livelihood Strategies on Mt. Elgon Slopes, Eastern Uganda. NMMU, South Africa.

Mutekanga, D. R. 2004. NGO Involvement in Access and Benefit Sharing of Genetic Resources: The Case of East Africa. UNU-IAS Working Paper No. 10. Kampala, Uganda.

Nanna, T., Makubuya, N., Nakirunda, M. 2002. Report on the civil society in Uganda for Royal Nowegian Embassy in Uganda. Kampala, Uganda.

NEMA. 1997. Kapchorwa Distric State of Environment Report, Kampala, Uganda.

Njok -Matthews, E. C., Angba, A. O. and Nwakwasi, R. N. 2009. Factors influencing role performance of community based organizations in agricultural development in Imo State in Nigeria, University of Calabar, Nigeria.

Nkonya, E., Sserukuuma, D. and Pender, J. 2002. Policies for Improve Land Management in Uganda: Second National Workshop, EPTD summary workshop paper no. 12. Washington D C., USA.

Nyakundi H. M. 2010. Community Traditional Knowledge, Perceptions and Response to Flood Risks in Nyando Basin, Western Kenya, Nairobi University, Nairobi, Kenya.

Republic of Uganda. 1996. Mount Elgon National Park Biodiversity Report, Forest Department, Kampala, Uganda.

Scott, P. 1994b. Assessment of Natural Resource Use by Communities from Mt. Elgon National Park. Kampala: IUCN/Ministry of Natural Resources. Mt. Elgon Conservation and Development Project, Technical Report No. 15, Kampala, Uganda.

Scott, P. 1998. From Conflict to Collaboration: People and Forest at Mount Elgon, Uganda. IUCN, Gland, Switzerland and Cambridge, UK.

SDC. 2009. Forests, Landscapes and Governance: Multiple Actors, Multiple Roles. Swissprinters, St. Gallen, Switzerland.

Thor, S. L., Nganwa, K. B and Karani, I. 2008. Mid Term Review of Mount Elgon Regional Conservation Programme (MERECP), Norad, Oslo, Norway.

Tiyoy, M. L. 1995. Utilisation of Non-timber forest products in Mt. Elgon National Park by the people of Mutushet in Kapchorwa District, Uganda, MSc. Thesis (Environment and Natural Resources), Institute of Environment and Natural Resources, Makerere University, Kampala.

UBOS. 2010. Projection of demographic trends in Uganda. Kampala, Uganda.

UNESCO. 2009. The role and impact of NGOs in capacity development: From replacing the state to reinvigorating education. International Institute for Educational Planning, Paris, France.

UWA. 2000. Mount Elgon National Park General Management Plan, Uganda Wildlife Authority, Kampala, Uganda.

Yacouba, D. 1998. National Resource Management by local Associations in Kelka Region of Mali. IIED issue paper No. 74, London, UK.