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LOCAL ORGANISATION AND GENDER IN WATER MANAGEMENT: A CASE STUDY FROM THE KENYA HIGHLANDS†

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Abstract: Provision of safe water supplies is a priority for the global community and for villages in Kenya. An extended case study from the highlands of Western Kenya shows that local communities can be successful in self-organisation for improved water supply, but only by mobilising considerable amounts of investment resources and local collective action. Gender relations are crucial to success, with women having primary responsibility for water management, but more or less hidden roles in community groups. There are legitimate concerns that Kenya's new water laws and institutions may make it more difficult for local community groups to self-organise, with additional biases against women. Copyright © 2008 John Wiley & Sons, Ltd.

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1 INTRODUCTION

Across Africa, it is increasingly recognised that both statutory and customary institutions shape water management, and that it is important to understand the contradictions and complementarities between statutory and customary institutions supported by different types of authority (van Koppen, 2007). Men's and women's divergent social positions lead to differences in water use, water rights and access to water (Zwarteveen and Meinzen-Dick, 2001). Although women undertake the large share of domestic work,

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†This paper is dedicated to the memory of our close friend and colleague, Jessica L. Roy. She conceived, planned and conducted the first phases of the field research reported in Section 3 of this paper. Tragically, Jessica died on August 18, 2004, after being struck by a car on the streets of Nairobi, Kenya.

they receive fewer benefits since most of their work goes unpaid (Suda, 2000). Their ability to effectively manage water resources is compromised as men control land, finances, industry and government, and thus access to water (Crow and Sultana, 2002). Moreover, legal or formal water rights are usually vested in the presumed household heads, typically men. Exclusion of women is also common in water management structures—from the local to the basin level—that tend to be dominated by men, particularly large-scale water users and administrative, political and economic elites (Guerquin *et al*., 2003).

To increase the sustainability of development projects amidst concerns for environmental conservation and equitable distribution of benefits, the global community has increasingly advocated for the involvement of both men and women as equal partners in development projects. A World Bank review of 121 rural water supply projects concluded that women's participation strongly enhanced project effectiveness and sustainability (Nishimoto, 2003). In Malawi, sustainability of a government program to supply piped water to 50 rural and peri-urban districts was at risk of collapse when male-dominated committees collected fees irregularly, failed to adhere to agreed times for opening and closing taps and mismanaged funds collected. Also, user groups and committee meetings were rarely held as most men worked away from their homes. To improve management of water points, users were encouraged to elect 60 per cent women and 40 per cent men to committees (Maharaj *et al*., 1999). At the same time, both men and women were sensitised on the benefits of involving women in committees. Under the new structure, projects bills were paid on time, membership grew, meetings became regular and attendance at these meetings increased substantially (Maharaj *et al*., 1999). Elsewhere, success in the Philippines Communal Irrigation Project was attributed to integration of women in project operations. As in Malawi, the involvement of women in membership increased payment of fees as women controlled household finances (Nishimoto, 2003).

This paper explores the relationship between gender relations and collective action in three community water projects in the Western Kenya Highlands that have successfully mobilised local investment for water systems.[1] Attention is focused on Kericho district, where access to safe water remains a challenge despite the presence of having numerous permanent springs and receiving rainfall in excess of 1500 mm a year. Also, the area is inhabited by Kipsigis Kalenjin ethnic group which has relatively strong norms regarding the distinct roles and responsibilities of women and men (Were *et al*., 2006).

The paper is organised as follows. Section 2 reviews the institutional context of community water management in Kenya, particularly in Kericho district. Section 3 describes and analyses water management institutions and gender relations in Ketitui sub-location, drawing upon data from individual and group interviews conducted in the sub-location. Section 4 presents conclusions and draws implications.

2 COMMUNITY MANAGEMENT OF WATER IN KENYA

Kenya receives less than 650 m^2 of freshwater per person per year, making it one of the most water scarce countries in Africa and the world (WRI, 2003). Although the country experiences high rainfall variability, the water sector in Kenya is characterised by low investment and extensive degradation of existing resources (Were *et al*., 2006). Inadequate access to safe and sufficient water presents enormous challenges as only approximately

[1]This paper draws heavily upon CAPRi Working Paper #51 by Were et al. (2006).

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12 per cent of rural Kenyans have household water connections (WHO/UNICEF, 2004) and approximately two-thirds of poor rural households depend on unprotected sources of water—wells, rivers, lakes, ponds and rainwater (Katui-Katua, 2004; WHO/UNICEF, 2004).

After decades of numerous and piecemeal reforms towards privatisation of water supply and efficient management of water resources, the Government of Kenya enacted a new Water Act in 2002 that prescribes changes in the governance of water resources. The Water Act relegated the Ministry of Water and Irrigation to a policy and coordinating agency and vested management of water resources in the Water Resource Management Authority and that of regulating water supply in the Water Service Regulatory Board. In this framework, community water is supplied by Water Service Providers, including water user associations, selected and regulated by the Water Service Regulatory Board. The act institutes user fees and accordingly, any entity that supplies water to more than 10 customers or group members must go through a protracted process of application and review with the new water management institutions (GOK, 2002).

Involvement of community members in the provision of water supply through self-organised groups can be traced back at least to the 1980s when the government acknowledged that there was a need for local initiatives to improve the supply and management of water resources in rural areas. This was strengthened by *harambee*, the local spirit of working together to solve problems, which was introduced at independence as a slogan and persists as a means for mobilising collective action today.

Community management of water has increased over the years and by 2000, 30 per cent of the 8 million people in rural Kenya with access to improved water were served by community-managed water supply schemes (Njonjo and Lane, 2002). Forty per cent of villages in Western Kenya rated improved water management as one of their top three village priorities, an indication that water resource management remains a top priority in rural communities (Swallow, 2005). On ownership, the regional Lake Victoria South Service Board estimates that 28 per cent of all water supplies in Kericho district are owned by communal groups (Onyango, 2005; unpublished data). In addition, a census of 135 springs in Kericho district revealed that 18 per cent were managed by local self-organised groups and 19 per cent were managed by external groups, including roughly equal numbers of church organisations, development projects government agencies, international organisations and local authorities (D. Bundotich, 2005; unpublished data).

Community associations in Kenya are diverse in nature and capacity, ranging from fairly sophisticated systems with well-structured tariffs, to simple gravity schemes operated without formal processes (Njonjo, 1997). Even though the state is still seeking to engage local communities in the supply and management of water resources, it is not clear how these groups are formed, who makes up the membership or who is excluded. Nor is it clear how group structure influences institutional efficiency and the distribution of benefits. The new water law also fails to recognise the importance of gender relations, and specifically the participation of women, in managing water resources. This is against the backdrop that women are the main users and managers of water across the nation (Suda, 2000; Katui-Katua, 2004; Were *et al*., 2006). This disparity in management and usage of water has resulted in poor performance of water projects in Kenya and other developing nations (Maharaj *et al*., 1999; Suda, 2000; Nishimoto, 2003). Meinzen-Dick and Zwarteveen (1997) argue that as a source of power differences, gender influences effective management of natural resources but is often ignored when states decentralise the management of natural resources to communities. Vernooy (2006) argues that the exclusion of women in

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decision making not only delays delivery of benefits but also affects equity and institutional efficiency unfavourably.

3 WATER MANAGEMENT AND GENDER RELATIONS IN KETITUI SUB-LOCATION

3.1 Methodology

A study of poverty and property rights dynamics was conducted in Western Kenya in 2004–2005, including an intensive survey of five villages in Kericho. Villages of between 60 and 120 households were selected to be representative of the main ethnic groups, land tenure, land use and altitude. Through this process, Kiptegan village in Ketitui sub-location was selected as a Kalenjin-speaking area located at high altitude, with adjudicated land tenure and smallholder mixed agriculture.

In the first months of 2004, a week-long survey was undertaken in Kiptegan village by a six-person team that conducted interviews with key informants, a village representative group and 30 households. That study revealed that Ketitui sub-location contains a range of water management regimes, with two groups successfully operating piped water systems (Chesilot and Kiptegan), another group in the investment stage of a piped water system (Maimur) and several looser groups of people still drawing water from unprotected springs and streams. Ketitui sub-location was therefore identified for a follow-up study of local social organisation, impact of improved water supply and gender relations. The follow-up study was undertaken in stages between mid-2004 and mid-2005.

To investigate factors facilitating and hindering successful community organisation, focus group discussions were held with groups that had succeeded in providing piped water to group members, and with community members presently relying on unprotected sources of water. Separate group discussions were held with male members of Chesilot, Kiptegan and Maimur water projects, with groups of women who were at that time using, or will be using piped water supplied through those projects, and with women using unprotected springs and streams. One focus group discussion was also conducted with a mixed sex group of male and female residents of Ketitui sub-location, some of whom use piped water while the rest use unprotected springs. In addition, individual interviews were conducted with 30 adult women with homestead connections from Chesilot and Kiptegan protected springs, and with 39 adult women who used water from unprotected springs and streams.

3.2 Social Organisation for Improving Supplies

Community groups that organise to protect water sources and pipe water to their members' homesteads face substantial challenges. A group of neighbouring water users must first identify lack of water as a problem, prioritize improvement in water supply and organise themselves to develop an appropriate financing and operational plan. Successful establishment of water schemes also involves complex negotiations over land access and rights. A water group needs to identify and negotiate access to a spring that produces year-round water supply sufficient for members' collective needs. In Ketitui sub-location, all suitable springs are located on individual land. Water groups must therefore negotiate with the landowner for access to the spring and obtain rights to protect and maintain the

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water point. Depending upon the spring, the group may also need to negotiate with current users of the spring. Once access to the spring is established, then the group needs to design a system of pipes that will use pump or use gravity to carry the water across the landscape to the group members' homesteads. The right of way for distribution pipes must also be negotiated with all landowners whose land the pipes cross. Those negotiations are often very protracted.

Once springs are protected and pipes installed to distribute water downhill to members' homesteads, management and exclusion rights are held by members of the groups undertaking the investments. Groups establish and enforce rules on the use of the spring water. During dry seasons, water use is more tightly regulated and irrigation limited to the kitchen gardens of members.

The following sub-sections describe the origins of the Chesilot, Kiptegan and Maimur piped water projects, especially focusing on the negotiation processes that were followed.

3.2.1 Chesilot water project

Initiated in 1997 by 10 male farmers interested in increasing productivity in dairy and tea farming, Chesilot water project was the first water association in the local vicinity. In the face of a severe drought, the group considered investing in a hydraulic pump that could pump water uphill from a stream. Three members of the group then went on an exchange visit to another village where they observed a gravity-feed system for piped water. The group decided to opt for this approach because it required less investment in capital than the hydraulic pump.

The number of local residents interested in the water project grew quickly and after a few months reached 26 members. After 6 months, the group had increased to 40 male members, at which time the committee decided to refuse any additional members. Registration with the Ministry of Water and Department of Social Services, protection of the spring, laying of pipes to members' homesteads and the building of a storage and treatment tank progressed in three stages between 1997 and 2002. The water that is delivered to individual homesteads is used for a variety of domestic purposes: watering dairy cattle, bucket irrigation of home gardens and bucket irrigation of tea seedlings.

A difficult part of the Chesilot water project was, and continues to be, the negotiations for access to the spring from which the water is drawn. In order to have sufficient pressure in the water taps, the group could tap into a spring located over 100 m upstream of the group member located furthest upstream. This meant that the group needed to negotiate an agreement with a landowner who would not benefit directly from a homestead connection. About 15 members approached the landowner of the spring who agreed that the group tap into the spring, on the condition that the group constructed three outlets in addition to their distribution outlet. This included an outlet for the landowner's sole use, a tap for other members of the local community, and a watering point for the landowner's cattle. The agreement was formalised by the signing of the 'no objection' agreement form by both the landowner and local government officer. Additional difficulties arose later when the male landowner died, and the land was inherited by his wife. The wife was not a party to the earlier negotiations. This will be discussed in more detail in a later section of this paper.

3.2.2 Kiptegan water project

Ormrod (1999) postulates that imitation of behaviour is a strong force for diffusion and replication of technology. The success of the Chesilot water project in installing stand pipes

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in its members' homesteads set off the formation of the Kiptegan water project whose members aimed to improve the supply of water to their homesteads.

Kiptegan water project has 17 male members, whose households receive water at household taps; the project also provides piped water to a church. Like the Chesilot project, providing water to dairy cattle appears to be the main impetus for men's interest in the project. After a first unsuccessful attempt at a communal spring, the Kiptegan group settled for a second unused spring below the first. The unsuccessful negotiation at the communal spring pitted local women who had long used the spring against the downstream group of men who wanted to tap into the spring. Consequently, the group members consulted the landowner of the second spring, who was already a member of Chesilot water project and had water piped to his home. He readily allowed the group to use the spring as three of his sons would be members and would benefit from the project. The initial agreement was an informal verbal agreement, although he later signed the 'no objection' form provided by the Ministry of Water.

3.2.3 Maimur water project

The Maimur water project was at the initial stage of spring protection—excavation and laying of stones to construct the water reservoir—at the time of this study. The group consists of 40 households from Ketitui village and with the exception of one female member who owns the land supporting the spring, membership is limited to men. Ten initial group members approached the landowner to use the spring and pipe water to their homesteads. The landowner agreed on a condition that she would also benefit from the water supplied by the project and joined the group as a committee member. Nonetheless, she was reluctant to sign a formal agreement. The landowner is recognised as a committee member and committee meetings are held at her home. Her role on the committee gives her easy access to the committee's decisions about water access and allocation. Unlike the Chesilot and Kiptegan water projects, all members of the Maimur water project live upstream of the spring and thus will use a hydraulic pump to pipe water into their homesteads.

3.3 Composition of Groups

Although more than 80 per cent of households report women as the primary water collector and another 33 per cent as secondary water collectors (see Table 1), membership in all the

Table 1. Responsibilities for water collection ($n = 30$)

	Most important household water collectors (%)	Second most important household water collectors (%)	Third most important household water collectors (%)
Wife	80.0	0	0
Husband	3.3	16.7	0
Male children	3.3	6.7	10
Female children	3.3	33.3	0
Other	10.0	6.7	0
Missing	3.3	36.7	90
Total	100	100	100

Source: authors' analysis of data collected from 30 households in Kiptegan village in early 2004.

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water projects is largely limited to men. The participation of only one female as a group and committee member in all the three groups indicates low participation of women in decision-making positions. This is, however, not unique in the study area. Low involvement of women in community water associations and environmental conservation activities is common (Suda, 2000). This can be explained by a combination of socio economic and governance factors (Pandolfelli *et al*., 2007). Firstly, the three groups belong to the Kalenjin community of Kenya where men largely own land and are expected to provide sufficient income for the needs of their families. Women on the other hand are expected to take care of home, children, tend cattle and work on their husbands' land (Sorensen, 1990). Secondly, men 'traditionally' engage in public activities while women's traditional activities are within the homestead. Participation in public fora and community groups are considered prerogatives of men. It is important to note that these 'traditions' were a result of colonial and post-colonial legal and governance structures which relegated Kalenjin women to the position of unpaid labourers on husbands' land from positions of being chief producers, traders and 'heads' of houses with residual rights to pass land on to their male heirs (see Peristiany, 1939; Orchardson, 1961).

Thirdly, the exclusive involvement of men in Chesilot and Kiptegan groups can also be explained by men's motivation to increase returns in dairy and tea farming. The study revealed that incomes from tea and dairy farming are for the most part controlled by men who, by virtue of being landowners secure membership in milk and tea cooperative societies where the products are sold. In contrast, women control income from indigenous vegetables and limited sale of milk within the village in return reducing their influence in the groups' activities, leading to their exclusion (Were *et al*., 2006). The situation was different in Maimur where women initiated the group formation to increase access and quality of water, but were still excluded from formal membership of the group. During the focus group discussions, the women acknowledged their inability to raise most of the funds required and looked upon their husbands to do so. The women also acknowledged the importance of adhering to cultural norms that dictate that men are expected to lead initiatives. This may be seen not only as submissiveness but also as a calculated move by the women to ensure a sense of ownership and prestige among men to motivate their contribution.

A further deterrent to the involvement of women in group membership and management is the fact that meetings are held in the evening, a time women are busy preparing evening meals and taking care of children. This was illustrated when on the death of a male member at Chesilot water project the widow was acknowledged as a member but her presence in the meetings was inhibited by their timing. She instead received information of deliberations at meetings from project leaders. Recently, she transferred her membership to her son who now attends the meetings. The largely exclusive involvement of men in water projects, while accepted, has resulted in the formation of women's groups, whose members feel marginalised from the formal water project yet feel they can still contribute towards its implementation albeit indirectly. Motivation for the formation of women groups can be seen in the words of one female villager drawing water from communal springs:

> *After members meet and agree on those to be given official positions women are mostly left out. The only option for women is to form their own group within the project and elect their own officials. For the group (women), they intend to finance part of the project costs. The women can contribute an amount decided by them in order to aid in the financing of the project.*

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Although women did not participate directly in these water groups, they did provide indirect support particularly through separate women's groups. The overlap of men's interest to get water for livestock and tea seedlings with women's concern to get water for domestic tasks and women's plots may also have been very important.

3.4 Participation

To enhance water supply, men and women undertook different activities at various levels of project implementation. Men took leading roles at the initiation stage which involved forming group membership and negotiating access to reliable springs. Since land is predominantly held by men, negotiations are held with heads of households, usually men. The involvement of women as happened in the Maimur project is virtually unheard of in the Kalenjin Community where a woman owning land is expected to consult with male relatives who will represent her at the negotiation table (L. Onyango, personal communication, July, 2007).

Operations and daily coordination of activities in the water projects are coordinated by the male-dominated group and committee members. While the roles of women at the initial stages were not easily discernible, they should not be underestimated. The Maimur water project was initiated by women who held informal meetings at various springs as they drew water. Together, these women advocated for improved water supply, first by mobilising the users to separate the watering points for livestock and human use, and later by urging their husbands to protect the spring head and pump the water into their homesteads. At Chesilot and Kiptegan projects, women helped their husbands to raise the groups' registration fees. One member of Chesilot water project admitted joining the group out of his wife's initiative of raising the initial registration fee of US $7 by selling two chickens.

During implementation phases, men harvested stones, excavated the spring head and protected it, dug trenches and laid pipes. They were also charged with the responsibility of raising most of the funds required during the implementation phase. In the Chesilot water project, the members negotiated for a group loan of $3000 from a local Tea Savings and Credit Society. Step-by-step over this period, the group raised the equivalent of US $5333 from its members, with each member contributing about $133 to the capital investment and $0.80 per month for maintenance. It is worth noting that the only external support that the group received during the implementation phases was in the form of technical advice from water department officers from the district office.

Women, although not members, were requested to volunteer and undertake specific activities. They prepared meals, an activity considered to be a woman's task and went a step further and ferried stones to the implementation sites and undertook duties (digging trenches, constructing the source and tank) assigned to their husbands when the latter were absent. In addition to paying registration and maintenance fees, women through their women groups also raised funds for the water project.

The Chesilot women's group was formed when wives of members of the Chesilot water project organised a festival to express their appreciation of their husbands' role in improving water supply. To raise funds, they engaged in informal labour groups (*morik*), harvesting and weeding farms for payment. Money obtained was invested in the planting of tea seedlings which were later sold for about $350. A part of the proceeds was distributed amongst members and the balance used to purchase maize to be put aside and sold at a higher price during the dry season. Each woman also contributed about $7 to repay loans

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Table 2. Water management activities undertaken by women before and after construction of protected and piped water systems ($n = 30$)

Activity	Before completion of construction	After completion of construction
Preparing meals	16	6
Source construction	6	0
Tank construction	0	13
Not involved	4	6
Attending general meetings	4	16
Purchase of sand	1	1
Carrying stones	4	2
Digging trenches	7	0
Registration fee	6	0
Pipes	2	0
Urging defaulters to pay	0	1
Maintenance fee/fine	0	5

Source: household survey of 30 women involved in the Chesilot and Kiptegan water projects.

which had been obtained by their husbands for constructing the tank. On their part, the Kiptegan women's group has a revolving fund made up of 16 members, each of whom contributes $1.5 each month. From the monthly collection of $24, the women donated $7 towards spring protection and purchase of pipes using the rest for household expenses.

The direct participation of women in operation of the water project increased once water supplies were installed in their homesteads. Table 2 shows that after construction women paid maintenance fees; reported vandalism to the project's committee and attended general meetings.

3.5 Achieving Effective Collective Action

Chesilot and Kiptegan projects exhibit different levels of collective action despite their similar membership criteria and the fact that both have successfully improved water supply for their members. Both have the same leaders since inception but only at Chesilot were elections held frequently. This together with regular weekly meetings attended by all members enhanced cohesiveness and performance levels at Chesilot. At Kiptegan poor leadership, poor attendance at monthly meetings and sluggish payment of fees has adversely affected progress at enhancing frequency and quantity of water supply particularly during dry seasons. Due to the lack of a storage tank, households relying on water from Kiptegan water project have to return to unprotected sources the moment the water level recedes below the distribution outlet. Compliance to bylaws was also higher at Chesilot compared to Kiptegan. This can be attributed to awareness of existing bylaws by all members and effective administration of sanction for non-compliance.

Broadly, interviews with members of Kiptegan and Chesilot water projects and other groups that have not been successful in initiating community water projects suggest that the success of the water projects can be credited to several factors including:

- By forming group-owned water projects, members showed their understanding of the value of pooling efforts and resources to solve a shared problem. In both the Chesilot and

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Kiptegan water projects, a pool of funds from members' contributions was used to buy adequate pipes to ensure that all members could have piped water in their homesteads, irrespective of their distances from the source of water.

- Similar socio-economic activities and values among members belonging to the same clan and religion increased cohesion and thus bonding capital within the group.[2] At Chesilot, emphasis was placed on the conduct of members during and after meetings. High discipline amongst members meant high attendance at weekly meetings, payment of dues on time and conflicts deliberated upon and resolved at meetings.
- Recognition of the importance of women's participation in water projects, even though they were not formal members, ensured success of the water projects. The ability of women to negotiate their participation and recognition of their role by male members speeded up the implementation process and improved efficiency.
- Awareness and enforcement of written and unwritten bylaws by all interviewed members and many of their wives enhanced collective action at Chesilot water project. The group instituted stiff sanctions for defaulters. For instance, one household's failure to pay its maintenance fee on time resulted in the amount of the fee being doubled and the water disconnected until the payment was made. In another case, one member was ejected from the group for not participating in group activities for two consecutive days without offering an explanation while at the same time refusing to pay a fine amounting to $3.
- A combination of good governance and transparency is enshrined in the management of the Chesilot water project; records are easily available for inspection by members during the weekly meetings and by members and their wives during the general meeting held once every 6 months. Moreover, officials were elected based on their generosity, determination and geographic location in the village. The latter enables them to monitor how members use water. Notable in all the three groups is the small number of members in the group. Members perceive that increased water supply per household is more likely in small than large groups. Small membership also enables officials to monitor and coordinate activities of water project easily.

While the Chesilot water project has not involved many women as formal members, the women's group that it fostered has contributed greatly to the success of the water project. In addition, both the Chesilot and Kiptegan groups have established linkages with government agencies in order to meet project objectives. In addition, the Chesilot group also enjoyed a successful partnership with a local financial institution that provided credit at favourable terms of repayment.

3.6 Conflicts Affecting Community Water Projects

Success at Chesilot and Kiptegan water projects has not been without conflict. Conflicts, though not violent, ranged from vandalism to increased tension between landowners and user groups, and between members and non-members of the water projects. Most of the conflicts revolve around the exclusion of sections of community and individuals from group membership and processes.

Frequent vandalism at the Chesilot spring was, according to the focus group discussions, caused by households that did not benefit from the piped water supply. These households

[2]See Lin, 2001 for more on social capital.

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had to access water from distant sources during the dry season. In the Kiptegan case, exclusion of existing users of a communal spring as beneficiaries to the piped water scheme and the failure by the group to consult them before beginning construction resulted in resistance against piping of water from the communal spring, forcing the group to identify another spring.

Exclusion of women in the negotiation processes, which is in accordance with local customs, has become a major challenge to the Chesilot water project. One such case was when the group negotiated access to the spring with the male landowner at the onset of the project but upon his death his wife refused to honour the agreement she had not been a party to. She has subsequently frustrated the group's efforts to protect the spring head by cultivating above the spring head and letting her cows eat tree seedlings planted by group members. Efforts by the local administration to resolve the problem have been futile since she refuses to attend meetings called.

4 CONCLUSIONS

The case studies presented in this paper illustrate how some community groups in the Western Kenya highlands have successfully mobilised local investment in water systems in an environment where most groups have failed to do so. This paper underscores the importance of involving both men and women in the management of water supplies. This involvement of men and women is not on equal terms, but in terms that are consistent with their socially defined capabilities and interests. In these cases, the interests of men in obtaining water for confined dairy cattle and cash crop production overlapped with the interests of women for water for domestic use and kitchen gardens. Nonetheless, this paper distinctively illustrates that collective action achieves greater impacts when the division of labour is characterised by reciprocity, when men and women negotiate their rights deliberately, when men and woman undertake complementary activities and when trust and social cohesion is strong between men and women.

This paper also illustrates the importance of women in implementing successful water projects, and ensuring efficient allocation of benefits. However, a major concern raised by the analysis remains the lack of guidelines on women's participation in the revamped water management institutions for Kenya. New questions arise. What are the implications of registration and commercialisation of community water supplies on the participation of women in water management? Will 'privatisation' of water sources dis-empower and marginalise women further as men seek to gain control of water as a commodity?

With the Water Act of 2002 still in the implementation phase, it is unlikely that there will be further changes in Kenya's national water policy in the near future. We thus call upon the regional Water Resources and Management Authority and Water Services Board to acknowledge the need for concerted efforts to put in place frameworks that will facilitate greater participation of women in the management of water supplies. Also, we call for public awareness campaigns to sensitise both men and women about the importance and benefits of involving women in the management of water projects.

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