REACH Improving water security for the poor

# Empowerment and Water Security Among Pastoralist Women in the Maasai and Samburu Communities of Northern Kenya

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**ABSTRACT**

The study explored questions around women, water and gendered power relations in Laikipia and Samburu counties of Northern Kenya using qualitative methods. It was based on the premise that one of the ways that women in patriarchal pastoralist communities are disempowered in relation to men is through the gendered dynamics of domestic and livestock water security. It also anticipated that the poor performance of local water security initiatives would be shown to be a further factor in women's relative disempowerment.

The study looked specifically at gender roles and responsibilities in relation to domestic water sources and domestic water security, and it tried to discern any significant differences between experiences of women who are members of organised groups (for example, income-generating and savings groups) and those who are not. It also looked at both water-secure and water-insecure communities. Domestic water sources range from seasonal to permanent, and include springs, hand-dug shallow wells, pumped boreholes and private wells. Few sources are accessed by payment. Some sources are shared with livestock and some are utilised by wild animals as well as domestic animals and humans.

The study has generated a wealth of granular detail about gender roles and responsibilities in relation to domestic water within the pastoral communities under exploration. The material helps deepen understanding about gender relationships within the household. The findings point to a need to revisit assumptions that equate responsibility for domestic water collection with the disempowerment of pastoralist women. For, in the study locations, **women carry full responsibility for domestic water security and management and they also exert significantly more control over water collected for household use than men. Women are able to deny their husbands access to water they have collected because a man's access to water within the family home is by consent, not by right. Thus, at the household level, female responsibility for domestic water is a source of some power, rather than a manifestation of disempowerment.**

The study assumed there would be some correlation between female access to income-generating activities and greater domestic water security. It also assumed that, if they had spare time, women would want to invest it in ways to generate income, as a route to improved economic empowerment. However, **easier access to water does not seem to lead to more participation in income-generating activities by women in the study areas since findings suggest they prefer to use this time for their other caring roles and for recreation**.

*Other salient findings*
Gendered roles and responsibilities include normative male responsibility for watering livestock. However, women may take on or share this burden too: for example, watering young or sick livestock that remain with the household during times of drought, or watering livestock in the absence of husbands or sons. Findings indicate that taking care of livestock as well as of domestic water needs is an additional burden on women's time and energy that does not enhance their felt or perceived power relative to other women.

Securing and management (for example, digging, clearing, repair and maintenance) of all water sources, domestic and livestock, are also male responsibilities and, to an extent, males control female access to water sources. For example, where domestic water sources are shared with livestock, priority of access is ostensibly controlled by men. Their control is pragmatic. In all but

one study location, women and girls have priority so that they can return home to complete other household chores, including childcare. However, their visits do need to be timed to fit around livestock watering needs; thus, along with distance to water sources, competition with livestock (and wild animals) is a factor impacting on women's and girls' time. No evidence was generated to suggest that male control impacts on the quantity or quality of water available for domestic use, except at one study location where, during times of severe water shortage, water for household use is rationed.

Domestic water collection and water security is a major occupation and preoccupation for women, even more so during shock and drought periods. Although household requirements likely change over the course of a woman's lifetime, meeting the domestic water requirements of her household requires careful planning, task management and resource management. As well as the time and energy involved in collection and transportation, there are childcare and other household needs to factor in, including cooking, bathing children and washing. The time and energy needed for water collection constrains female mobility, for instance, their ability to travel to visit relatives or to participate in meetings, and their access to resources beyond the immediate environment, such as health services and distant markets. Few women have more than 20 litres of water storage facilities, if any, but the findings testify to the positive difference water storage facilities can make in this regard, and to female daily life in general.

The majority of female respondents collect water by hand and on foot, though donkeys are used to carry jerrycans in some locations. Decisions about who will collect water, and when, are taken by the female head of the household. Women and girls collect the domestic water. Boys are very rarely asked, and then only young boys. In polygamous households, each wife is responsible for collecting her own sub-household's water, over which she has control. Women who are co-wives or neighbours may help one another with water collection at certain times, such as around the time of childbirth, on the understanding the assistance will be reciprocated.

When necessary, women are responsible for finding the money, or negotiating with their menfolk for the money, to pay for access to water and its transport from water source to household. Relatively few of the women consulted have much independent income, if any, or access to a savings and loan group. Social gender norms do not seem to give men the right to control women's independently sourced income. How it is controlled and spent seems to vary depending on the nature of a woman's relationship with her husband. As well as the greater chance of having income from paid employment opportunities, men control access to livestock-based income. Unless they have sufficient income of their own, women are dependent on their menfolk to provide money for domestic water when payment is required. Findings suggest women go to great lengths to obtain household water before they seek financial help from their husbands or working sons, such as walking exceptionally long distances during times of severe water shortage and managing the household on a minimum amount of water.

For the majority of women, the fulfilment of their responsibility for household water is extremely tiring and time-consuming. Findings from male respondents suggest that, whilst there is some awareness of the physical toil entailed, sharing the burden, thereby breaking with gender norms, is not considered an option. Nor is there evidence that many men are thinking of other ways to ease the burden, like investing in rainwater harvesting or water storage, or repairing broken water pumps, thus reducing the heavy opportunity costs to women and the negative consequences for children.

The findings show that, generally speaking, women with access to various forms of capital (cultural, social, financial, political, intellectual and knowledge) are perceived to be more respected, influential and powerful than other women. They also are said to cope better during periods of water stress, except in one location (Meibae) where it seems that relative power brings no advantage when it comes to water security.

The findings are mixed on whether community-level water security initiatives such as boreholes have impacted positively or otherwise on women's lives, i.e., whether they have increased women's empowerment or reduced disempowerment. Access to water has improved certain aspects of their lives by, for example, reducing the time spent and distances covered while fetching water, reducing waterborne disease and making more water available for domestic use. As noted above, the evidence suggests that, contrary to expectation, improved access to water does not necessarily result in women choosing to invest time in income-generating activities.

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**TABLE OF CONTENTS**

Abbreviations and Acronyms

| | |
|---|---|
| FGD | Focus group discussion |
| HH | Household |
| IGA | Income-generating activity |
| KeS | Kenya Shillings |
| KII | Key informant interview |
| LS | Livestock |
| NRT | Northern Rangelands Trust |
| PI | Principal investigator |
| RA | Research assistant |
| SSI | Semi-structured interview |
| WRUA | Water resources users association |
| WSOUI | Water source observation and user interview |

**TABLE OF FIGURES**



**LIST OF TABLES**

# 1 INTRODUCTION

## 1.1 Background

Pastoral societies often bear the greatest burden of water insecurity worldwide. However, people within such societies are affected in different and unequal ways. Water insecurity is entrenched in 'power, poverty and inequality, not physical availability' (Watkins, 2006), meaning access to water resources is shaped and limited by social and structural constraints. This study explored the assumption that pastoralist women in Northern Kenya are more vulnerable during times of crisis and reduced resource availability than men because of women's lack of resource-related powers and rights, despite the many resource-related tasks that are women's responsibility. The research examined how poverty, gender and resource access overlap by researching pastoralist Samburu and Maasai women's disempowerment in relation to the domestic water security constraints they face in the arid and semi-arid areas of Northern Kenya. A combination of primary and secondary research was used. The study methodology included a literature review, analysis of current programming, focus group discussions, key informant interviews, observations, and the recording of key indicators at water points. The research findings will feed into the development of a technical model for sustainable and holistic water resource management as part of a wider programme working with the established community conservancies and the Northern Rangelands Trust (NRT)[1]. The model will be used by community conservancies in Northern Kenya to increase water security for pastoralist communities with a special focus on key vulnerable groups.

## 1.2 Research Aims

The study sought to explore the constraints women face and how this affects water security in relation to resource sustainability, inclusive services and sustainable growth. The research aimed to enrich the water management model by informing inclusive water services and sources, ultimately increasing water security for the most vulnerable poor. The study had the following objectives:

a) To determine gender relations and power dynamics, specifically in relation to water security, during normal periods and periods of shock in pastoralist households (Njagi 2013)
b) To determine the hierarchy of access to water resources and water management roles for users (men, women and children) and for domestic and livestock use (Cleaver and Elson 1995)
c) To evaluate the successes and bottlenecks of initiatives aimed at improving water security and how this contributes to empowering or disempowering women
d) To use research on women's disempowerment to inform and influence conservancy strategies to improve sustainable and holistic management of water resources and water supplies

## 1.3 Research Questions

The following research questions were formulated to address the research aims:

**Gendered access to water resources and water management**

- What is the gender division of labour and responsibilities in relation to household water?
- To what extent are the needs of different users met in terms of water access?
- How are water collection and management responsibilities divided among users?
- What gender power dynamics are at play in relation to water security?

[1] Northern Rangelands Trust is working with community conservancies throughout Northern and Eastern Kenya. For more information see: https://www.nrt-kenya.org/what-is-community-conservation

**Gender and power dynamics during normal periods and periods of shock**

- How do the roles and responsibilities of men and women change during normal and shock periods?
- What constraints do women and men face during normal and shock periods?
- How does the political economy of water affect household water security during normal and shock periods?

**Successes and bottlenecks of water security initiatives**

- To what extent do initiatives to make water services more sustainable affect gender power dynamics and improve or reduce access for the poorest women?
- What roles do water security and sustainability play in giving pastoralist women access to participation in income-generating activities?

## 2 LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

### 2.1 Women and Access to Water Resources

**The problem of exclusion of women in water access and management: What water resources are available to pastoralist communities? Are these resources accessible differently to women?**

In studying water management among small-scale irrigation farmers, Cleaver and Elson (1995) argue that there is gender differentiation in the application of water resources for both productive and domestic use. Men dominate use of water for irrigation and cattle (the productive sphere) and women dominate the domestic sphere. In addition, communal ownership of water resources tends to disadvantage women due to skewed control of productive resources in favour of men (Zwarteveen & Meinzen-Dick, 2001). The division of water use into domestic and productive uses has been criticised as not representative of livelihood realities, which tend more towards multiple uses of water (Parker et al., 2016). The inclusion of women in water management committees has failed to address these inequalities in control (Cleaver & Elson, 1995; Parker et al., 2016). In many cases women are entirely excluded from water management (Meinzen-Dick & Zwarteveen, 1998; Van Koppen, 1998).

**Is there a relationship between water resource availability, use and allocation, and women's empowerment among pastoralists?**

Gender inequalities in water access and management have a negative impact on women. In the first instance, the burden of fetching water for domestic use falls on women, thus limiting the time available to them for other activities, including education, income generation and cultural and political involvement (Khosla & Pearl, 2003; Parker et al., 2016). Second, lack of access to safe water limits women's participation in income-generating activities that require the use of safe water such as food preparation for local markets (Khosla & Pearl, 2003). Third, intra-household financial responsibility for domestic water supply is shouldered by women who, in most cases, have fewer resources than men. Fourth, the absence of women in decision-making leads to the creation of policies that do not address women's water-access needs, leading to further marginalisation and disempowerment (Khosla & Pearl, 2003; Parker et al., 2016; Van Koppen, 1998). In a worldwide study of small-scale irrigation scheme development, Van Koppen (1998) demonstrates how vesting water rights in male household heads dispossesses women farmers of their water rights.

**How does seasonality in water availability impact access and related outcomes?**

The effects of seasonality on water access rights and practices among pastoralist communities have been studied among the Borana, revealing that water rights not only vary according to the type of water source (permanent or temporary) but also change during drought and wet seasons with significant negative impacts on access for women (Tache & Irwin, 2003). Recent studies show that increasing commercialisation of water during drought in pastoralist communities leads to the exclusion of the most vulnerable, which includes the poor and women (Flintan, 2007). In pastoralist communities, failure to secure enough water during the dry season affects the capacity of poor households to retain assets and generate wealth. This is evident in the fact that they obtain livestock prices that are 15% to 20% lower than those obtained by wealthier households and experience a drop in milk yields of 50% to 75% (Coulter, Abeba, Kebede, Ludi & Zekele, 2009).

### 2.2 Water-Related Roles in Pastoralist Communities

The gender gap with regards to rights to common-pool resources (including water) can be assessed in three ways: (a) exploring the historical justification for the ways in which a certain culture or society determines access to and control of common-pool resources, (b) carrying out an analysis of the gender division of labour and responsibilities, and (c) examining ways in which people can obtain rights (Zwarteveen &

Meinzen-Dick, 2001). Studied have shown that, in pastoralist communities, most ownership and control of productive assets such as livestock is the domain of men, with women playing a limited role in decision-making (Archambault, 2016). Among pastoralist communities, women play significant roles in caring for animals and carrying out domestic chores, and bear the brunt of most water-related tasks (Flintan, 2008; Kristjanson et al., 2014; Tefera Alemu & Flintan, 2007). Migration practices in search of water lead to an increased burden for women since they are responsible for dismantling, transporting and rebuilding household shelters (Kipuri & Ridgewell, 2008).

### 2.3 Women's Empowerment in Pastoralist Communities

Women's empowerment is best understood through the lens of the common ideological and normative systems that determine how men and women are likely to behave towards each other. Thus, it is necessary to first understand the gender systems—the social collectivities that the group subscribes to—before trying to understand the individual woman (K. O. Mason & Smith, 2003). In this respect, studies which have women as the subject need to focus on understanding the ways in which rights, obligations and resources are allocated, accessed and realised between females and males within different gender systems (K. O. Mason & Smith, 2003). Women's empowerment has been studied through the lens of theories in the fields of sociology, economics and socio-cultural anthropology. According to Khan and Awan (2011) the dominant theories are the sociological gender inequality theory (which looks at the relationship between resource control and woman empowerment within the household), the economic household decision-making theory (which looks at the bargaining power of women within the household decision-making process) and the anthropological view (which looks at the socio-cultural environment and its impact on women autonomy). In addition, K. O. Mason and Smith (2003) adopt a sociological approach that looks at women's empowerment as a product of social systems, that is, gender systems and ideologies. To be useful, definitions of empowerment should be based on what women view it to be as opposed to the researcher's view of what it should be or how empowered the women under study are perceived to be (K. O. Mason & Smith, 2003).

Commodification of pastoralist produce and access to markets has both negative and positive implications for women. Studies of women's empowerment in pastoralist communities of north-eastern Somalia and the Ogaden region of Ethiopia have demonstrated that women play a critical role in the commodification of camel milk, which leads to a positive impact on household food security and generates 80% of household income during drought and 40% during the dry season (Kristjanson et al., 2014). However, it has also been shown that, when milk is commercialised, the unanticipated result is that men take over the role of milking to control the income, leading to the erosion of women's control over milk products (Kipuri & Ridgewell, 2008; Kristjanson et al., 2014). Sedentarisation has been observed to have a positive effect on the economic empowerment of pastoralist women since it leads to better market integration, as is the case among Ariaal and Rendille women in Kenya (Kipuri & Ridgewell, 2008).

Women's empowerment among pastoralist communities can be attained through control over small livestock and livestock products (Kristjanson, 2010); in some communities in northern Kenya, women have formed women's groups to provide better access to microcredit and livestock markets, leading to improved women' empowerment outcomes (Cappock, 2006). Women's empowerment may be understood as increased access to resources, agency and achievement (Kabeer, 1999) and the ability of women to extend their being and doing (Mosedale, 2005), leading to positive livelihood outcomes.

### 2.4 Gendered Access to Water, Women's Empowerment and Water Security

The linkages between control of water and gender power dynamics need to be understood for each specific context in order to clarify such assumptions as positive causality between water rights for women and gender equality (Zwarteveen & Meinzen-Dick, 2001). In this respect, it is especially important to understand how women view their access to and use of water and how they assess the opportunity cost of participating in

water initiatives—do increased water rights confer better access? What benefits and costs accompany increased water rights and thus water security for women? (Zwarteveen & Meinzen-Dick, 2001)

Among pastoralist communities, women's access to assets does not translate to ownership rights and their control over livestock is negligible (Kristjanson et al., 2014). Such ownership and access rights can be quite complex and vary with communities (Kipuri & Ridgewell, 2008). Women have more access to and control of the sale of livestock products such as milk, milk derivatives and hides (Kipuri & Ridgewell, 2008). Income from the sale of such animal produce is critical for ensuring household water security since women are responsible for ensuring adequate domestic water supply, with increasing demands placed on them during times of water stress (Parker et al., 2016). The downside to increasing commercialisation of milk products is capture of the income from sales of milk products by the men (Kristjanson et al., 2014). This disempowers women and affects their ability to pay for household needs, including water, thus further confirming the notion that household water scarcity and insecurity is more 'rooted in power, poverty and inequality' (N. Mason & Calow, 2012) and not necessarily in the physical shortage of water (Parker et al., 2016). In addition, during times of water stress pastoralist women are required to travel longer distances in search of water, thereby creating a situation of 'time poverty' and limiting their time for other income-generating activities (Parker et al., 2016).

Pastoralist women depend heavily on shared water resources for their livestock-related income-generating activities. However, it is evident that access and withdrawal rights are defined in favour of the productive uses of water largely controlled by men (Tache & Irwin, 2003). In instances where water resources prove unsustainable, this lack of control of an important factor of production poses the risk that women become water insecure and are unable to engage in income-generating activities. The ability of women to negotiate resource access and thus acquire the water they need for household use and to engage in income-generating activities needs to be studied further (Parker et al., 2016).

### 2.5 Research Gaps

During the design workshop, the discussions unearthed changed perceptions in the intra-cultural understanding of power and empowerment among women that can be developed further to conceptualise a measure of women's empowerment among pastoralist communities of Northern Kenya. Empowerment was understood as a woman's ability to generate cash income, access microcredit, participate in women's groups and participate in income-generating activities, and her ability to achieve success (as perceived by her peers and other community members) in education, leadership and politics, and business.

A critical question explored during the workshop was whether there are differences in water security between women who are members of organised groups and women who are not members. The premise is that women who join groups gain access to more resources than women who are not members of groups. This is considered useful in addressing water security in the household. The team felt that women in groups were perceived to be more empowered and therefore group membership might be considered a proxy for empowerment. Women who are group members are more likely to start businesses than other women. One of the participants indicated that 'for the woman who is in business—who has money—she can even hire a water bowser to bring her water'. Among the Maasai in Lekurukki, these women's groups can be found in Kurikuri, for instance, a group called Naserian in Doldol. It also emerged that such groups have a significant political voice in the community and are prioritised in the allocation of resources targeted for women, such as government funding for development projects.

Among the Samburu in Meibei, women's groups are not as well defined—it is not clear if they exist and in what form. In all three communities, the findings are that individual women do not generally wield traditional authority or power (considered a masculine domain) but they may command respect due to family relations or their involvement in leadership, business or politics.

Based on these observations, the definition of empowerment adopted is tied to a woman's ability to command respect or to exercise authority in social, family, business and political circles, which, in turn,

gives her access to resources that would help improve her household's well-being in terms of water security.

### 2.6 Conceptual Framework

The study was premised on the hypothesis that the chronic domestic water security problems faced by pastoralist households in Laikipia and Samburu are fundamentally linked to disempowerment of adult females relative to adult males in the household. Disempowerment, being measured by an analysis of gender relations, was assumed to show that males dominate decision-making and control or constrain female access to water sources, and women lack access to sources of income. Empowerment was assumed to be achieved, at least in part, by increasing women's access to opportunities for generating personal income. The study sought to explore the question:

> **To what extent is domestic water security in pastoralist households constrained by the disempowerment of women?**

Implicit in this question is the inverse:

> **Does increased women's empowerment (for example, through membership of women's income-generating groups) lead to greater domestic water security?**

To answer this question, the study was designed to generate a gendered analysis of domestic water security issues. It drew on the following key gender concepts.

**Gender** is an analytical concept referring to the social construction of masculine and feminine identities. Socially constructed, our gender identities are typically categorised as male and female,[2] but their associated roles and responsibilities can be vastly different across cultures, sub-cultures and contexts. They can change over time and in response to circumstance such as urbanisation, conflict and stress or shocks.

Talking about gender roles and responsibilities refers to the **normative behaviours** and ideals associated with being a 'woman' or a 'man' in any society. These gender norms are taken for granted. They govern how one is *expected* to perform as a man or woman, girl or boy, and what will be one's prescribed and proscribed tasks, roles, responsibilities, extent of freedom and access to opportunities.

Importantly, the study understands gender as being **relational** rather than synonymous with 'women and girls'. That is, that both women and men lead gendered lives, and female and male gender identities are complementary and interrelated. To understand female experiences and how to improve the status of women or improve conditions for all, the study also needed to understand male experiences and perceptions regarding domestic water security.

At the heart of the study's conceptual approach is the understanding that gender is more than a set of ideas about 'male' and 'female' people and how they are expected to interrelate. It is about structural power relations and how 'power' is categorised and symbolised in a society.[3] **Intersectionality** understands that a person's relative power or powerlessness does not depend on their gender identity alone but on all the different factors and variables that form that person such as age, marital status, education, cultural and ethnic identity, and religion. Linked to this is the concept of the **gender order,** an analytical tool used in gendered context analysis. It describes the hierarchies of power that operate in a particular context, whereby some women and men may be more powerful than others. It is a helpful reminder to be context specific. It highlights, for example, the fact that one cannot assume that 'all women' or 'all men' experience the same levels of disempowerment or empowerment, for example.

[2] Throughout this document, gender is used in the gender binary sense, that is, conforming to the idea that gender is either male or female based on sex assigned at birth, rather than a spectrum, as is increasingly being explored and understood. Whilst the gender spectrum is a growing field of study, it has yet to be adopted as a mainstream concept in the Kenyan context.

[3] See for example, Carol Cohn, Women and Wars: Towards a Conceptual Framework … Chapter 1, Women and Wars, Cohn (ed.)

Intersectionality and the notion of a gender order, and analysis of **gender relations** and the **gender division of labour** provide insights into the nature of the social, economic and political structure of power relations in each context: between females, between males and females, and between males. From a development perspective, understanding gendered power relations and dynamics in a given context is essential for the design of meaningful and potentially gender-transformative interventions in any sector.

# 3 METHODOLOGY

## 3.1 Study Sites

The study took place in five rural communities located in the Laikipia and Samburu counties of Northern Kenya. The communities were identified by purposive sampling from settlements located within the conservancies of Lekurukki and Meibae (see Table 3.2). It was originally envisaged that fieldwork would be undertaken in three areas to enable the study to capture findings from three social groups: Maasai, Samburu and Rendille. However, for the sake of time and quality of data, this plan was revised down to two areas and social groups (Maasai and Samburu) by the end of the research planning workshop.

## 3.2 Research Design

The study design was developed through a participatory research design workshop conducted in Nanyuki from 24 to 28 October 2016. Facilitated by a gender and social development specialist in coordination with the principal investigator, the workshop was attended by eight field research assistants selected from the study area. The research planned to use qualitative data collection methods.

The first three days of the design workshop (24–26 October) were spent developing a gendered contextual analysis of the study communities, establishing a locally-derived understanding of water security and women's empowerment, designing the research tools and translating the draft tools into Maa. On the afternoon of the third day, the research assistants were taken through mock fieldwork sessions using the draft tools. This exercise also included training on the use of qualitative interviewing skills and audio recording skills. The fourth day of the workshop (27 October) was spent in a field pre-test of the tools conducted among the Maasai community living in Nadungoro village of Lekurukki Conservancy, Laikipia county. During the pre-test, two focus discussion groups (FGDs), one based on an organised women's group and one a group of men, and a key informant interview (KII) at household level were conducted. A debrief of the field data collection exercise was conducted after the fieldwork, with the emphasis on researcher interviewing and recording skills. The last day of the workshop was spent in revising the five selected data collection tools:

a) Single sex focus group discussion (FGD) conducted with women members of a savings/ welfare group, women not members of a group and men/ youths
b) Semi-structured interviews (SSI) at household (*boma*[4])
c) Mapping of local water sources done with elders, key informants and elder women
d) Key informant interviews (KII) with local leaders, elders, area-based technicians etc
e) Water source observations and user interviews (WSOUI) held at water collection points

Based on the research questions, the study design identified several sub-topics for investigation. These sub-topics were also used to derive the analytical framework for the study. These are summarised in Table 3.1 below.

[4]A 'boma' is a compound containing several dwellings and an enclosure for livestock. In the Maasai and Samburu cultures it is usually a homestead for the extended family group.

Table 3.1. Summary of sub-topics identified for investigation under the research question

| Measures of Empowerment | TOPICS AND SUB-TOPICS THE STUDY EXPLORED | | | | | |
|---|---|---|---|---|---|---|
| Gender roles and responsibilities | *Water sources and their management* | *Household water collection* | *Household water use* | *Household water storage* | *Household water transport* | *Household income and water-related expenditures* |
| **Decision-making** | Seasonal changes and variables | Household water requirements | Household water usage/ uses | Collection of water to store | Factors influencing decision to use transport | Generating income |
| **Ownership or control** | Household vs livestock water sources and priority of access | Means of collecting water | Access to household water | Stored water and means of storage | Ownership of resources, i.e., of means of transport (e.g., donkey) | Use of income for household water-related expenses |
| Gendered power and influence (and powerlessness and disempowerment) | | | | | | |
| **Agency and influence: who has the power to act or decide** | Management of water sources | Who collects household water and how often (frequency) | Management of household water | Household resilience in relation to water | Use of means of transport and payment for transportation | Outlay on water-related expenses |
| **Community impacts** | Seasonal variation—changes during periods of drought | | | | | |
| | Difficulties the community faces in relation to water security | | | | | |
| | Community water projects' impact on women's and men's lives | | | | | |

### 3.3 Context Analysis

A context analysis of the five study communities was carried out (the summary is shown in Table 3.2 and a more detailed analysis in Annex 2) and revealed information on location characteristics, water services management, livelihood options, land ownership, institutionalised services, communication, population characteristics, external interventions carried out in the communities and a general profile of homestead composition and structure. Data used in the construction of this analysis was drawn from the research design workshop, household surveys and other interviews conducted during the field data collection exercise.

Table 3.2. Characteristics of the study sites

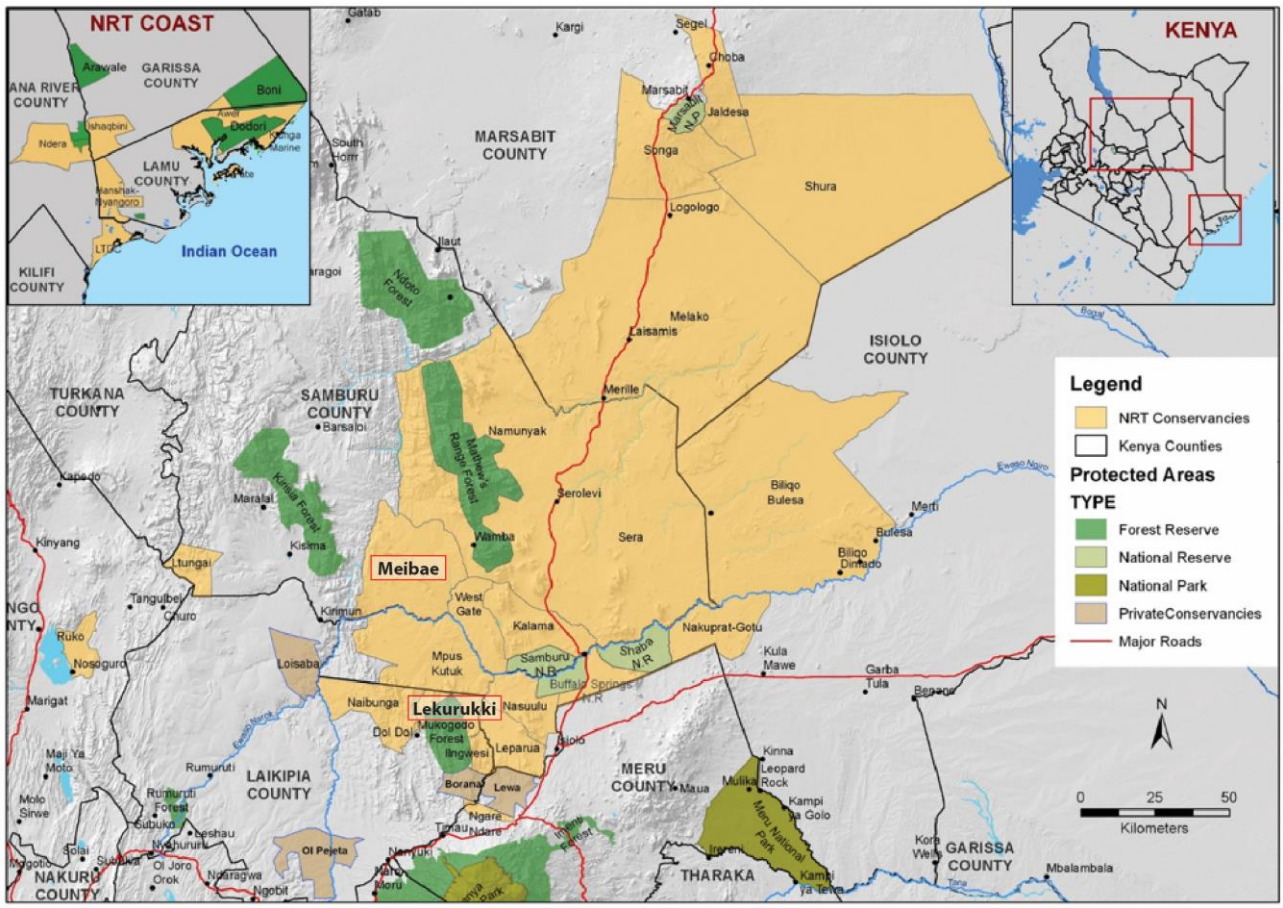
| | STUDY SITE CHARACTERISTICS | | | | |
|---|---|---|---|---|---|
| **Community name** | Nadungoro | Kurikuri | Sesia | Lengei | Nkaroni |
| **Location: key features** | Settlement located in Mukogodo Forest | North Kurikuri and Saeku settlements are located above Doldol Town and partly in Mukogodo Forest | Remote, no major settlements; bordered by Ewaso Ngiro River | A few small settlements traversed by the main road | Remote, no infrastructure; traditional, semi-nomadic households |

| | STUDY SITE CHARACTERISTICS | | | | |
|---|---|---|---|---|---|
| **Community name** | Nadungoro | Kurikuri | Sesia | Lengei | Nkaroni |
| **Water services and management** | Water secure (presence of springs); water is free | Fairly water secure in Doldol); long distances to water in N. Kurikuri, Saeku | Water insecure; Ewaso Ngiro River is main water source | Fairly water secure (reliable borehole); community pays for water | Most water insecure; long distances to water (approx. 8 km away) |

### 3.4 Sampling and Sample Characteristics

Two culturally and linguistically related but geographically separated tribes (the Maasai and Samburu) were purposively sampled to represent diverse socio-cultural dimensions: Within these two groups, study sites were selected within two community conservancies (Meibae and Lekurukki) based on their perceived water security status (secure or insecure) as understood by the design workshop participants. Five study sites were selected: Nadungoro, Kurikuri, Sesia, Lengei and Nkaroni (see Table 3.2 and Figure 3.1).

Figure 3.1. Map showing NRT conservancies with location of Meibae and Lekurukki




In each site, respondents were identified through a two-step participatory process, starting with consultations with key informants and local resource people who included conservancy managers, local administrators (chiefs, assistant chiefs, village elders) and leaders of women's groups. Key informants were requested to provide names of available groups in their respective communities and individuals who are key people in water management, opinion leaders on local community issues or county government officials working within the communities. The research team purposively selected participants from the groups and individuals thus identified to include both genders and a range of ages and geographical

locations. In the second step in the process, the research team traced the purposively selected individuals and groups and confirmed their availability and willingness to participate in the study. In certain instances, individuals for the KIIs were recruited purposively from among the FGD groups based on demonstration of extensive knowledge or unique perspectives, which, it was thought, would be of value in enriching the data collected for the study. A summary of the study sample is shown in Table 3.3 below.

Table 3.3. Study sites and study sample

| TOOL | STUDY SITES | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | **Conservancy** | **Lekurukki** | | **Meibae** | | | |
| | **Settlement** | Nadungoro | Kurikuri | Sesia | Lengei | Nkaroni | |
| **Tool 1: FGDs** | **Pastoralist women in IGA group** | 21 | 20 | 9 | 10 | 7 | **67** |
| | **Pastoralist women not in IGA group** | 8 | 3 | 7 | 10 | 8 | **36** |
| | **Pastoralist men available in community at time of study** | 0[5] | 6 | 13 | 9 | 8 | **36** |
| **Tool 2: SSI at boma (house-hold) level** | **Adult women at boma level** | 5 | 5 | 6 | 6 | 6 | **28** |
| | **Adult men at boma level** | 0 | 1 | 0 | 0 | 0 | **1** |
| **Tools 3 & 4: KII & Mapping** | **Adult female key informants** | 1 | 1 | 2 | 1 | 1 | **6** |
| | **Adult male key informants** | 1 | 2 | 1 | 2 | 2 | **8** |
| **Tool 5: WSOUI** | **Women collecting water/ watering livestock at time of observational visit** | 6 | 4 | 5 | 5 | 6 | **26** |
| | **Men collecting water/ watering livestock at time of observational visit** | 0 | 0 | 0 | 0 | 1 | **1** |

Respondents within each site were purposively sampled to capture the following key variables:

- Individual women and men from pastoralist households in both water-secure and water-insecure locations
- Pastoralist women who are part of groups involved in income-generating activities and groups not involved in income-generating activities (IGA)
- Pastoralist women who are not part of organised women's groups
- Individual women and men who have an in-depth understanding of topical issues pertaining to water security and women empowerment

Efforts were made to consult with a wide age-range of women and to capture diverse socio-demographic characteristics. Older and younger men were targeted, the main criterion for male respondents being availability—few young men were present in the communities as they had migrated in search of pasture for the livestock.

The sample (see Table 3.4) was 11.9% male and 88.1% female in Lekurukki conservancy, 28.8% male and 71.2% female in Meibae conservancy and, overall, 22% male and 78% female. A total number of 14 key informants were interviewed, of whom 42.9% were female and 57.1% were male. The study consulted a total of 209 individuals (163 women, 46 men). It is important to note that the sample size was intended to be indicative rather than statistically representative.

[5] In Lekurukki it was not possible to have an FGD with the men because they had relocated in search of pasture.

Table 3.4. Sample characteristics by gender

| Conservancy | Male | Female | Total | % Male | % Female |
|---|---|---|---|---|---|
| Lekurukki | 10 | 74 | 84 | 11.9% | 88.1% |
| Meibae | 36 | 89 | 125 | 28.8% | 71.2% |

The key informants were drawn from various stakeholder groups including, but not limited to, conservancy management, water resources users association (WRUA) management, the business community, community opinion leaders, women leaders and group ranch management (see Table 3.5).

Table 3.5. Characteristics of sample for KIIs

| Conservancy | Location | Male | Female |
|---|---|---|---|
| Lekurukki | Nadungoro | Conservancy manager (NRT) | Elderly woman |
| | Kurikuri | Group ranch chairperson, WRUA chairman | Local opinion leader (woman politician) |
| Meibae | Sesia | Rangeland coordinator (NRT) | Women's group leader<br>County ward administrator |
| | Lengei | Administrative chief<br>Assistant administrative chief | Women's group treasurer (also member of water committee) |
| | Nkaroni | Former councillor (also former conservancy board member)<br>Elderly man (current conservancy board member) | Business woman (women's group secretary) |

### 3.5 Research Tools and Data Collection

The study employed standard qualitative research tools: focus group discussions, semi-structured interviews and a rapid-mapping tool. Five tools were developed and used in total, allowing comparison and triangulation of findings as follows:

a) Single sex focus group discussion (FGD) conducted with women members of a savings/ welfare group, women not members of a group and men/ youths
b) Semi-structured interviews (SSI) at household (*boma*)
c) Mapping of local water sources done with elders, key informants and elder women
d) Key informant interviews (KII) with local leaders, elders, area-based technicians etc
e) Water source observations and user interviews (WSOUI) held at the water collection point

The tools are explained in detail in Annex 1.

Field data collection was undertaken from November to December 2016. To ensure comprehension and to put respondents at ease, consultations were conducted using the local Maa languages, Maasai (in Lekurukki) and Samburu (in Meibae). Throughout the fieldwork, the research team met for periodic progress review sessions. In addition, the translation and interpretation of the research tools were regularly reviewed for consistency.

### 3.6 Data Management and Analysis

All interviews were audio recorded, translated, transcribed and then thematically analysed at two participatory data analysis workshops. The first participatory data analysis workshop was conducted in Nanyuki from 4 to 6 January 2017 and involved the principal investigator (PI), the senior research assistant (RA) and 5 RAs. The second workshop was conducted in Nairobi from 17 to 18 January 2017 and involved the PI and the senior RA. Both workshops were facilitated by the same international gender specialist who supported the research design and tools development. In addition, data was captured through photographs, flip charts generated during workshop sessions and participatory mapping exercises.

All responses from the interview transcriptions were entered in a spreadsheet and grouped according to key themes. Data was anonymised and categorised by geographical location (conservancy, study site), respondent gender, member/ non-member of women's IGA group, age, water security status of village and household status (polygamous/ non-polygamous). Responses were grouped through a deductive, participatory analysis involving the researchers examining the findings against the study objectives and revised research questions. Emergent themes and relationships were identified across the entire dataset and categorised. Data from similar questions across several respondent categories was compared to triangulate the findings.

To illustrate the relevant findings, quotes were selected and included in the relevant sections of the report. In this respect, an attempt has been made to be as inclusive as possible and several quotations from different people may be used to illustrate a point.

### 3.7 The Research Team

The senior researcher led the fieldwork with assistance from one senior research assistant recruited from the local Samburu community. The consultations were conducted through a team of four Maa- and Samburu-speaking local research assistants, guided by the senior research assistant. The local research assistants were selected from an initial group of eight drawn from three conservancies: Lekurukki (one male, two female), Meibae (one male) and Melako (two male, two female). The initial eight, aged 21–27 years old, were selected based on their knowledge of the project areas and the cultural context and their completion of secondary school education. They all participated in the research design workshop, at the end of which four RAs (two male and two female) were selected to conduct the fieldwork.

### 3.8 Ethical Considerations

Participation in the study was based on informed verbal consent by the respondents. Prior to consultations, the researchers explained the study aim and consultation process to each prospective informant, who was then asked whether or not they wished to participate. Participation was entirely voluntary and anonymous. It was undertaken without remuneration or other incentive. Verbal consent was recorded by the researcher in their field notes. By consent it was understood that the informant would allow the researchers to keep a written and or digital record of what they said, but the digital record would only be used to clarify written notes and then destroyed. The information collected would be used for a written report that would be disseminated to relevant stakeholders, including NRT, and potentially accessible to the general public. In addition, FGDs and semi-structured interviews at household (boma) level were conducted in a gender-segregated environment.

To ensure full comprehension and informed consent, the fieldwork consultations were always conducted in the local language of the respondents (Maa) and then translated into English for the purpose of analysis.

### 3.9 Challenges and Constraints

The following limitations may have affected the research design, field data collection and data analysis:

a) Difficulty in translating some key concepts, though this was not insurmountable: for example, 'empowerment of women' is not a concept that exists in the traditional cultural context of the Maa community. In the Maa communities where this study was carried out, women equate 'power' with 'respect' and the closest translation of 'empowerment' in Maa is the word *'nkitoria'* which represents masculine authority. When the researchers used this term in Meibae they found that it is a strongly gendered term since only men can be said to have *nkitoria.* To address this issue, the team agreed on a common explanation that they then used during the consultations:

> **Empowerment**
>
> A woman's ability to command respect or to exercise authority in social, family, business and political circles, which in turn gives her access to resources that would help improve her household's well-being in terms of, for example, water security

b) Inopportune timing of the fieldwork, with many men absent: the study was conducted during a period when the communities were undergoing the start of a drought, with related water stress conditions—this limited the availability of men as many had travelled in search of pasture for their livestock. The men who the team were able to consult with tended to be older males who no longer migrate with the herds. This means that the study was largely unable to gather the views of men across different age groups, whereas the women consulted ranged in age from under 20 to over 60.

c) Lack of suitably qualified local research assistants: the plan had been to recruit local research assistants from within the conservancies where the study was to be conducted. In practice, it proved very difficult to find adequately educated and available candidates, especially female candidates, from within the target populations. The recruitment pool was therefore widened, with success. However, although all had familial links to the study communities and childhood familiarity, the young, educated Maasai- and Samburu-speakers who were recruited were urbanised and not all as fluent in their mother tongues as they would have been had they remained in the locality. Also, their depth of knowledge about local customs and culture varied. To compensate, and to ensure quality control, the study recruited a seasoned researcher conversant with both Maasai and Samburu to support the research assistants.

d) Respondent fatigue from previous studies: the women in Kurikuri protested that they had been through 'so many' interviews for other studies and were not willing to spend much time in the discussion. As a result, the team conducted FGDs in the lower regions (Doldol, Kopio) whilst the household interviews were conducted in Saeku, a separate settlement located uphill, north of Doldol Town and some distance from the FGD location. Consequently, some of the findings on water access for Kurikuri seem to contradict each other as they refer to two different sets of water sources.

e) Lack of knowledge about the local women's groups: in hindsight, the study needed to have undertaken a rapid survey of the women's groups that exist in the study areas before commencing the fieldwork in order to make full use of the research variable: member/ non-member of a women's group.

f) Study scope versus time and resources available: the scope and depth of the study expanded somewhat as new questions and interests emerged from the research planning workshop. As a result, five research tools were developed and applied. Given that there could be no corresponding expansion of the financial, time and human resources available for the study, this was a relatively challenging situation. Lessons were learnt and all credit goes to the research team for managing to meet the additional demands despite over-stretched resources.

# 4 STUDY FINDINGS

## 4.1 Gendered Access to Water Resources and Water Management

- What is the gender division of labour and responsibilities in relation to household water?
- To what extent are the needs of different users met in terms of water access?
- How are water collection and management responsibilities divided among users?
- What gender power dynamics are at play in relation to water security?

### 4.1.1 Overview of water sources

There are different kinds of water sources in the five communities serving humans, livestock and wild animals. Their use varies according to season and rainfall (whether it is a period of normal rainfall or a period of drought). These are shown in Table 4.1 below.

Table 4.1. Water sources[6] during normal and drought periods

| Settlement | Normal Period Water Source | Drought Period Water Source | Users |
|---|---|---|---|
| Nadungoro | Springs (3) | Springs (3) | Humans, small livestock, wildlife |
| Kurikuri | Springs, shallow wells, rainwater harvesting, water pan, borehole | Springs (at Kopio), borehole, water pans | Humans, livestock, wildlife |
| Sesia | Dams and water pans (3), streams, shallow wells, Lauro River | Ewaso Ngiro River, hand-dug wells in river beds, sand dams, boreholes, water bowsers (from County Government) | Humans, livestock, wildlife |
| Lengei | Lororoi/ Simitini and Seyia rivers, Ewaso Ngiro River, shallow wells, water pan, Lengei borehole | Boreholes (Ltinkai, Lengei), Seyia River, Laantare water pan | Humans, livestock |
| Nkaroni | Dams and water pans (*silanko*), streams, Resim River | Rivers (Nagor Owuaru, Resim), shallow wells in river beds, Barsilinga borehole, Nendikir Dam | Humans, livestock |

### 4.1.2 Prioritisation of different water uses

The findings show that, to a certain extent, males control female access to water sources. For example, where domestic water sources are shared with livestock, priority of access is ostensibly controlled by men. Their control is pragmatic. In all but one study location, women and girls have priority so that they can return home to complete other household chores, including childcare.

A summary of the responses on priority to water access is shown in Table 4.2 below.

[6] Local names have been provided for some of the water sources. In other cases, these are referred to generally as rivers, wells, springs etc.

Table 4.2. Priority for water access at water points, according to respondents

| Respondents' Views on Access to Shared Water Sources (for Humans and Livestock) | Female Responses and Site Locations (n= 6) | Male Responses and Site Locations (n=8) |
|---|---|---|
| **Women are given priority: water for household use is prioritised over water for livestock** | Kurikuri<br>Usually no competition because women fetch water early, before livestock arrive. Otherwise, women given priority.<br><br>Lengei<br>Women given priority because of other duties<br><br>Nkaroni<br>Women given priority | Nadungoro<br>Women given priority<br><br>Kurikuri<br>Women given priority: water collection timed so that women fetch water before animals come<br><br>Sesia<br>Water for households given priority<br><br>Lengei<br>Women given priority because of other duties; fences keep livestock away while women fetch water.<br><br>Nkaroni<br>Women always given priority |
| **Water access is on a first-come, first-served basis, with conditions** | Nadungoro<br>First come, first served, but women must wait if livestock arrive first | Kurikuri<br>First come, first served |
| **Livestock are prioritised** | Nadungoro<br>Livestock given priority, women wait | Nkaroni<br>Livestock get priority: women collecting water must step aside when livestock arrive |
| **Women watering livestock have priority over other women** | Sesia<br>Women watering livestock given priority; women with no livestock must go earlier or else wait<br>. | |
| **In times of water shortage, women receive a water ration before livestock are watered** | Sesia<br>Each woman receives one jerrycan of water before livestock are watered | |
| **Women are given priority if borehole fuel is limited** | | Lengei<br>Women get priority; livestock are denied access |

According to the findings, access to shared water sources is not a matter of competition between female and male users. Nor does livestock access necessarily mean male access. Only women in Sesia and Nadungoro felt that livestock have priority over women (i.e., over water for household use) at shared water sources. Even then, what they seem to be saying is that timing is what determines access, rather than being male or female, a point made clearer from the findings from Sesia, where women talk about women with livestock having priority 'if they reach the water source first', whilst 'other' women have to wait.

The explanations given by respondents are summarised in Table 4.3 below. They show men and women to share similar perspectives on the issue of access, with the exception of Sesia, a place where, as other findings show (see below), there is extreme water insecurity which may (or may not) account for this difference.

Table 4.3. Respondents' explanations for prioritisation of access to shared water sources

| Who/ What Gets Priority | Explanations Given by Female Respondents | Explanations Given by Male Respondents |
|---|---|---|
| **Women are given priority …** | Lengei<br>… so that the household has water and because livestock can wait or go further looking for water.<br><br>Nkaroni<br>… because they have other duties. | Kurikuri, Lengei<br>… so that they can go home and look after children.<br><br>Kurikuri<br>… because water is a basic (household) need, especially for young children.<br><br>Sesia, Lengei<br>… because many have come a long way and need to get home to look after children.<br><br>Nkaroni<br>… because livestock take a long time to drink and will delay the women if they go first.<br>. |
| **First come, first served …** | Nadungoro<br>… because both need water. | Kurikuri<br>… because everyone should be respected. |
| **Women with livestock are given priority …** | Sesia<br>… because livestock have to go to graze afterwards, whereas women 'are only going back home'. | |

### 4.1.3 Water resource management

Management of water sources is carried out at three levels:

a) At conservancy level through the WRUA committee
b) At village level through the elder's committee
c) At household level, where each household 'owns' its water source

Some measures have been adopted to control access to water sources between competing livestock and human water users. Water sources located close to human settlements are reserved for domestic use and access is restricted either through the use of agreed rules or through physical controls such as fencing. There is staggered access at shared water sources, which ensures that livestock are watered every alternate day. In situations where livestock and women need access to a shared water source at the same time, women are given priority.

Some water management roles are specifically allocated to men. These include digging of wells and pans, construction of fences, cleaning of wells and the control of livestock during watering. At the same time, men also dominate water management committees in the WRUAs. In Kurikuri, the women are responsible for the management of boreholes. In Nkaroni, each family owns its shallow well and is responsible for its management.

### 4.1.4 Roles and responsibilities for domestic water collection and management

There is full agreement in the findings from all sources that women have full responsibility for domestic water collection and management. However, this responsibility and burden comes with some control and power. The woman who owns the house controls the household water supply: she decides how much to collect, when and how to collect it, and how it will be used. She manages access to stored water. Even her

husband may be denied water if she thinks there is not enough available.

WOMEN AND HOUSEHOLD WATER COLLECTION

Women and children (especially girls) are responsible for collecting water for the household:

*Women and children—mostly girls—are responsible because men don't fetch water. (Female participant, women's non-group FGD, Lengei)*

Distance to the water source and hence the level of effort required does not change this arrangement:

*This [fetching water] is a role for the women—it doesn't matter whether the water is available at a nearby water source or not. (Male participant, men's FGD, Nkaroni)*

Women and girls have therefore evolved a system of co-dependence in managing household and water-related role:

*If you have girls, they will help you, but you will also need to help them. You can decide to collect firewood and the girls fetch water. (Female participant, women's group FGD, Lengei)*

However, in situations where girls are away at school, the mother is forced to bear this responsibility alone:

*We don't have girls to help us because they are in school or married. (Female participant, women's non-group FGD, Sesia)*

The absence of girls who are of an age to fetch water in a household (either because the children are still young, or the older girls have gone to school, have married or are out herding livestock) is a source of both emotional and physical stress for the women who must take responsibility for all roles related to fetching water:

*It is only during the school holiday that you sit happily because your children help you. (Female participant, women's group FGD, Lengei)*

There are certain instances when women are exempt from fetching water:

*I fetch water when I am able to but when I am sick or I have given birth other women help me. (Female respondent, household SSI, Lengei)*

Other instances are when a woman is elderly, when a woman is out herding cattle or when girls of school-going age come home for the holidays.

This was also well understood by the men:

*Every woman fetches water at this time [during normal periods] except for those who are not able to fetch, or they have given birth, or they are herding. (Male participant, men's FGD, Sesia)*

In the case of pregnant women, other women may help in fetching water:

*When you are pregnant other women within the family can help you to fetch water until the time of delivery. (Female respondent, household SSI, Nkaroni)*

However, some have to fetch water until the day they deliver, after which they get a short break to recuperate:

*I used to fetch water until the day I gave birth. (Female respondent, household SSI, Sesia)*.

During the period after childbirth in which a woman is recuperating, other women, either from within the same homestead or from neighbouring homesteads, not her husband, fetch water for her:

*It always changes, for instance, when a woman gives birth, other women within the boma can help her to fetch water for a certain period of time. (Female respondent, household SSI, Nkaroni)*

This came out more strongly among the Samburu communities in Sesia and Nkaroni than in any other of the communities where the study was undertaken.

Only two responses on collecting water mentioned boys and sons, whereas 13 mentioned girls and another five mentioned daughters being sent to fetch water. There are, however, exceptions where boys and men are also engaged in fetching water. In households where a woman does not have girl children, she may ask

her small boys to fetch water:

> *Those women who don't have girl children may send the small boys to fetch water for them. (Male participant, men's FGD, Lengei)*

Sons are also co-opted to fetch water when they have other errands to the water source:

> *It is only me and this small girl here, and sometimes, when my sons come here to bathe, they bring some water with them. (Female respondent, WSOUI, Nkaroni)*

In polygamous households, the norm is that every woman is responsible for her own household's water supply. However, it was mentioned that the co-wives sometimes support each other in ensuring the availability of water by sharing what is available or by fetching for each other:

> *Every woman has her house and it is her responsibility to ensure there is water. If one of us does not have water, then we share. (Female participant, women's group FGD, Sesia)*

In certain instances, it is agreed that one of the co-wives will support the other in her water duties in return for assistance in carrying out one of her other roles:

> *Every woman is responsible for her household water unless one of them is not around—she is probably grazing—when the other women (co-wives) at home fetch for her. (Female participant, women's non-group FGD, Nkaroni)*

In households where there are daughters-in-law, it was clear that each woman is responsible for ensuring that there is water in her house. However, there is also an understanding that, in certain cases, daughters-in-law assist their mothers-in-law by providing them with water:

> *Everybody fetches for herself but if the mother-in-law is very old then she is assisted. (Female participant, women's group FGD, Nadungoro)*

The water relationship between a daughter-in-law and her mother-in-law can also be in reciprocation for the mother-in-law's help in other duties:

> *The daughters-in-law all fetch water for the older women. They all give her 5-litre containers because she is left at home looking after the children. (Female participant, women's non-group FGD, Sesia)*

At the household level and in group discussions, it emerged that making decisions about who will collect water and how much should be collected for the household falls on the woman:

> *It is still a woman [who decides how much water to collect], because you are the one responsible for everybody in the house—be it a moran [young unmarried man], children or a husband, it is you who should know what they will feed on. (Female participant, women's group FGD, Sesia)*

Deciding how much water to collect is constrained by the woman's ability to transport the water. In most areas of Meibae (Sesia and Nkaroni), the ownership of a donkey was cited as a key determinant of the quantity of water that a woman can obtain:

> *And a jerrycan [of water] is not enough; you only bring it and it is finished within a day. So, if you need more water, then you use a donkey. (Female participant, women's group FGD, Sesia)*

> *It is a woman's duty to know how much water is to be collected because you may have children and morans and they all need to bathe. You can even fetch water using a donkey and go for another trip so that the water is enough. (Female participant, women's non-group FGD, Nkaroni)*

During certain cultural occasions (for instance, the circumcision of boys) the men are also involved in making decisions about how much water will be needed for certain ceremonies:

> *I, the woman, decide how often the domestic water is collected and how much, but during occasions like circumcision, men can say how much water is needed. (Female respondent, household SSI, Nkaroni)*

The ability to pay for water is also a factor that contributes to how much a woman can afford to collect at any time:

*As the mother, I have the responsibility of deciding how often domestic water is collected and how much, because I am the one who will provide the money. (Female respondent, household SSI, Lengei)*

However, as discussed below (see 4.1.6.: Payment for Water), the findings indicate that, in practice, men are involved in many households, for often it is men who 'give them (the women) money' to pay for household water. The responsibility for deciding how water will be used once it reaches the household still rests with the woman:

*It is still a woman's work to decide how much water is used so as to limit [it] when it is not available. (Female participant, women's group FGD, Kurikuri)*

The woman's control over water in the household is absolute, to the extent that she can deny her husband water, even when it is available, in order to effect better management. This was mentioned by the men during one of the discussions:

*The one who collects the water [the woman] decides how the water will be used and when she says that there is no water, even if it is there, then even the husband has no say. (Male participant, men's FGD, Nkaroni)*

The context of this instance (where a woman can deny water to her husband) is closely related to the woman's role in managing water within the household:

*The woman decides how household water is used because men bathe in the river when they take the animals to water. The only time they can use water at home is when they want to dip livestock. (Female participant, women's non-group FGD, Lengei)*

*It is a woman who decides how the water is used and sometimes the husband because, [if] you bring water home and he says that the goats have to be sprayed, you just have to give away the water even though you are the one who fetches it. (Female participant, women's group FGD, Sesia)*

Control over household water use is also related to women's attempts to manage the amount of effort that goes into fetching water. Disciplined water use saves women energy, which may then be used for other household duties:

*I control it [water] because I am the one who fetches the water, so I have to be careful so as not to overwork myself. (Female respondent, household SSI, Nadungoro)*

In addition, water is co-managed between a woman and her children:

*When it [water] is brought home, you guide your children on how to use the water. They ask you 'Mum, how much water do you put in the* sufuria *[cooking pot]?' and you tell them. (Female participant, women's group FGD, Lengei)*

In instances where a woman must pay for water, the role of household water management is closely tied to her attempt to control the cost of buying water for her household:

*It is me who controls and decides how much water is used because the water is bought and I have to be economical in its use. (Female respondent, household SSI, Lengei)*

The conflict between a woman's water management role and her other responsibilities was evident, especially in situations where a woman is also required to leave the homestead to look after the animals (essentially a man's responsibility, except in times of drought when the men are away and the women care for the small livestock, the young of cattle and the sick animals):

*You can fetch water then go to herd animals and when you come back, the water is finished. (Female respondent, household SSI, Sesia)*

The role of women in taking care of livestock also affects how stored water is managed:

*I am the one [who controls stored water] but in the event that you go to look after livestock I can control [must instruct] my children not to misuse water since I will not be able to go afterwards.*

*(Female respondent, household SSI, Lengei)*

During stress periods or when a woman does not have water for her household, other women can exercise their control over their household water and re-allocate some of it to share with the woman in need. The woman who has received assistance will in turn 'pay it back' once she has collected water, in a transactional relationship where the commodity of exchange is water. This was mentioned by the men and demonstrates the fact that women's role in household water management is quite gendered, to the extent that a man will not see the need to support his wife during stress periods but would rather she address the shortage by appealing to the philanthropy of her women neighbours and friends:

> *The owner of the house is responsible for deciding how household water is used. And in cases where they don't have water, they borrow from each other and sometimes even pay [it] back. (Male participant, men's FGD, Sesia)*

In the case of water that has been stored within the household, the narrative on who has control seems to indicate that, whereas decision-making about the use of stored water rests with the woman, access to stored water can be more liberal. All household members—the woman, children and, in some instances, the husband—have access:

> *Everyone in the household has access to the stored water, including the children and my husband. (Female respondent, household SSI, Lengei)*

However, when it comes to control of water stored in the house, some of the women revealed an internal struggle over granting children access to stored water while at the same time managing the ensuing risk of contamination and wastage:

> *I control it [water] because I am the one who fetches the water, so I have to be careful not to over-work myself. (Female respondent, household SSI, Nadungoro)*

> *I am the only one who can access it [ stored water] because the children introduce dirt into it [water]. (Female respondent, household SSI, Lengei)*

As with decision-making over water collection, older (female) children share control and co-manage the stored water.

### 4.1.5 Water storage

Household water storage was explored with 68 respondents (58 female, 10 male) through the household-level consultations, key informant interviews and water source observation interviews. The study found that significant variation exists across the study sites in terms of the availability of water storage facilities. In over half of the households visited, women have only the container they use for water collection (a 20-litre jerrycan) to store water. Women who are members of groups indicated that they have better access to finances to invest in household storage facilities. A shortage of water available for collection is one of the reasons women in some places do not invest in storage facilities. Insufficient disposable income may be another. **Across the study locations, whether or not they have the means to store water, women are in no doubt about the benefits of water storage: not having to collect water every single day saves precious time and energy.** The findings suggest that even though this saved time and energy is most likely spent on other household tasks, it is valued as a 'rest'.

In parts of Lekurukki, most of the households visited have water storage containers and it was reported that most households have separate water storage tanks, varying in capacity between 100 and 210 litres, which they obtained two to three years ago. In Meibae and parts of Kurikuri, most of the households do not have separate storage facilities. They store their water in the same jerrycans used to fetch water:

> *I just leave it [the water] in the jerrycan that I have used to fetch water with—a jerrycan is the largest container I have. (Female respondent, household SSI, Sesia)*

In addition to household water storage facilities, some communities have communal water storage tanks. These are used to store water delivered by water bowsers and are shared between several households:

*Some people have water tanks; we also have community tanks that the water bowsers fill for us during the drought period. (Female respondent, household SSI, Kurikuri)*

In instances where women do not own household water storage containers, they borrow from friends. This emerged from interviews with women in both the Lekurukki and the Meibae areas:

*I use the containers that I have but, in case of shortage, I can still borrow from my neighbour if she has many. (Female respondent, household SSI, Sesia)*

According to female respondents, one of the benefits of having water storage is that a woman gets time to rest from the task of collecting water:

*It helps me a lot because when they [the storage containers] are full I can rest for some days without having to fetch water. (Female respondent, household SSI, Nadungoro)*

In addition, time saved from fetching water can be used for other activities such as taking care of livestock:

*It helps me because, if I have enough water, I have time to do my other chores, like taking care of livestock. (Female respondent, household SSI, Lengei)*

Having water stored at home comes with health benefits because it is stored hygienically and it is possible to control for contamination. The water is also easy to reach during an emergency:

*The other advantage of having this water at home is for health purposes. It is healthy to have this water stored in the home. It is safe from contamination, always available and can be used for emergencies. It will also reduce diseases. (Female respondent, household SSI, Kurikuri)*

In Meibae, the women who have storage in their homes were quite specific that storing water in the house makes it possible for them to fulfil their domestic chores:

*It is helping us because we cook, we wash our clothes with it and we bathe with the same water, so it is helpful to me and my kids. Even the small animals use that water. (Female respondent, household SSI, Sesia)*

*If I had stored water, I would not go for water every day and I would have time for other chores like collecting firewood. I would also wash clothes, cook with it and give small animals at home. (Female respondent, WSOUI, Nkaroni)*

Women without water storage facilities identified three constraints:

a) Water shortage at source: too little water available to make collection for storage possible (Kurikuri, Sesia).

b) Distance: The water source is too far away (especially during drought) to make it practical to fetch water to store (Nkaroni, Kurikuri).

c) Resources: women do not have the means to store water due to their lack of containers (Sesia).

**WHAT WOMEN SAID ABOUT LACK OF WATER STORAGE**

*There is little water anyway so, however much you want the water, it's not available. (Female respondent, household SSI, Kurikuri)*

*It is so far that they can't fetch more than two jerrycans a day. (Female respondent, household SSI, Kurikuri)*

*I just leave it [the water] in the jerrycan that I have used to fetch water with—a jerrycan is the largest container I have … I don't have a bigger container to store water in. (Female respondents, WSOUI, Sesia)*

A male interviewed in a household where there is water storage reflected that it means:

*My wife gets some time to rest. When I am absent she is overloaded so the stored water helps a lot to save time for other tasks.*

Speaking in a community with little storage, this man noted:

*Water storage is good because fetching water every other time wastes a lot of time. But, if they*

*have stored water, they (women) have time to do other house chores. (Male respondent, KII, Lengei)*

Findings from men in Nkaroni highlight just how disempowering the lack of water storage can be, not just for individual women and their families but for whole communities. For here, apparently:

*The water bowser brings water for us, but it goes back with it because there is nowhere people can put the water. (Male respondent, KII, Nkaroni)*

These findings suggest there may be value in exploring water storage interventions as a means of improving household water security for women in pastoralist communities. In addition, interventions that improve women's capacity to invest in household water storage could contribute to increased water security.

### 4.1.6 Payment for water

The study looked into payment for water in some depth as the cost of water is often a factor in water insecurity. The gender dimension was explored through questions about female and male income, and expenditure decisions. Responses were generated and triangulated through the male and female focus group discussions, household level interviews with women, key informant interviews with women and men, and water source observation and user interviews with men and women.

The findings show that a wide variation exists between the study communities in terms of (a) whether payment is an option or a requirement and (b) whether water is paid for regularly, all year round, or only during times of water shortage. Many of the women interviewed indicated that they do pay for water at a borehole or pay for water to be delivered when they have funds or have no other options. Across all the study locations, women appear to be the primary decision-makers when it comes to paying for the household to obtain water. The extent to which they are the sole decision-makers appears to depend on whether or not they have their own source of income or if they need their husband's cooperation and assistance to, for example, sell livestock to obtain the money required. There was no evidence that indicated that gaining male cooperation is hard.

The research team found that exact costs related to buying water were difficult to determine because respondents did not share the same concepts about water and payment for water. In some localities, such as Sesia and Nadungoro, only transportation may be paid for; water itself is considered a free resource. Thus here, even when payment is incurred, according to significant numbers of male and female respondents, they do not pay for water.

*We have never paid for water. However, we pay for motorbikes when they bring water for us. (Female respondent, WSOUI, Nadungoro)*

Based on the figures that were provided, the cost of a 20-litre jerrycan of water ranges from 2.50–5 Kenya Shillings (KeS) in Kurikuri, Nadungoro and Lengei, to KeS 10 in Sesia and KeS 40 in some parts of Kurikuri. In Nkaroni, most respondents indicated that they pay for water transportation but a figure was not given. In-kind payments are also made—for instance, women in Sesia contribute money and buy a chicken for the water bowser crew when they are supplied with water. A summary of explanations on what it costs to obtain water is shown in Table 4.4 below.

Table 4.4. Payment by households to obtain water: range of findings from FGDs and individual consultations

| Findings | Kurikuri<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=28<br>Males n=7 | Nadungoro<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=34<br>Males n=0 | Lengei<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=26<br>Males n=9 | Nkaroni<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=21<br>Males n=8 | Sesia<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=22<br>Males n=13 |
|---|---|---|---|---|---|
| **It is always necessary to pay for water for the household (or its transportation)** | - Yes; water costs KeS 40/ jerrycan (Female respondent, women's non-group FGD)<br>- Water costs KeS 2.50–5 (Female participant, women's group FGD) | | - Yes; three jerrycans per day cost KeS 5/ jerrycan (Female respondent, household SSI)<br>- Yes; borehole water costs KeS 10/ jerrycan to cover costs of borehole (maintenance, watchmen, pump attendants and fuel); payment also necessary for water from water kiosks in town (Male respondent, KII) | | |
| **Payment for water or water transportation is sometimes necessary, sometimes optional, or some households pay but not all** | | - Payment for boda boda (motorcycle) to transport water (Female participant, women's group FGD)<br>- No payment for water; pay for motorbikes to bring water (Female respondent, WSOUI)<br>- No payment for water; sometimes pay for transport of water (Female respondent, WSOUI)<br>- Community pays people to work at Tassia spring | - Payment for water to be brought from borehole (to avoid climbing steep slope) (Female participant, women's non-group FGD)<br>- Payment for water is only necessary during drought (Male participant, men's FGD) | - Payment for boda boda to transport water necessary when feeling unwell (Female respondent, household SSI)<br>- No payment for water; payment for jerrycans to be transported from river (Female respondent, KII) | - Payment is necessary during drought (Female participant, women's non-group FGD)<br>- No payment for water but necessary to pay when cars ferry water (Female participant, women's group FGD)<br>- Buy water at Mabati at KeS 10/ jerrycan if the tank has water (Female respondent, KII)<br>- Payment necessary for water from water kiosks |

| Findings | Kurikuri<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=28<br>Males n=7 | Nadungoro<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=34<br>Males n=0 | Lengei<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=26<br>Males n=9 | Nkaroni<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=21<br>Males n=8 | Sesia<br>Data Collected from HH SSI and Triangulated in FGD<br>Females n=22<br>Males n=13 |
|---|---|---|---|---|---|
| | | (Male respondent, KII) | | | and boreholes but not for water from wells and rivers (Male respondent, KII) |
| **Households never pay to obtain water** | | Never pay (Female respondent, household SSI) | | | - Household never pays; others pay for motorbikes to bring water (Female respondent, household SSI)<br>- No payment at all (Male participant, men's FGD)<br>- Don't pay; no one selling water and nowhere to buy it from (Male participant, men's FGD) |

Making decisions about paying for water

When securing water for the household involves payment, women still remain responsible and are generally perceived to be the ones in control of decision-making. As a woman from Sesia explained:

> *Payment for water is purely a decision for the woman and the man has no contribution (in the decision) (Female respondent, KII).*

Though, in practice, the extent of their agency may vary at household level, findings from male and female respondents evidence the apparent autonomy women, or, at least, some women, have when it comes to making these decisions. For example, a respondent in Lengei noted:

> *When we don't feel like mounting that steep slope, we buy water from the borehole at Ltinka. (Female participant, women's non-group FGD)*

Women are responsible for ensuring water is available in the home but, unless they have a source of independent income, they depend on male cooperation to provide the money or means to pay for water.

It was also evident that, in certain instances, the men make the final decisions regarding payment for water. One of the reasons given for this is because the man is the one who earns the income through the sale of livestock:

> *The husband is the one who has the final decision [on money to be spent for water] because he can decide not to give the money to pay for water. (Female respondent, household SSI, Lengei)*

Men's involvement in the expenditure of household income to provide water is in part connected to the fact that, in these communities, most of the household income is generated by selling livestock, a role which is the preserve of men. As noted by one woman from Lengei:

> *The final decision [to spend household income on water] comes from the husband because he is the one who sells the livestock. (Female respondent, household SSI, Lengei)*

There are instances of cooperation between men and women. In Lengei, both the men and the women cited cooperation between men and women on matters related to paying for water. This was evident in several interviews, for example:

> *Both husband and wife have to decide to pay for water since there is no water if you don't pay for it. (Female respondent, household SSI, Lengei)*

Factors influencing a household's decision to pay for water

If a woman has the means to obtain water through payment and it is an option rather than a necessity, three further factors appear to influence her decision to spend money on water provision: (a) her household's distance from the water source; (b) her personal energy levels that day; and (c) the number and type of other tasks that she needs to carry out.

MONEY: THE PRIMARY FACTOR

*Having money is what decides whether the family pays for water or not … If you don't have money to pay for water, then you are dead because there is nothing you can do without water. (Female participants, women's group FGD, Lengei)*

A woman's workload in the household can also limit her ability to fetch water. In such situations, a woman may be held up by other activities or may be exhausted after carrying out other duties and is unable to carry out water collection duties:

> *Being tired also forces you to buy or pay for water. (Female participant, women's non-group FGD, Kurikuri)*

In other instances, a woman who lacks access to a means of transport, such as a donkey, is forced to pay for water to be delivered to her:

> *If maybe you don't have a donkey, or sometimes you are committed to other business, then you will have to buy water and then you pay immediately or monthly, depending on the seller. (Female participant, women's FGD, Lengei)*

When the water source is far away, women have no option but to pay for water:

*The distance is too far to access water, so we prefer to pay so that our children can have water to drink and [we have water to] cook food with. (Female participant, women's non-group FGD, Nkaroni)*

The advantages of paying for water

A key advantage noted by women in Meibae is the fact that paying for water reduces the effort required from women to obtain water for domestic use:

*Also, when I have money to pay the vehicles coming from the market, I will not be tired by carrying water. (Female respondent, household SSI, Lengei)*

The time saved through paying for water can be spent on recreation and other household chores:

*It [paying for water] is of help because I can rest for several days without fetching water—I can also do my laundry. (Female respondent, household SSI, Lengei)*

The water obtained from water bowsers or vendors is perceived to be safe or 'clean':

*… I think the water which is being sold must be very clean. (Female respondent, household SSI, Nkaroni)*

The disadvantages of paying for water

Generally, the communities covered in the study perceived little disadvantage in paying for water.

One of the disadvantages raised is the high level of expenditure on water. This creates some tension when some women are not able to explain the relatively high expenditure on water to their husbands:

*I use a lot of money paying for water and I am not able to explain this to my husband. (Female respondent, household SSI, Lengei)*

On the other hand, a woman's lack of sufficient money to meet household water needs can also be a disadvantage, especially in communities where water must be bought:

*Lack of money to buy water can be the main disadvantage for those who buy water. (Female respondent, household SSI, Nkaroni)*

Who gets paid for water

Payment for water is made to:

- Small-scale water service providers who own storage facilities from which they distribute water:
  *We pay it to the owner of tanks here in Mabati. (Female participant, household SSI, Sesia)*
- Water vendors and boda boda riders who transport water from distant sources and receive payment for each delivery:
  *We don't buy water but we pay the boda bodas to ferry water to our homes. (Female participant, household SSI, Nkaroni)*
- the water committee or water operator running the community supply:
  *We give the money to a person who has the keys to the water tap. The person is a member of a committee which controls and runs the borehole. (Female participant, household SSI, Lengei)*

  *The money that is collected is used to pay for costs such as guards at the water facility or to buy fuel: The water belongs to the community. Even the money we collect belongs to the community because we pay the watchmen and buy fuel with the money. (Male participant, KII, Lengei)*

Sources of money to pay for water

In most of the pastoralist households interviewed during the study, a key source of money used to pay for water or water transportation is the sale of livestock:

*For those who may pay boda bodas to bring them water, their source of income is the sale of*

*livestock, and a few have businesses. (Male respondent, KII, Nkaroni)*

A proportion of the income obtained from the sale of livestock is allocated to women who then spend part of it to pay for water:

> *When my husband sells the livestock, he brings the money that I will use to pay for water—because none of us is employed so we have to sell livestock to get money to buy water. (Female respondent, household SSI, Lengei)*

Another source of income, especially for the women, is small-scale income-generating activities, which include brewing local beers, sale of foodstuff (eggs, hens), operating shops, making beadwork and selling charcoal:

> *A woman may have chickens, brew local brews, join women's groups [which can] acquire loans to start businesses, and do beadwork. Sometimes we sell our livestock to buy water but those people who have small business enterprises use that income to pay for water. (Female respondent, KII, Sesia).*

In this respect, the women in Meibae were the most entrepreneurial.

Women who are members of local women's groups have access to income in the form of loans or the proceeds of revolving funds savings schemes (known locally as 'merry-go-rounds'), and the money is used to pay for water:

> *We also have merry-go-round savings, which helps since the money you get can also be used to pay for water. (Female respondent, KII, Sesia)*

Such income is sometimes used to invest in water storage tanks. At other times, women borrow money to buy water from friends and neighbours:

> *Sometimes you may lack money to pay the person who brings water for you, so you will just take a loan from a neighbour and then repay it once you get money. (Female respondent, household SSI, Sesia)*

<u>Household income generation and control</u>

Household income is primarily generated though the sale of livestock, a male preserve. The women are involved in a myriad of small businesses ranging from the sale of vegetables to the brewing of traditional beer.

In Lekurukki, the men are involved in diverse economic activities including the sale of livestock, boda boda transport businesses and casual labour as herdsmen or in the lodges, as watchmen. A unique income-generating activity for the men in Kurikuri is sand harvesting. In Meibae, the major household income for communities in the study is the sale of livestock which is largely the preserve of the men:

> *We men look after our animals and sell them if we need money or when there is no food at home—we sell a goat or sheep and use the money to buy food. (Male participant, men's FGD, Nkaroni)*

The women in Lekurukki are involved in beadwork and small business enterprises. The women in Kurikuri also obtain some income from sales of vegetables harvested from a greenhouse project and from charcoal burning:

> *For us, we do beadwork as Naramat Group. We also sell groceries, when it's harvest time, from the greenhouse. (Female participant, women's group FGD, Kurikuri)*

In Meibae the women are involved in more diverse income-generating activities, including the sale of small livestock, tobacco, sugar, fabric, beads, tea leaves, credit cards and snuff. The organised women's groups carry out joint small business and saving schemes:

> *We run around doing small business. We sell chickens, shukas and beads. We have groups and we do merry-go-round and give each other money. (Female participant, women's group FGD, Lengei)*

In addition, some of the women brew and sell traditional alcoholic drinks.

Control over household income varies. Control may be held by the person who generates the income:

*The person who has generated the income is the one who controls it. The income generated by women is controlled by women and that generated by men is controlled by men. (Female participant, women's non-group FGD, Lengei)*

Alternatively, the man controls all household income:

*Men control income. In the case where the man is not there, and the woman has elder sons, the sons guide and control how to use the income, and when she doesn't have sons she does it herself. (Male participant, men's FGD, Sesia)*

A significant observation is that income that has been generated by women may be subject to control by men (both husbands and sons) but income generated by men is only controlled by the men.

Seasonality of household income

The women's group in Kurikuri is not able to sell their vegetables during good seasons when community members have alternative food supplies:

*They [opportunities to generate income] vary because during good seasons sales become rare because milk (and therefore food) is available. (Female participant, women's group FGD, Kurikuri)*

This same group also faces a limitation during the dry season when it is difficult to obtain water for the greenhouse.

Another wet-season income-generating opportunity for women is the harvesting of gum or resin from trees, which is then sold. This gum is not available during the dry season:

*It changes [income generation] because we collect gum only during the rainy season. During the drought, the gum doesn't grow on trees. (Female participant, women's non-group FGD, Sesia)*

As a major source of household income is the sale of livestock, livestock prices affect household income. The market value of livestock tends to go down during the dry season, mainly because the animals lose weight. In addition, during extreme drought, the pastoralists are operating in a collapsed market where livestock prices are low:

*During drought, the animals become very thin so a goat that you could have sold for KeS 5,000 loses weight and you can only sell it for KeS 3,000. Sometimes the drought can be so severe that you sell a goat at a lower rate of KeS 1,000 or less. (Male participant, men's FGD, Nkaroni)*

This affects the ability of households to earn an income and reduces the disposable income available for households to spend on purchases from other small business owners.

The dynamics of livestock markets for pastoralist communities and how this affects the entire small business economy across wet and dry seasons was clearly explained by one of the women:

*Drought affects most of these small businesses because it becomes rare to get money since the livestock will not have a good market. When it is normal season, animals will gain value, hence, money becomes available. (Female participant, women's non-group, Lengei)*

During the dry season, most pastoralists migrate with their cattle in search of pasture, forcing them to stop their other income-generating activities:

*During drought, when people migrate to the fields, your business dies and you also become so caught up with livestock that you can't run the business. The business only picks up again when people are back home during a good or normal period. (Female participant, women's non-group FGD, Nkaroni)*

This movement of people means there is no market for goods and the situation only improves once the drought season is over:

*During a good period, most people come back home with the livestock so, if you are doing business, you will do well. But during drought, people are not home. Everybody is running up and down and the only people left at home are old grandmothers. Business dies during drought and picks up again during a normal period. (Female participant, women's group FGD, Sesia)*

### 4.2 Gender and Power Dynamics during Normal Periods and Periods of Shock

- How do the roles of men and women change during normal periods and shock periods?
- What constraints do women (and men) face during normal periods and shock periods?
- How does the political economy of water affect household water security during normal periods and shock periods?

#### 4.2.1 Changes in roles and responsibilities of men and women during normal periods and shock periods

Household water collection and management

Women and children—especially girls—are responsible for collecting water for the household:

> *Women and children—mostly girls—are responsible because men don't fetch water. (Female participant, women's non-group FGD, Lengei).*

The responsibility of women and children (particularly girls) for collecting water for the household does not change, regardless of distance to the water source and the associated level of effort required to fetch water.

In some unique situations, for instance, during period of severe water stress, men may take up the task of fetching water on behalf of women:

> *During a normal time, the task of fetching water is purely left for the woman. The husband is not involved in deciding who fetches water. During drought, the husband manages everything at home, including fetching household water. (Male participant, men's FGD, Sesia)*

There are situations where the man will help transport water because he owns a means of transport:

> *In our community, it is women who fetch water unless the man has a boda boda. (Male participant, men's FGD, Kurikuri)*

Water for livestock

In Lekurukki, livestock watering is primarily a responsibility for the men and morans*:*

> *It is the responsibility of the morans [to water livestock]. We as women are not involved because we have morans. (Female respondent, household SSI, Kurikuri)*

However, women take responsibility during those periods when the men are away from the homestead, either because they have relocated in search of casual labour in town:

> *I am responsible [for watering livestock] because my husband is working far away from home. (Female respondent, household SSI, Nadungoro)*

or because they are away with the cattle searching for pasture. This position was also shared by the men during the discussions:

> *It is my duty [to water livestock] but if am absent my wife will be forced to do it. (Male respondent, household SSI, Kurikuri)*

In Sesia (Meibae), it emerged that the responsibility for watering livestock increasingly falls on the women, in contrast to the situation in Lekurukki:

> *I am the one who is responsible for ensuring that the livestock have enough water to drink—I believe that is a woman's responsibility. (Female respondent, household SSI, Sesia)*

This adds to the woman's other domestic responsibilities.

This is especially demanding where the woman in question does not have a means of transporting the water:

> *I am the one who is responsible for fetching water for my livestock and making sure that they have adequate water—I don't have a donkey, so I am the one to carry water for my livestock. (Female respondent, household SSI, Sesia)*

Generally, the watering of small ruminants and calves left in the homestead when the men move with the cattle in search of pasture is the responsibility of women:

> *It is my work to ensure that the household's livestock, like calves and kids, get water. As for the other livestock, it is men who know how they get their water from the water sources. (Female respondent, household SSI, Sesia)*

In Lengei (Meibae) the women made the distinction that it is the man's responsibility to water the livestock which are at pasture but the woman is responsible for the livestock that remain in the homestead*:*

> *The livestock which are at home are the responsibility of the women but the livestock in the fields are the husband's responsibility. (Female respondent, household SSI, Lengei)*

This was further clarified by an elderly woman who indicated that, in a homestead, it is mostly the young women who are responsible for watering the small livestock—for instance, daughters-in-law:

> *Young people are the ones to make sure that the household's livestock have enough water—my daughter-in-law used to fetch water for our small animals. (Female respondent, household SSI, Nkaroni)*

However, it also emerged that the men accomplish their task of watering livestock by having the women collect water for certain livestock:

> *It is the responsibility of the husband to ensure that the livestock have the water they need, including the livestock that are at home—the husband will order the wife to fetch water for those animals that are unable to go to the river to drink water. (Female respondent, household SSI, Lengei)*

In one instance, a woman reported that she must buy water for the livestock to meet her obligation:

> *It is my work—I pay KeS 100 for the livestock to obtain water. (Female respondent, household SSI, Lengei)*

In a differing opinion, one of the women felt that the watering of livestock is a collective responsibility and each member of the family is required to play their part:

> *It is the responsibility of all members of the family (children, mother, father); it is a collective duty—it depends on who is available. (Female respondent, household SSI, Nadungoro)*

### 4.2.2 Additional constraints during normal periods and shock periods

Women face various constraints related to water access during both normal and shock periods. These concern access to water sources, the workload of water-related tasks, increased reliance on cash and donkeys to obtain water and reduced support from children in water collection. In certain instances, there is an increased incidence of domestic violence. Men suffer from similar constraints, albeit to a different degree.

<u>Poor access to water sources</u>

A major constraint faced by women is poor access to water sources. During periods of drought, women must walk longer distances to find water. In addition, where communities depend on hand-dug traditional wells, it is only possible to obtain water by increasing the well depth considerably. Poor access to water is closely tied to an increase in women's workload related to caring for livestock. A key constraining factor for women is the lack of a means of transport, especially when women have to fetch water for the small animals left in the homestead.

WHAT WOMEN SAID ABOUT ACCESS TO WATER DURING DROUGHT

*During the rainy season, we don't struggle to get water from far distances whereas, during the drought season, we go far to collect water for the household and for our small livestock. (Female participant, women's group FGD, Nkaroni)*

*The water shortage becomes really severe and, to get water from the wells, three people [usually men] have to get inside to bring water to the surface. (Female participant, women's non-group FGD, Kurikuri)*

*The wife collects water but the workload increases because you have small animals that need water, so you have to collect more water compared to normal times. (Female participant, women's non-group FGD, Nadungoro)*

*During drought, you need a lot of water because everybody and everything needs water, be it small animals, a sick goat or people; and maybe you don't have a donkey and you can't fetch all that water. (Female participant, women's non-group FGD, Sesia)*

Increased workload for men and women

Periods of water stress force men to support the women in ensuring access to enough water to meet households' basic requirements. This view was dominant among men from Meibae (and was also expressed by one woman).

> *During a good period, women are responsible for who fetches water and when it is drought period, the workload for [collecting] water is a lot and men come in to help fetch water and still take care of livestock. (Male participant, men's FGD, Sesia)*

Some respondents felt that men shoulder a heavy burden in ensuring that water is available to meet all the needs of the household and of livestock:

> *So, everything that requires water depends on us men. (Male participant, men's FGD, Nkaroni)*

In contrast, most women mentioned that only they are responsible for ensuring water security for their households during drought periods:

> *It is only me who fetches water during the drought period … During a good year, we all fetch water because it is near. I go to other tasks and the children go to fetch water. (female respondent, WSOUI, Sesia)*

The role of children in helping women collecting water is reduced during drought periods because of the increased distances involved:

> *When water is near, they [children] can go but during drought, when water is far away, they cannot go, so I am the one who goes. (Female respondent, WSOUI, Nkaroni)*

This significantly reduces the support that children would normally provide and at the same time increases a woman's workload related to water. The view that children cannot help to fetch water during the drought season was also supported by the men:

> *Yes, it changes ... when it's drought, it is only a woman who can fetch water since children are not capable of fetching water. (Male participant, men's FGD, Kurikuri)*

During times of shock, men are forced to travel long distances with livestock in search of water:

> *The water becomes so far for livestock … (Male participant, men's FGD, Kurikuri)*

This view was also reported by the women:

> *They [men] have to take livestock long distances looking for water … (Female participant, women's group FGD, Kurikuri)*

There is an increase in men's workload in water-related tasks. Men are forced to deepen existing shallow or

open wells to make water available:

> *They [men] face problems only during drought because, for instance, when there is no water they have to dig really deep wells to get water. (Female participant, women's group FGD, Sesia)*

They must also excavate existing water pans:

> *Digging ponds is not an easy job since it requires a lot of energy. Three men are required to be in the pond so that they can supply water to their animals. (Male participant, men's FGD, Lengei)*

Water has to be lifted manually from the deep wells and poured into watering troughs for the cattle. At times, the wells are quite deep, requiring three to five men standing at different depths of the well to lift the water out:

> *During drought, we dig wells that will require five people to bring the water to the surface—so you dig like a machine. (Male participant, men's FGD, Nkaroni)*

Reliance on cash

In times of drought, there is increased reliance on cash, which is already in short supply:

> *… this water here that we buy when we don't have enough money to buy it. (female participant, women's group FGD, Lengei*)

The reduced availability of water and longer distances to water sources force communities to depend on alternative means of obtaining or transporting water, such as paying for boda bodas and making use of donkeys:

> *Again, these sources are seasonal, so they can be dry, so we have to use donkeys. (Male participant, men's FGD, Nkaroni)*

Gender-based violence

In certain instances, there is gender-based violence related to water stress, especially when the man feels that his needs are not met:

> *And even when your husband comes home and he doesn't get water when he asks, he beats you up. (Female participant, women's non-group, Nkaroni)*

Inability to meet household water needs

Certain problems, such as fatigue, illness and encounters with wildlife during water-collecting errands, particularly affect women and their ability to collect water.

Women experience increased fatigue when taking care of livestock. One of the most challenging tasks women undertake is looking after the livestock within the homestead. This causes physical exhaustion and limits the opportunities available to women for making sure that they have adequate water in the household:

> *The state of my body [is a challenge] because I don't collect water when I am tired, especially after looking after my livestock. (Female respondent, household SSI, Nadungoro)*

A major challenge that affects households is when women are sick and thus unable to fetch water. This problem was mentioned in Nadungoro and appeared in all the responses from the women in Nkaroni:

> *When I become get sick I will not be able to collect enough water for my family. (Female respondent, household SSI, Nkaroni)*

Similarly, the sickness of other family members affects the ability of women to carry out their tasks, including fetching water:

> *When I have to travel far places, when not feeling well, when looking after the animals and when I have a child who is sick—during these times it becomes hard to get time to fetch water. (Female respondent, household SSI, Lengei)*

Proximity to forest reserves and wildlife conservancies leads to an increased probability of encounters

between humans and wildlife, especially elephants, and thus a heightened risk of human-wildlife conflict at watering points. In Nadungoro, Kurikuri and Sesia, chance encounters with wildlife pose a risk to women when fetching water for household use:

> *The presence of local wild animals hinders us from getting water. (Female respondent, household SSI, Kurikuri)*

In communities where water must be bought or paid for, lack of money is a major challenge for women in trying to ensure that they have enough water for their household needs. This was especially evident in Lengei (Meibae):

> *Sometimes we might end up not having enough money to buy water that is required in the house. (Female respondent, household SSI, Lengei)*

A lack of water storage containers affects a household during drought because they cannot keep enough water to meet their increased needs and to avoid frequent trips to fetch water from the now-distant water sources:

> *Sometimes we might not have enough jerrycans to store water, especially during the drought season because we usually require a lot of water in the dry season. (Female respondent, household SSI, Lengei)*

Emotional stress

During periods of drought there is an increase in emotional strain on both men and women. This was expressed both by women and by men, who are now forced to collect water for domestic use and ensure animals are watered:

> *When it is drought period, the problems are hot, such that we men must collect water for home use. Men have to use any means possible to ensure that the small animals at home have water to drink. (male participant, men's FGD, Nkaroni)*

It is during such seasons that the strain in fetching water is felt by both men and women in equal measure:

> *No one is better off at such a time, we all struggle in fetching water and watering the livestock. (female participant, women's non-group FGD, Sesia)*

THE EMOTIONAL BURDEN OF DROUGHT

FOR WOMEN …

> *Problems are really hot (*keirewua nkop*). A woman is most in trouble. (Female participant, women's non-group FGD, Nadungoro)*

… AND FOR MEN

Men undergo emotional strain as they watch their women and children, and their livestock, suffer from lack of water:

> *Men also become unsettled when they see their children yearning for water but they cannot get [any water]. (Male participant, men's FGD, Sesia)*

> *They [men] face difficulties when it comes to their livestock and a man pains so much when livestock don't find water to drink. They will go looking for water wherever it is. (Female participant, women's group FGD, Lengei)*

### 4.2.3 Coping capacity

Several factors contribute to an increased capacity for households to cope with drought periods. These include proximity to water sources or access to alternative water sources, availability of money to pay for water, availability of household water storage, access to a means of transportation, favourable household age characteristics and favourable herd size. These are further explained below.

Households with proximity to a reliable water source are more water secure because they exert less effort in accessing and transporting water:

> *Those who live near a water source are better off than those who live far. (Female participant, women's non-group FGD, Nadungoro)*

Unlike households who live far from the water source and therefore cannot send children to collect water

during times of drought, households living near water sources can send their children to fetch water:

*Those household near rivers also cope better to the extent that even young kids go to the river. (Male participant, men's FGD, Sesia)*

In areas with multiple or alternative sources of water, families also cope better.

Access to the financial resources required to pay for water or water-related services increases a household's absorptive (coping) capacity during drought periods. Such households use the money that is available to buy water:

*Those with money cope because they can buy water. If you don't have money and you are not near the water source, then it is useless. (Female participant, women's group FGD, Lengei)*

Money also pays for transportation costs:

*If you have money you can pay a motorbike to carry water. (Female participant, women's non-group FGD, Nadungoro)*

and for investment in additional water storage:

*They are better off because they can afford to buy big drums to store water. They can also pay boda bodas to bring water for them. (Female participant, women's group, Nadungoro)*

Households with a member working outside the home manage better because they have diversified sources of income. The additional income can be used to pay for water or transportation.

*Those who are also working cope better. (Female participant, women's non-group FGD, Kurikuri)*

Households with more storage can go for longer periods during drought without having to fetch water:

*People with big storage tanks [cope better]. (Male participant, men's FGD, Kurikuri)*

A household's ownership of a means of transportation is evidently a strong coping mechanism for ensuring water security during drought periods:

*Everyone is equal apart from when you have a boda boda. (Female participant, women's group FGD, Nadungoro)*

This is because such a household can transport water from distant sources and in large quantities. In Meibae, most of the community members rely on animals to transport water.

Donkeys are so important for transporting water that those who do not own donkeys still need to access one by, for example, borrowing from neighbours:

*You are better off if you have a donkey and those without donkeys borrow from us. (Female participant, women's group FGD, Sesia)*

A household with an iron sheet roof can harvest rainwater during the wet season. Such a household is able store some of the water for use during drought periods:

*They are better off because they have water catchment techniques and they have storage tanks. (Female participant, women's group, Kurikuri)*

Rainwater harvesting is more feasible in Lekurukki, where there is higher rainfall than in Meibae, and a number of households are already doing it.

**DONKEYS AND TRANSPORTATION OF WATER**

Ownership of a donkey, a camel or a motorbike was seen as a strategy to manage household water stress during drought. In this community:

*Only those families with donkeys are better off because they have a 'car' that doesn't need fuel. (Female participant, women's non-group FGD, Sesia)*

*The most advantaged families are the ones who have donkeys to carry water from distant places and also those who have boda bodas, because they use their motorbikes to bring water from far to their families. (Male participant, men's FGD, Lengei)*

A household's age characteristics determine its capacity to cope during times of water stress. Young families cope better because they have more calorific energy and can exert themselves in obtaining water. Due to their small size they also require less water to satisfy their daily needs:

*The young people are energetic and require small amounts of water because the families are small*

*in numbers. (Male participant, men's FGD, Nkaroni)*

Compared to households with young people, households with elderly people are more exposed to drought-related water insecurity:

*The elderly can't wake up very early in the morning to fetch water. (Female participant, women's non-group FGD, Nadungoro)*

*The elderly are also affected more because they have no energy to cover those long distances (Female participant, women's non-group FGD, Kurikuri)*

Older people therefore have to depend on the young people, including their children and grandchildren, to meet their water needs.

**HERD SIZE AND THE COPING CAPACITY OF HOUSEHOLDS**

Herd size affects how families experience and respond to water stress. Smaller herds reduce the workload and the resources necessary to provide water and fodder. In households with many animals, there is an increased risk of having more sick and young animals. This increases the amount of labour required to take care of them. In a drought situation, it also increases the resources required to provide water and fodder.

*If you have many animals, it means that you have many small and sick or weak animals. (Female participant, women's non-group FGD, Nadungoro)*

### 4.2.4 Characteristics of households most vulnerable to water insecurity

The ability to pay for water and its transportation is important for managing water stress during drought conditions. Poor households and households without a cash income thus find it difficult to cope during these periods. As one participant put it:

*Those who struggle die out of poverty because if you don't have money you can't have water. (Female participant, women's group FGD, Lengei)*

The poverty of a household not only affects their ability to acquire water but also affects their ability to carry out tasks that require water:

*It is poverty that affects a household's ability to pay for water and there is nothing you can do without water. (Female respondent, women's group FGD, Sesia)*

The distance that a household needs to cover to obtain water determines their vulnerability to drought-related water stress. Similarly, the availability of means of transportation, for example, boda bodas and donkeys, helps to alleviate this stress:

*The households without donkeys and very far from water sources (rivers) struggle the most. (Female participant, women's non-group FGD, Sesia)*

The struggle to obtain and manage water for the household is felt most by the women, who have to ensure that competing demands for water are met. Households with more competing demands are more vulnerable to water insecurity. In most instances, these sources of vulnerability intersect. One woman stated:

*Those without donkeys struggle most because if you have to fetch water by your back using a jerrycan, and you have to give animals at home, and children need water—how do you manage to make this jerrycan enough for everybody? So, it has become such a struggle. (Female participant, women's group FGD, Sesia)*

Other factors that make households vulnerable to water insecurity include the presence of a sick person or a woman who has recently delivered within the household. In such a household, the woman's duties may be left undone if she does not have someone to assist her. This can mean, for instance, that there is insufficient food or no water for preparing food, children are not fed and livestock are neglected. One man raised the important point that households that have livestock and no labour to herd the cattle are also

vulnerable to water insecurity because the women have to help with herding.

A summary of difficulties faced by men and women in vulnerable households is provided in Table 4.5 below.

Table 4.5. Causes of household vulnerability to water insecurity, by gender

| Difficulties Specific to Women | Difficulties Specific to Men |
|---|---|
| Competing demands for women's time<br>- Difficulty balancing household chores and water-related duties<br>- Lack of physical help<br>- Attending workshops takes time<br><br>Competing demands on available water sources<br>- Not enough water for household use<br>- Reduced opportunities to borrow water<br><br>When access to water sources becomes difficult<br>- Lack of donkeys for transporting water<br>- Lack money to pay for water<br>- Long distances to water sources<br><br>Drought exacerbates other problems (vulnerabilities)<br>- Lack of energy to carry out tasks<br>- Inability to carry out tasks when recently delivered or sick<br>- Hard work causes sickness<br>- Not enough food for children<br>- Livestock are neglected<br>- Food cannot be cooked | When access to water sources and pasture becomes difficult<br>- Increased labour of digging and fetching water from deep wells<br>- Long distances to pasture and water<br>- Need for means of transport for water: men must borrow donkeys if they lack them<br><br>Increased demands on available income<br>- Difficulties when there is no income<br>- Need to pay for transportation of water<br><br>Increased demands on available time and physical energy<br>- Tiredness and lack of energy for physical work<br>- Many cattle but no herders<br>- No sons to help<br>- Men must find livestock when children lose them |

### 4.2.5 Household opportunity cost of water collection

This section seeks to understand how other household tasks affect capacity to collect water and how collecting water, in turn, affects the ability of women to do other tasks. There are distinct inter-relationships, as explained by the study participants, for a woman in a pastoralist community:

> *... In the house there is a lot of work that a woman should do apart from fetching water. (Female participant, household SSI, Nkaroni)*

The other household tasks that women engage in have been classified broadly into routine domestic, livestock-related, care-related and income-generating tasks in Table 4.6 below.

Table 4.6. Women's household tasks in pastoralist communities (based on input from women respondents)

| Routine Domestic Tasks | Livestock-Related Tasks | Care-Related Tasks | Income-Generating Tasks |
|---|---|---|---|
| - Fetching firewood<br>- Washing clothes<br>- Washing utensils | - Watching animals<br>- Taking animals to graze<br>- Taking care of small | - Taking care of and cooking for children<br>- Cooking for visitors | Beadwork |

| | | | |
|---|---|---|---|
| - Sweeping the house<br>- Repairing house<br>- Tilling | livestock at home<br>- Fencing and cleaning livestock pens<br>- Making the chairs and small containers used for milking | (day-long task)<br>- Occasional trips to market to buy food<br>- Making furniture for the house<br>- Seeing to sleeping area<br>- Bathing | |

How other tasks affect a woman's water collection duties

Water collection is not affected by other tasks when it is prioritised:

> *Water collection cannot be affected because it must be done and it is usually prioritised. (Female respondent, household SSI, Nadungoro)*

Water collection is not affected by other tasks when the water source is nearby because there is no conflict between water collection and other duties:

> *The other tasks do not affect water collection when it is available at the nearby source but when it is not, then it is affected because the other tasks consume time, hence water remains uncollected. (Female respondent, household SSI, Kurikuri)*

Water collection is affected when the other tasks come first since there may be no time left to collect water. These other tasks include fetching firewood, taking care of children and animals, and preparation of food for the family (children). The result is that water collection is delayed until much later in the day:

> *Sometimes I have to care for the children and small animals at home and there is nobody else I can leave the task to, so I have to wait for people to come and help me and I go fetch water much later in the day. (Female respondent, household SSI, Sesia)*

In other instances, the woman is not able to fetch water at all for that day:

> *I used to collect firewood and cook for my kids and end up not going to fetch water on time. (Female respondent, household SSI, Nkaroni)*

Certain tasks demand a lot of water and therefore more water must be collected:

> *The [other tasks] affect the water collection by making it harder because, when smearing [the floor or walls with mud], I will have to collect a lot of water. (Female respondent, household SSI, Nadungoro)*

Other tasks are so arduous that women do not have enough energy to collect water:

> *[Other tasks] tire me so I become very tired and am sometimes not able to collect water. (Female respondent, household SSI, Kurikuri)*

However, some women said that other tasks do not affect a woman's ability to accomplish her water collection duties:

> *No—the [other tasks] have no effect on my capacity to collect water. (Female respondent, household SSI, Nadungoro)*

One of the reasons given for this is that all of these duties are part of a woman's responsibilities and so there can be no real conflict between them:

> *All of them are my tasks so none affects the other ones. (Female respondent, household SSI, Nkaroni)*

How water collection affects other tasks

Water collection requires a lot of time and therefore affects what other tasks can be accomplished. These other tasks include productive activities and routine household chores:

> *It is difficult because, when you concentrate on fetching water, you will not do other duties like collecting firewood, looking after your livestock and many others. (Female respondent, household*

*SSI, Nkaroni)*

*Yes, it affects me because, when I fetch water the whole day, I end up neither going to collect firewood nor going to the market to buy food. (Female respondent, household SSI, Sesia)*

Collecting water consumes energy and by the time a woman is ready to carry out other duties she is already exhausted:

*Water collection makes doing the other activities harder because it is usually the one to be done first. (Female respondent, household SSI, Nadungoro)*

The fatigue caused by water collection can prevent women accomplishing other tasks:

*Fetching water is hard, I get so tired, hence it means other tasks are not done. (Female respondent, household SSI, Kurikuri)*

Tasks which rely on availability of water are easily executed when water is available:

*… When I have water, I can easily cook and wash clothes; like now, when it is raining, every other task is simple. I even get time to rest. (Female respondent, household SSI, Kurikuri)*

Some participants said that a woman who does not have water cannot attend to her childcare duties as she has to go to borrow water:

*Yes, it is hard because you don't have anybody to leave the children with and you have to go borrowing water from them [other people] as you wait for other people to come back from the water points. (Female respondent, household SSI, Sesia)*

On the contrary, some participants felt that water collection does not affect a woman's ability to accomplish other tasks:

*It [collecting water] doesn't affect [other tasks] because all of them have to be done. (Female respondent, household SSI, Nkaroni)*

The difficulty of balancing water collection and other roles creates difficulties in prioritisation. This is clearly from the responses from the women at Sesia when they were asked to describe their problems related to accessing water.

### WOMEN'S BURDEN IN BALANCING WATER COLLECTION WITH OTHER DUTIES

The difficulty of balancing water collection with other roles creates tension in terms of prioritisation. The timing of different tasks often means collecting water has to be delayed.

*Maybe you want to collect firewood at the same time you want to go and fetch water.*

*Sometimes you need to look after your livestock, so it is hard to go and fetch water at the same time*

Many women reported that there are days when they simply cannot fetch water because other chores are given priority and take up too much time.

*The problem is bad because sometimes I go to the market to buy some vegetables and end up not fetching water*

*When I go looking for lost livestock there is no water for that day because I cannot fetch [it].*

*There are times I am not able to fetch [water] and I have to sleep without water and borrow some for the younger children*

*(Female participants, household SSI, Sesia)*

A summary of the household opportunity cost of water collection for each community is shown in Table 4.7 below.

Table 4.7. Household opportunity cost of water collection

| Nadungoro | Kurikuri | Sesia | Lengei | Nkaroni |
|---|---|---|---|---|
| - Water collection is a priority—it does not affect other tasks<br>- Water collection makes some women too tired to collect firewood<br>- Water collection reduces time available for taking animals to graze<br>- It is difficult to prioritise tasks, e.g., tilling and water collection<br>- Extra water is needed when repairing mud walls<br>- Water collection enables completion of other tasks that need water<br>- Some households are not affected | - Water collection is time consuming—water may remain uncollected or else other tasks may be left undone<br>- When water sources are far away it takes too much time to fetch water<br>- Tiredness caused by performing household tasks affects water collection<br>- Water collection helps in cooking and washing clothes<br>- Water collection is easier in the rainy season | - Water collection is prioritised<br>- Hard to choose among tasks—some have to be postponed<br>- Other tasks limit how much water women can collect<br>- Other tasks make women late fetching water | - Household is not affected when water is near<br>- Other tasks limit how much water can be collected<br>- Other tasks may make women late fetching water<br>- Necessary to get up early to manage all tasks | - Water collection is prioritised<br>- All tasks have to be done<br>- Water collection takes time—other tasks have to be postponed<br>- Water collection leaves no time to get firewood or food<br>- Collecting water first helps with other tasks<br>- Water collection is always an inconvenience<br>- Women may have to leave their children unattended<br>- Some women get no help |

### 4.2.6 How does the political economy of water affect household water security during normal and shock periods?

What is women's understanding of an empowered woman?

Empowerment of women is a concept that is difficult to define in the traditional cultural context of Maa-speaking communities. In these cultures, women equate empowerment with respect (*nkanyit)* as opposed to agency, which is the construct that the study was trying to investigate. The closest translation of power in Maa is the word *nkitoria,* which translates as authority—usually masculine. Use of the word *nkitoria* was acceptable for both genders among the Maasai communities in Lekurukki but not equally understood among the more conservative Samburu communities in Meibae. An attempt to use this term in Meibae unveiled the fact that it is a highly gendered term among the Samburu and only men (not women) can be said to have *nkitoria*.

The study respondents described the concept of a powerful woman using several measures, including level of education, possession of influential leadership positions in government, politics or women's groups, mature age, possession of sons and high moral standing.

Women were perceived to be less powerful when they do not meet any of the criteria identified above. In addition, a woman's lack of power was also associated with bad morals, lack of proper home management skills, lack of exposure to the outside world and coming from humble or poor backgrounds. There was general agreement across the study areas on this understanding.

An interesting finding was that wealth did not emerge as a key factor in determining who is an empowered woman. It also emerged that widows and women who are unmarried are nowadays perceived to be quite powerful.

A summary of the factors explaining perceptions of power among women is shown in Table 4.8. below.

Table 4.8. Women's understanding of an empowered woman

| Women with More Power | Women with Less Power |
|---|---|
| Women in groups<br>Members of groups are more influential and 'developed', esp. chairpersons and treasurers since they manage funds or are account signatories<br><br>Women who are educated<br>Educated women who can write are given a chance to lead others<br><br>Women who are in leadership positions<br>- Women in politics, parliament or county government<br>- Women who lead other women (during meetings) or women who can call for meetings<br>- Women with leadership ability<br><br>Women who hold respected family/ cultural positions<br>- Wives of prominent leaders, wives of chiefs, experienced women (i.e., the elderly)<br>- Women who are the first wives in polygamous families and who have sons<br>- Women with sons<br>- Women with sons who therefore have extra sources of income | Women who are not in groups<br>- Women who do not belong to organised groups<br>- Anti-social women<br><br>Women who are not educated/ unworldly<br>- Uneducated women<br>- Women not exposed to the outside world<br><br>Women who do not show good leadership and social skills<br>- Lazy women<br>- Women with bad morals<br>- Women who are naturally timid/ shy<br>- Women who don't manage their homes well<br>- Women who are followers, not leaders<br><br>Women from poor backgrounds<br>Women from humble backgrounds<br><br>Young women, unmarried women and widows<br>- Young women are considered unable to lead (it was clarified that this observation was largely rooted in the past)<br>- Women with no husband and widows |

How does a woman become powerful?

The study also explored ways in which a woman becomes powerful. In this regard, several factors were identified and are classified into three broad categories:

a) Educated/ knowledgeable/ smart or intelligent women: women who are educated and knowledgeable about both the culture and contemporary women's rights issues are deemed more powerful and are appointed to speak on behalf of the rest:
*She has to be taught women rights and learn the community ways and culture. (Female participant, women's group FGD, Kurikuri)*

*When we know she has good qualities, like talking on our behalf and fighting for us in meetings and she can divide resources equally for us (Female participant, women's non-group FGD, Sesia)*

b) Respected women with morals and the ability to manage their home properly:
*If I am cultured and I have managed my family well, then I am powerful because people see me as a good example. (Female participant, women's non-group FGD, Nadungoro)*

c) Women with certain relationships or connections (a powerful husband, group membership, etc.)

How is a woman's power linked to her husband's status and power?

In Lekurukki, the question of whether and how a woman's power is related to her husband was addressed in quite absolute terms as being conditional on a woman and her husband's morals, a woman being on good terms with her husband and the husband's status:

> *When I am on good terms with my husband who is in a powerful position or educated, then I also become powerful. (Female participant, women's non-group FGD, Nadungoro)*

> *The man's status and power can only make the woman powerful if she and her husband have good morals. (Female participant, women's non-group FGD, Kurikuri)*

At the same time, it was clear that women wield power in their small businesses and within women's groups. Educated women were also perceived to wield considerable power due to their ownership of financial resources and their ability to acquire livestock:

> *If the woman is educated she might have resources other than livestock. Sometimes she might have brought many animals than her husband. (Male participant, men's FGD, Lengei)*

In Meibae, however, there was a strong contention that such power is limited to her activities with other women and does not translate to authority within the household:

> *A woman is only powerful in* maendeleo *[development activities]. When it comes to your husband, you are the wife there. The husband is actually not happy when he finds out the wife is a leader somewhere. So, you don't actually let him know that you are a leader somewhere. (Female participant, women's non-group FGD, Sesia)*

> *Your power among women doesn't affect you as a woman at home. At home, you are a wife and you cannot be more powerful than your husband. (Female participant. women's non-group FGD, Nkaroni)*

How does a woman's relative power or influence affect her household's access to water?

In Lekurukki, there was strong sentiment that women who are powerful can mobilise social, political, financial and knowledge capital to improve their access to water.

Figure 4.1. Ways in which a woman's power may improve water access

POWER AS FINANCIAL CAPITAL

Women in authority have financial resources which they can use for buying water, paying for transportation of water, and investing in water storage and rainwater harvesting structures:

> *If a woman has power it means that she has money to buy water so, most probably, she can access water. (Female participant, women's non-group FGD, Kurikuri)*

POWER AS KNOWLEDGE CAPITAL

Women in leadership are exposed to more opportunities for learning, some of which are water-related. They use this knowledge to improve their water access:

> *Those who are educated may have to attend workshops which talk about water harvesting. (Female participant, women's non-group FGD, Nadungoro)*

In Meibae, it was evident that all women, including those perceived as being more powerful by other women, face similar constraints in terms of water access:

> *Power does not influence or increase or improve her household's access to water—only the elderly are the ones who are considered in water access. (Female participant, women's non-group FGD, Lengei)*

In addition, some women opined that a woman in a position of authority has responsibilities that can limit her ability to fetch water, thereby reducing her household's access to water:

> *Power does not increase or improve her household access to water; in fact, most of them are always away for meetings so they don't even fetch water. (Male participant, men's FGD, Nkaroni)*

A summary of the perceived relationships between a woman's power or influence and her household's access to water is summarised in Table 4.9 below.

Table 4.9. Understanding of a woman's relative power or influence and its effect on her household's access to water

| Study Site | EFFECT OF WOMEN'S EMPOWERMENT ON HOUSEHOLD ACCESS TO WATER | | |
|---|---|---|---|
| | **Group members' views** | **Non-group members' views** | **Men's views** |
| Nadungoro | - Group members are empowered, therefore able to obtain bigger *mabati* roofs and bigger tanks for water storage<br>- Group members have collective capacity to generate income to fund household development<br>- Group members are more likely to own businesses—may have money to buy boda bodas | - Group members have advantage of collective cooperation—helps members supply household needs<br>- Groups buy water tanks for members<br>- Education: educated women may attend workshops about water harvesting and receive exposure to new ideas | |
| Kurikuri | - Groups can approach authorities and ask for water bowsers<br>- Groups can organise to bring water to a woman's household, e.g., through a revolving water loan system | Power means more money to buy water | Women can organise some meetings and organise women to bring water |

| Study Site | EFFECT OF WOMEN'S EMPOWERMENT ON HOUSEHOLD ACCESS TO WATER | | |
|---|---|---|---|
| | **Group members' views** | **Non-group members' views** | **Men's views** |
| Lengei | - There is no difference between women as group money doesn't belong to individuals<br>- A group chairlady may have access to money because she is resourceful or because her position opens up more opportunities | Power has no influence over households' access to water—women only get priority when elderly | A group chairlady can arrange for group members to bring her water |
| Sesia | Power doesn't affect access—all women are in the same position except for those who collect water from their roofs | | - Women's influence has no effect on household access to water<br>- All women are in the same position but those with powerful husbands may have storage tanks |
| Nkaroni | All women are in the same situation—they have to fetch water from far away | | There is no effect—most women in groups don't even fetch water because they are always away |

### 4.3 Successes and Bottlenecks of Water Security Initiatives

- To what extent do initiatives to make water services more sustainable affect gender power dynamics and improve or reduce access for the poorest women?
- What roles do water security and sustainability play in giving pastoralist women access to participation in income-generating activities?

#### 4.3.1 Perspectives on water supply initiatives

In Nadungoro (Lekurukki), there has been some investment in water infrastructure. The community had mixed feelings about whether this has improved the lives of the women. Some women mentioned that an organisation known as Excellent Development has been building sand dams near the Lekurukki headquarters and providing water tanks for schools, therefore children no longer have to carry water to school:

> *The tank provides water to the school so children no longer carry water to the school. (Female participant, women's non-group FGD, Nadungoro)*

On the contrary, women in the same group mentioned that they have not seen any investment in water infrastructure:

> *No projects that we have seen have been done yet. People come to see the water points, access them—but nothing has been done. There is no project that is functional at the moment. (Female participant, women's group FGD, Nadungoro)*

The women reported that they have not experienced any positive impact from initiatives to improve water security:

*We have not seen any help at the moment ... our lives have not changed in any way. (Female participant, women's group FGD, Nadungoro)*

In Kurikuri, the women indicated that there had been a borehole at Kopio, another near Kurikuri Primary School and a hand pump at Tiliko. These had been of use to the community while operational:

*The boreholes helped us while they were functional. (Female participant, women's group FGD, Kurikuri)*

However, they are no longer functional. One of the respondents indicated that the failure of the boreholes is due to inadequate maintenance or lack of maintenance.

In addition, according to one of the women, the installation of the hand pump near the spring has caused the spring to dry up:

*The hand pump has made the spring dry up. (Elderly female participant, women's non-group FGD, Kurikuri)*

The non-functional water sources have created a sense of frustration in both groups of women (those who are members of groups and those who are not) and they do not see any use for the infrastructure that has been installed:

*They [the boreholes and hand pump] have not helped us because none of them function. (Elderly female participant, women's non-group FGD, Kurikuri)*

At Sesia, the women indicated that there had been a hand pump which had been washed away by the floods during the rainy season. The hand pump had been useful to the women since they had not had to excavate shallow wells and it had also made it easier for them to water their donkeys and livestock:

*We had a hand pump [*noolbitiro*] but it was carried away by the water during the rainy season ... it really helped us when it was in good condition because we didn't have to dig shallow wells. We could also use basins to water donkeys and livestock ... it actually made our lives easier. (Female participant, women's non-group FGD, Sesia)*

The existence of water pans in Sesia and the fact that they have been beneficial was explained by both the men and the women.

*There are water pans [*silanko*] ... the water pans have helped us. (Female participant, women's group FGD, Sesia)*

*We have water pans done by CDF. We also have another water pan, though not in good condition, done by ACTED but it stores water for just a day or two. (Male participant, men's FGD, Sesia)*

In addition, there has been some effort to rehabilitate sand dams on certain rivers. This has also improved the water situation:

*[The] Red Cross has done rehabilitation [of sand dams] on this small river and people can now get water. (Male participant, men's FGD, Sesia)*

The community identified the felling of trees as one of the problems affecting water supply initiatives and linked this to negative effects on river flow:

*Cutting down of trees. We have killed rivers. (Female participant, women's group FGD, Sesia)*

In Nkaroni, the communities indicated that there are several sources—two water pans, a borehole at Barsilinga, several other boreholes and a dam called Nendikir located a distance from the village. In addition, the men indicated that there is both a water pan and a tank proposed by the County Government.

Benefits accruing from the water pans include reduced distances to water sources and increased availability of water for women, increased availability of water for animals, reduced distance to water sources for men and a reduction in the amount of effort required to fetch water (even for the donkeys):

*Water pans have helped us because we no longer go to the far river. It has been two years now and we have not lacked water. Water is now near and clean. (Female participant, women's non-group FGD, Nkaroni)*

*It helps us—especially [since] our weak and small animals can take water before it [the water pan] dries up. (Female participant, women's group FGD, Nkaroni)*

*The water pan has reduced the distance covered to fetch water. This has also reduced the work done by donkeys. (Male participant, men's FGD, Nkaroni)*

Attempts to improve the management of water sources (mostly the water pans) have been made by installing fences around them to control access. The community has also established rules that restrict the presence of animals within the water pan area and prohibit livestock from drinking directly from the water pan. However, while well meaning, these attempts to adopt improved water resource management practices have led to conflict since some members of the community are uncooperative.

*There have been water resource conflicts over the water pan. It brought about some issues because, when the water pan was fenced, some people cut the fence and refused to cooperate and use the gate. (Female participant, women's non-group FGD, Nkaroni)*

*The water pan has led to quarrels because we have put a rule in place that says that cattle should not drink from the water pan and when your livestock drink from it you will be fined, and this is what has led to misunderstandings in the community. (Male participant, men's FGD, Nkaroni)*

The community in Lengei does not have its own water source but relies on two water sources—Ltinkai and Lengei boreholes—located in neighbouring communities. These are considered to be quite distant.

The borehole at Ltinkai has provided several benefits, including paid work during its construction.

**WOMEN'S ACCESS TO WATER IN LENGEI**

*There are none [water sources] in this area but there are some in our neighbouring communities, for example, a well at Ltinkai. (Female participant, women's non-group FGD, Lengei)*

*This has not changed my life in terms of water accessibility but during the construction of the project we took part and were given food. (Female participant, women's non-group FGD, Lengei)*

Other benefits mentioned by the women include not feeling thirsty, no waterborne diseases, the water being clean despite the cost, and reduced labour in fetching water during the drought season:

*Yes, when it is drought we can decide to go and buy it [water] from Ltinkai so as to avoid the steep slope. (Female respondent, household SSI, Lengei)*

The Lengei borehole is especially useful during the drought season although the community must make use of donkeys to ferry water:

*Even though [Lengei borehole] is far from this place, it is still useful for us during the drought season because we usually use donkeys to carry water from that borehole. (Male participant, men's FGD, Lengei)*

In Lengei there has been an initiative promoting household water storage which has positively impacted the communities:

*I store it [water] in containers that I was given by ACTED and in jerrycans. (Female respondent, household SSI, Lengei)*

### 4.3.2 Benefits of water security for women

Most of the women interviewed in the study mentioned that access to water has improved certain aspects of their lives, including reducing the time spent and distances covered in fetching water, reducing

waterborne disease and increasing availability of water for domestic use. **There was little mention of the fact that ease in accessing water leads to more participation in IGAs by women**.

At Sesia, members of the community saw the felling of trees as bringing secondary benefits for the rangelands because, when trees have been cut down, grass grows better and the women sell it for an income:

> *The water pans have helped us. Where we have cut down the trees [*lehurai*] the grass has grown and we have got money from that also. (Female participant, women's group FGD, Sesia)*

In Lengei, water infrastructure now provides easy access to drinking water sources. The water is considered freer of waterborne disease:

> *We have never gotten diseases associated with water. The water is clean and is very near for us. (Female participant, women's group FGD, Lengei)*

**BENEFITS OF WATER PANS FOR WOMEN IN NKARONI**

In Nkaroni, the construction of water infrastructure has had a positive effect on the level of effort and the distance travelled by women to fetch water:

> *Water pans have helped us because we no longer go to the far river. It has been two years now and we have not lacked water. (Female participant, women's non-group FGD, Nkaroni)*

However, women are able to identify where water developments have not improved their drinking water.

In Sesia, there were complaints about the quality of water in the water pans and how this has contributed to disease in the community:

> *The water in the water pan is very dirty and people have to treat it with ash. The water … has caused a lot of stomach issues because we don't have toilets. Animals like dogs just swim in the water, which is very unhygienic. (Male participant, men's FGD, Sesia)*

# 5 IMPLICATIONS OF THE FINDINGS FOR UNDERSTANDING DOMESTIC WATER SECURITY

## 5.1 Gendered Access to Water Resources and Water Management

Water resource development and management are highly gendered, with men taking responsibility for all water resource-related tasks (including the management of improved water supplies such as boreholes) and women taking responsibility for collecting domestic and livestock water, water storage and managing water supplies for the household. The implication of this is that initiatives to improve household water security should be addressed to women (individually or as a group) rather than through the community or through male-dominated water committees.

Priority of water access can be classified into three categories—priority given to livestock, priority given to women and priority given to either women or livestock on a first-come, first-served basis. In all the five communities, male respondents mentioned that priority is given to women. However, in Kurikuri and Nkaroni it emerged that women who come to water livestock get higher priority in accessing water than women who only come to fetch water for domestic use. In many of the communities, women were said to have priority but in practice this only applies if they make sure they get to the water point before the livestock. These findings reinforce the importance of separate points for livestock and domestic water collection.

In all the communities, payment is made for water to varying degrees. Communities such as Nadungoro rely on unprotected springs and only pay for water during drought periods. However, communities in Kurikuri and Lengei regularly pay for water from borehole sources. In Nadungoro, Sesia and Nkaroni, payment for water transport was not considered to be payment for water. In Lengei and Kurikuri, payments are used to meet the operational and maintenance costs of the borehole services whereas, in the other communities, payment is made to the boda boda operators supplying the water. Factors that affect decision-making about payment for water include income-earning ability, household poverty status, availability of time for water collection and a household's distance to the water source. The decision to pay for water (or water transport) is usually made by the women but constrained by the amount of cash available. Having cash in hand provides women with more options on where and how to collect water and therefore improves water security. Access to transport (including donkeys) is also a key factor in reducing the burden of water collection.

## 5.2 Gender and Power Dynamics during Normal Periods and Periods of Shock

### 5.2.1 Empowerment and water security

Household water security is the domain and responsibility of women—more precisely, the women who 'own' the houses their children grow up in. In so far as males have any role in household water security, it is (a) during periods of severe water insecurity, (b) when they may be asked by their mothers to help collect water as young boys, or (c) on other rare occasions as morans or adult men. The former seems more likely when they have a boda boda. Other women are more likely than males to help with the collection of water and may 'loan' water when a woman's need is great.

In all the communities, children are co-opted into fetching water. This only happens when water is available at nearby sources and not during drought when women travel far in search of water.

The burden of collecting water is physically demanding and described by women in Meibae as 'exhausting'. Obtaining water for the sake of one's children is a duty that women in both study locations appear to accept. They see no choice. In stark terms, 'water is life'.

It appears that certain women who are considered more powerful than the rest have better access to

financial, social, political and knowledge capital, which they mobilise to improve their household's water security. This is similar to findings from a study in Ethiopia that households' ability to mobilise a range of assets not only reduces the time and effort required to obtain water but also expands their range of choices in obtaining water (Dessalegn et al., 2013). However, there are exceptions to this argument when a single constraining factor limits the ability of a large population to cope; for instance, in Meibae, long distances to the water sources seemed to be a shared constraint for all women, regardless of their perceived power within the community.

Regarding the role of access to social capital in a household's water security, certain relationships are important to a woman's ability to meet her household's water need. This applies during times when she is incapable of fetching water such as during sickness, after childbirth or when she has been unable to collect water due to other duties. In these situations, other women in the household and neighbourhood share their available water or assist in fetching water. A woman's membership of women's groups and her ability to mobilise her network in such groups to support her during her time of need is another avenue where social capital plays a role in easing the burden of water.

### 5.2.2 Household income generation and water security

Pastoralist communities in the study areas are heavily dependent on livestock and livestock products for their livelihoods. The ownership and sale of livestock is the domain of men. However, the study also revealed that women operate in a more diversified economy where alternative income-generating activities include small shops, charcoal burning, the sale of beads, the sale of grass and the sale of traditional beer. These additional sources of income provide much-needed cash to meet some of the household requirements for food. This money is also used to enhance a household's water security through paying for water (or its transportation) and investing in measures to improve water availability in the household (rainwater harvesting structures, water storage facilities). In this sense, it can be argued that livelihoods diversification leads to enhanced water security for pastoralist households. Similarly, ensuring access to cash controlled by the women in the household during times of stress clearly improves household water security.

## 5.3 Successes and Bottlenecks of Water Security Initiatives

There was little mention of the fact that ease in accessing water has led to more participation in income-generating activities by women. 'Leisure time' appears highly valued for the opportunity to rest and complete other household chores. This finding is similar to that from a study among rural women in Pakistani by Ilahi, N., & Grimard, F. (2000) who found that when women had improved access to water sources they were more inclined to spend the saved time on leisure than on market-based activities. Women also spend such time on activities which are beneficial to the family, such as caring for children, as reported in a study by Arku, F. S. (2010).

There have been relatively few water development initiatives in the study area and there were mixed reports on the benefits of these developments. Overall, the initiatives have improved water security but this benefit is lost when the infrastructure is not maintained and stops functioning. The very limited power of women to influence the management of these water supplies is a constraint to sustainable water security in their households.

# 6 RECOMMENDATIONS

**For Implementers and Researchers**

Findings from this study suggest certain avenues for enhancing water security for households in pastoralist communities by empowering women—access to different forms of capital that seem to enhance a household's water security, improved household water storage, increased involvement of women in management of water resources and reduced distances to water sources. More research is needed to identify the extent to which women's access to different forms of capital (social, financial, political and knowledge) influences a household's water security.

Women interviewed during the study indicated that any time savings from their water collection and other domestic roles are used for recreation and in accomplishing other care-giving roles. Such roles include caring for the children and preparing food for the family. This supports evidence that improvements in household water security contribute to improved nutrition and health outcomes for children.

In all the five communities studied it emerged that the use of motorbikes (boda bodas) for water transportation has led to improved water security for households. Investment in rural transport could improve access to water. Operational research would evaluate the extent to which improved transportation contributes to increased household water security.

Further research would provide empirical evidence for the key findings from this study which would be useful for incorporation in the assessment of household water security risk and planning for targeting of interventions. Further research would focus on several emerging issues:

a) The role of emerging technologies (urban-rural mobile money transfers and remittances, increased use of motorbikes as a means of transporting water) in promoting coping strategies for pastoralist households faced with water insecurity
b) The role of different forms of capital (cultural, social, financial, knowledge) in increasing household water security
c) The effect of monetarisation of the rural pastoralist economy on household coping during water insecurity
d) The effect of urban-rural migration of pastoralist men on women's workload related to water
e) The role of various institutions in enhancing water security for pastoralist communities
f) The effect of household water storage and rainwater harvesting technologies on household water security
g) The effectiveness of community-based management arrangements, their shortcomings and the changes which can be made to increase the effectiveness and equality of such systems
h) Understanding the vulnerabilities of current water infrastructure and management arrangements to climate-related shocks, predicting the occurrence of such systemic shocks and understanding their implications for communities (and households) and the measures that can be adopted to increase the resilience of the system as a whole
i) Women in pastoralist communities bear a significant burden in household water security as well as in carrying out other household responsibilities and taking care of small ruminants and the young of cattle. The extent to which this interferes with their childcare duties and its effect on child nutrition outcomes (for example, stunting and malnutrition) needs to be explored
j) This study was carried out in a rural community where some of the evidence generated pointed to changes in demography, with increased rural-urban migration and sedentarisation of formerly nomadic pastoralists. How such populations fare (especially the women) in terms of water security in the surrounding urban centres needs to be studied.

**FOR NRT and the Water Resource Management Partnership**

This study has unearthed important findings that can be used to improve water security programming by making it more gender responsive:

a) There is need to enhance women's earning capacity in a water economy that is increasingly cash-based
b) Water storage and rainwater harvesting technologies are critical factors in enhancing household water security and improving the related outcomes for women
c) Modern water transportation technologies play an increasing role in improving household access to water, thus enhancing their water security
d) Existing water management structures need to be improved to ensure efficient and equitable distribution of water for vulnerable populations
e) The highly gendered division of responsibility for management of water resources (men) and domestic water in the household (women) make it difficult for women to influence their access to water. Giving women (or women's groups) an opportunity to manage water supplies may help to overcome these difficulties.
f) Investment in additional infrastructure does not always translate to improved access, especially for the most vulnerable, without additional measures to strengthen water governance.

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# 7 ANNEXES

## Annex 1

Summary of methods and research tools

| Research Tool | Purpose | Sample Characteristics | Sample Size |
|---|---|---|---|
| FGD | To generate discussion on<br>- Characteristics of normal and drought periods and water source variables<br>- Gender roles and responsibility for water security<br>- Difficulties faced by women in relation to water security<br>- Household resilience in relation to water<br>- Payment for water<br>- Household income generation (male/ female) and control of income<br>- Gendered power, influence and disempowerment<br>- Community water projects' impact on women's and men's lives | Single-sex focus groups:<br>a) Women members of groups, e.g., IGA groups<br>b) Women of all ages who are not members of groups<br>c) Men and male youth who were available to meet with the research team during the period of the study (many were away with the livestock) | In each conservancy:<br>a) An area identified as having women's groups, e.g., IGA groups (20 F, 20 M)<br>b) An area identified as lacking women's groups (20 F, 20 M) |
| Semi-structured interview guide | To generate findings on<br>- Household socio-economic characteristics<br>- Household water sources<br>- Household water requirements<br>- Water storage<br>- Household water management<br>- Difficulties households face in relation to household water<br>- Gender roles and responsibilities for water security<br>- Household water use<br>- Transportation of | SSIs at household level with adult women and men, conducted individually and preferably capturing men and women with responsibilities for household decisions, i.e., not unmarried women or men | The study aimed to conduct SSIs in each area with a minimum three individual women at household level, i.e., in different households, and three individual men. Individuals were to be identified through FGDs or water source observation (i.e., snowball sample) while ensuring that households represented different socio-economic status where this was identifiable. |

| Research Tool | Purpose | Sample Characteristics | Sample Size |
|---|---|---|---|
| | household water and ownership of resources<br>- Paying for water<br>- Household activity opportunity costs of water collection | | |
| Key informant interview guides (for clarifying, verifying and drilling down into detailed information for specific questions that we have or that arise from FGDs, SSIs, WSOUIs, observations) | To generate findings on<br>- Characteristics of normal and drought periods and water source variables<br>- Management of water sources<br>- Payment for water<br>- Issues affecting household water storage | Individual men and women who were identifiable as having the overview, specific experience or knowledge, or status needed to help the researchers understand issues arising from the research and verify our hypothesis about the link between female disempowerment and water (in)security | It was possible that questions for KIIs would vary from location to location. The research team was cautioned to avoid relying only on male KIIs or female KIIs, or using the same KII for everything, e.g., focusing on the person who spoke the best Kiswahili. |
| Participant locality mapping of water sources to ascertain distance and availability | To generate findings on<br>- Characteristics of a normal and drought period and water source variables (location of water sources used by the community during drought/ normal periods)<br>- Difficulties the community faces in relation to water security (location of problems—hotspots during drought and normal period) | A male or female informant who was willing to take time to map and talk about the local water sources, and take the researcher to them | One person in each location (could be exercise done with several people) |
| Water source observation and user interview (WSOUI) guide | To generate findings on<br>- Community water source characteristics and water user profiles<br>- Gender roles and responsibility for water security<br>- Difficulties water source users experience<br>- Household water requirements<br>- Payment for water and household income<br>- Household water storage | Tool for researchers to use when observing 'a day at the water source': included basic observational data to collect plus guide questions for interviews with female and male water source users | The aim was to observe water source use and management at one water source per location. The number of interviews with male and female users was unspecified. |

**Annex 2**

Context analysis of study populations

| The five communities where fieldwork was conducted | Lekurukki | | Meibae | | |
|---|---|---|---|---|---|
| | **Kurikuri** | **Nadungoro** | **Sesia** | **Lengei** | **Nkaroni** |
| Location: key features | Kurikuri and Saeku settlements are located above Doldol town and partly in Mukogodo forest area | Settlement located Mukogodo forest | Remote, no major settlements; bordered by the Ewaso Ngiro River | A few small settlements traversed by the main road | Remote, no infrastructure; traditional, semi-nomadic households |
| Water services and management | · Fairly water secure (Doldol)<br>· Long distances to water (North Kurikuri, Saeku) | · Water secure (presence of springs)<br>· Water is free | · Water insecure<br>· Ewaso Ngiro river is the main water source | · Fairly water secure (reliable borehole)<br>· Community pays for water | · Most water insecure<br>· Long distances to water—approximately 8 km |
| Human-wildlife conflict | Wildlife risk due to proximity to elephant migration corridor | Human-wildlife conflict since springs are also accessed by elephants | Human-wildlife conflict since river is also accessed by elephants | | |
| Livelihood options | Pastoralism and beadwork (women) | Subsistence farming, pastoralism, beadwork (women) | Pastoralism, beadwork (women) | Pastoralism; donkeys valued | Pastoralism |
| Land ownership | Communal group ranch | Communal, trust land—Mukogodo forest | Communal rangelands | Communal rangelands | Communal rangelands |
| Services | Two primary schools, pre-school, hospital, shops (Doldol) | Primary school, church, shop | Primary school, church, shops, livestock market | Pre-school, livestock market | Health centre, Primary school, shops (mostly urban) |
| Communication | Loose-surface roads, reliable cell phone coverage | Loose-surface roads, reliable cell phone coverage | Loose-surface roads, reliable cell phone coverage | Loose-surface roads, reliable cell phone coverage | Located along Maralal-Wamba road |
| Population | Mixed ethnic groups at Kurikuri, *bomas* mostly Samburu | Only Maasai, predominantly Christian | Samburu, each area has different clans | Samburu, each area has different clans | Samburu, each area has different clans |

| | | | | | |
|---|---|---|---|---|---|
| | and Maasai | | | | |
| External interventions | Water projects, housing | NRT, sand dams | Government roadworks | ACTED borehole and piped water network | CDF-constructed health centre |
| Homesteads | Bigger homesteads, extended family (North Kurikuri) | Mostly nuclear homesteads | | Big *boma* with many houses, mud houses, no iron sheet roofs | Big *boma* with many houses, mud houses, no iron sheet roofs |

**Annex 3**

Household water security framework for pastoralists communities

| Water Security Input | Season | Activities | Responsibility | Constraints | Opportunities | Risks | Water security Outcomes |
|---|---|---|---|---|---|---|---|
| Water Resource | Dry | BH, Deep wells, River bed | | lack of infrastructure | | climate risk [drought], contamination of source | water source availability |
| | Wet | shallow wells, seasonal rivers, ponds | | lack of infrastructure | | flooding, contamination of source | |
| Water Source Development | Dry | digging wells, BH drilling, construction of sand dams | WRUA,County, Devt partners, Men | High Capital cost, Physically demanding | conultation with community [esp women] on siting, use of renewable energy, choice of technology | poor choice of site, poor choice of technology, poor implementation | water source availability, water source reliability |
| | Wet | rainwater harvesting | women | lack of RWH facilities | provide capital for investing in RWH facilities, women group savings | | |
| Water Source Maintenance | Dry | well excavation, water pan de-silting, BH equipment servicing + repairs | WUA, County, Devt partners, Conservancy, Men | Physically demanding, Financial resources, Lack of techncial capacity [local] | invest in local capacity for O&M, invest in water source insurance, capacity build WUA | O&M funds not available | water source reliability |
| | Wet | | | | | | |
| Water Services Mgmt | Dry | kiosk operation, protection of water pans, Management of access | WUA, BH/Kiosk operator, Men | inequity in access, operator does not have capacity | train operator on financial management, develop pro-poor strategy | misappropriation of funds, elite capture of services, exorbitant charges for water vulnerable members of community locked out | water services reliability, affordability, acceptability |
| | Wet | | WUA, BH/Kiosk operator, Men | | | | |
| Water Collection | Dry | carrying water from source, payment for water, payment for water transport | Women, Men [rarely] | long distances to source, time spent, physically demanding, costly trade-offs [HH duties, child caring, child nutrition], no money to pay for water & transportation | invest in water services within acceptable distance, support alternative income-generating activities, support women group merry-go round savings schemes | human wildlife conflict at source | reduced distance to source, reduced time collecting water, affordability of water transport |
| | Wet | carrying water from source, payment for water, payment for water transport | Women, girls | | | | |
| Water Storage | Dry | acquire storage containers | Women | lack of containers | provide capital for investing in RWH facilities, women group savings | no funds to invest in storage | reduced time collecting water, buffer storage available at HH |
| | Wet | acquire storage containers | Women | | | | |
| Water Management | Dry | prioritise water use, restrict access to available water, | Women, Men [rarely] | inadequate water at HH, increased demands on water [including small livestock], emotional strain | invest in water storage | | livelihood outcomes achieved [water for domestic chores, time for child caring , time to care for HH, time for resting] |
| | Wet | | Women, girls | | | | |