

Women on the Range: Gendered Adaptation Strategies for Resilience in Kenyan Pastoralism

Waithira A.C Dormal

Departamento de Sociología, Campus El Cristo, Universidad de Oviedo, Calle Valentín Andrés Álvarez, s/n, 33006, Oviedo, Asturias, España.

UO296834@uniovi.es

Abstract: This study delves into the gendered dimensions of climate adaptation in Kenyan pastoralist communities, focusing on the experiences of women in Kajiado County. Through twelve gender-disaggregated focus group discussions, this research explores how gendered social differentiation shapes women's adaptation strategies. The findings reveal that despite facing significant challenges due to cultural norms, limited access to resources, and climate-induced shocks, women play a crucial role in household and community resilience. By understanding the complex interplay between gender, culture, and climate change, this study aims to contribute to the development of more effective and equitable climate adaptation strategies that enhance the agency and well-being of pastoralist women and build resilient communities.

Keywords: Climate Change Adaptation, Pastoralism, Resilience, Social Differentiation, Women.

1. Introduction

Climate change and environmental degradation are significantly impacting Kenya's Arid and Semi-Arid Lands (ASALs), home to numerous pastoralist communities. These communities have traditionally relied on livestock rearing in challenging terrains characterized by erratic rainfall and frequent droughts (Birch, 2018; Howell et al., 2021; Wangui and Smucker, 2018). Historically, pastoralist systems have developed complex adaptive mechanisms to withstand environmental stressors. However, the increasing frequency and severity of climate-related events are testing their resilience (Grillos, 2018). In these pastoralist systems, gender roles have been deeply embedded, serving as adaptive mechanisms that have ensured the endurance of families and communities. Men have typically managed livestock and herding, while women have focused on domestic duties and, more recently, income-generating activities (Sandstrom and Strapasson, 2017; Yurco, 2018). These roles are not merely societal norms but are linked to the environmental challenges and economic practices sustaining pastoralism for generations. Nevertheless, these gendered roles are being called into question in the face of the escalating environmental crisis as the strategies that were once effective for survival are no longer viable under current climate stresses.

The changing climatic conditions have disproportionately affected pastoralist women, who now must adjust not only to shifting environmental conditions but also to the evolving gender expectations (Anbacha and Kjosavik, 2019; Venkatasubramanian and Ramnarain, 2018). In the absence or diminished ability of their male counterparts impacted by migration and other climate-driven pressures, women now frequently oversee multiple revenue streams, ensure the food security of the household, and make crucial adaptation decisions (Rao et al., 2019). This shift in gender roles highlights the dual burden on women to maintain traditional responsibilities while adopting new roles essential for household survival. Yet, despite their critical roles, gender-specific coping strategies are often overlooked in climate adaptation studies, leading to generalised strategies that fail to capture the nuances of gendered experiences and access (Furusa and Furusa, 2014; Walker et al., 2022). This failure to account for these gender-specific experiences can result in adaptation strategies that do not adequately address the needs and constraints faced by women. This exclusion can weaken pastoralist communities' general resilience and worsen already-existing gender disparities (Venkatasubramanian and Ramnarain, 2018).

In Kenyan pastoralist communities, women are at the forefront of climate adaptation, employing strategies like intercropping and utilising Indigenous knowledge to maintain livelihood security (Omolo and Mafongoya, 2019). However, societal structures often limit their access to resources such as land, livestock, and technology, impeding their adaptive capacity (Carr and Thompson, 2014). These challenges are not solely issues of gender inequality but are intertwined with other social categories, creating a complex web of individual distinctions that significantly affect women's adaptive capacity and opportunities. As highlighted by Alare et al. (2022), gendered social differentiations play a crucial role in shaping resilience and vulnerabilities, influencing how women navigate and respond to climatic challenges. The intersectionality of gender with factors such as age, socio-economic status, and household structure means women experience these challenges in diverse and nuanced ways (Rao et al., 2019). Furthermore, cultural expectations and structural inequities in many pastoralist

communities further compound women's adaptive capacities. Entrenched patriarchal norms often restrict women's agency, limiting their access to critical resources and participation in climate adaptation mechanisms (Balehey et al., 2018; Mushi and Makauki, 2017). This exclusion not only limits women's contributions to adaptation efforts but also perpetuates their vulnerability to climate change impacts.

This study, therefore, aims to explore the gendered dimensions of climate adaptation in Kenyan pastoralist communities, focusing on women's coping mechanisms and the influence of their gendered social differentiation on adaptation strategies. This research will seek to illuminate how gendered social differentiation within pastoralist communities' shapes adaptation strategies. The analysis of women's perspectives will provide valuable insights into the unique ways they navigate the challenges posed by climate change, contributing to a more nuanced understanding of resilience in pastoralist settings. Through this research, we aim to contribute to the development of inclusive and sustainable adaptation strategies that recognise and leverage the critical role of women in addressing climate challenges, ensuring their voices are heard and valued in decision-making processes.

2. Methodology

This chapter outlines the methodological approach employed in exploring the gendered dimensions of climate adaptation in Kenyan pastoralist communities, with a particular focus on women's coping mechanisms and the influence of gendered social differentiation on adaptation strategies. By employing a gender-sensitive qualitative approach, this study utilises focus group discussions to provide a comprehensive analysis of how women and men experience and respond to climate change within these communities.

2.1 Research Design

The research design involved qualitative primary data collection through focus group discussions. These discussions were conducted in four locations across three different communities, encompassing both agro-pastoral and pastoralist settings. This approach allows for a comparative analysis of mixed farming pastoralists and purely pastoralist communities, providing valuable insights into the unique challenges and opportunities faced by each group. The focus groups were gender-disaggregated, with twelve sessions in total (six with women and six with men), to ensure that the specific experiences and coping mechanisms of women are thoroughly explored. The communities were purposefully selected to represent a diverse range of contexts and characteristics, enabling a nuanced understanding of the gendered dynamics within the context of climate adaptation in pastoralist communities.

2.2 Selection of Study Sites

The selection of study sites was based on capturing the heterogeneity of agro-pastoral and pastoralist communities and their experiences with climate adaptation. The chosen communities include:

Illbisil: A rural mixed farming community practicing a combination of crop cultivation and livestock rearing. This site highlights the diversity of pastoralist experiences and challenges stereotypes, allowing exploration of how climate adaptation strategies intersect with gendered roles and responsibilities.

Kimana: A peri-urban community engaging in agro-pastoral practices with access to irrigation systems. This community faces unique challenges related to land-use changes, urbanization pressures, and limited access to resources, enabling an exploration of gendered dynamics in a rapidly changing environment.

Rombo: Comprising mostly nomadic and semi-nomadic households, this community provides insights into how climate adaptation specifically affects nomadic pastoralists, especially women, who often bear a disproportionate burden of climate-related impacts. The community's indigenous knowledge and practices offer valuable insights into traditional coping mechanisms and adaptation strategies.

This selection strategy ensures that the study captures a wide range of experiences and perspectives, particularly focusing on the role of women and the influence of gendered social differentiation on adaptation strategies.

2.3 Data Collection Techniques

The primary data collection technique employed in this study was qualitative focus group discussions. These discussions were designed to delve into the gendered dimensions of climate adaptation, with a particular emphasis on women's coping mechanisms. Conducted across the selected study sites, the focus groups were

gender-disaggregated to ensure that both women and men could freely express their experiences, perceptions, and concerns related to climate adaptation. This approach facilitated the creation of safe spaces where participants could discuss the impacts of climate change, their vulnerabilities, and the coping mechanisms they employ. The discussions were structured to elicit detailed narratives and insights, allowing for a deep exploration of the gender-specific challenges and opportunities within each community.

2.4 Data Analysis

The data collected from the focus group discussions underwent a comprehensive qualitative analysis process. The discussions were transcribed verbatim, and the transcripts were then coded and thematically analysed to identify key patterns, themes, and narratives related to gendered perspectives on climate adaptation. This thematic analysis allowed for the identification of recurring issues and unique insights across different communities and gender groups. The analysis aimed to uncover the underlying factors that influence gendered experiences of climate adaptation, with a particular focus on the strategies employed by women and the impact of gendered social differentiation on these strategies.

2.5 Ethical Considerations

Ethical considerations were of paramount importance throughout the research process. Informed consent was obtained from all participants, ensuring their voluntary participation and the confidentiality of their responses. The research was conducted in consultation with local community leaders, respecting local customs and norms, and with authority from Universidad de Oviedo. This ethical framework ensured that the research was conducted with integrity and respect for the communities involved, fostering trust and cooperation between the researchers and participants.

2.6 Limitations

This study faced certain limitations that should be acknowledged. Firstly, the research design focused on specific study sites, which may not fully represent the diversity of agro-pastoral and pastoralist communities across the broader region. Secondly, the reliance on self-reported data in focus group discussions may introduce biases, as participants may have varying levels of awareness or willingness to disclose certain information. Despite these limitations, the qualitative approach and the rich data obtained from the focus group discussions provide valuable insights into the gendered dimensions of climate adaptation.

This study highlights the significance of context-specific insights and the need for gender-sensitive adaptation policies that acknowledge and support the distinct strengths and challenges faced by women in pastoral and agro-pastoral settings. The study's focus on gender-disaggregated data collection and analysis guarantees that both men's and women's perspectives are heard and considered, offering a more comprehensive understanding of the vulnerabilities and adaptive capacities inherent in these communities. In pastoralist areas of Kenya, this method not only advances scholarly knowledge of gendered climate adaptation but also provides guidance for real-world interventions meant to boost resilience and advance equitable adaptation tactics.

3. Findings

The purpose of this study was to investigate how gender affects climate adaptation in pastoralist communities in Kenya, with a particular focus on how women's coping and adaptive strategies are influenced by gendered social differentiation. This study explores the relationship between gender, social diversity, and cultural norms to highlight the challenges and opportunities that women face when adapting to climate change.

3.1 Resource Accessibility and Gendered Constraints

Pastoralist women face significant resource constraints that limit their ability to adapt to climate change. The focus group discussions reveal heterogeneity in resource access and adaptive capacity, shaped by intersecting social differentiations such as age, education, class, and marital status.

Older women, reliant on traditional livestock-based livelihoods, are particularly vulnerable. One respondent noted, "This climate change has taken away our livestock. They are our main source of wealth, so when we have no cows, children will be sent home for school fees." In contrast, younger women, with better access to early warning information and climate-smart agricultural practices, have more opportunities to diversify income sources. Thus, these younger women who have higher literacy levels, access and, utility of technologies like

smartphones may have more opportunities to diversify their income sources and access information about climate change adaptation. However, the data indicates that there is unequal access to these information sources, with those younger women from lower-income or remote households face significant disadvantages in accessing these resources.

Furthermore, marital status and household dynamics also influence women's resource accessibility. Married women or those with their own land and livestock have more autonomy and access to resources like communal grazing lands, enabling practices such as "paddock" and "zero-grazing." Conversely, unmarried women or those from resource-constrained households struggle with traditional livelihoods and petty trading, exacerbating their vulnerability to climate impacts. The poorer women are more dependent on traditional livelihoods and petty trading like "milk production for sale" but "now we do not have any milk to sell" because the drought killed livestock". Consequently, due to the marital status, the unmarried and poor women may struggle to negotiate access to communal resources, which are vital for sustaining their livelihoods. The lack of access to these resources can exacerbate their vulnerability to climate change impacts, as they have fewer options for managing and mitigating the effects of drought and other environmental stresses.

Additionally, class and wealth differentials further influence adaptation choices. Women from affluent households can invest in alternative livelihoods, such as "chicken rearing" and "beekeeping," providing a buffer against climate impacts. However, for the economically strained women, the loss of livestock is catastrophic. Livestock is not just a "primary source of income" it also serves as "credit collateral". Consequently, with the loss of livestock women's ability to sustain their livelihoods and invest in alternative strategies is severely impacted. Without the necessary capital to explore new income-generating activities, these economically strained women may find themselves trapped in a cycle of poverty and vulnerability, with fewer options for building resilience against climate impacts.

In response to these disparities, the respondents emphasize the need for community-level interventions that address the heterogeneous needs and constraints of different groups of women. Initiatives like tree planting and education on climate-smart practices could benefit the entire community but may require tailored approaches to ensure equitable access and participation as one of the respondents suggested.

3.2 Decision-Making Authority and Gender Dynamics

Social differentiations among women significantly influence their roles, responsibilities, and decision-making authority within households and communities. Economic pressures have compelled women to take on more prominent roles in providing for their families, particularly among widows and households where men are absent. As one participant noted, "nowadays, women are the most responsible ones, especially for the widows. We are no more different from those with husbands." This statement reflects the growing recognition of women's contributions to household survival and the necessity for them to step into roles traditionally held by men. This increased economic responsibility has, in turn, empowered women to become more involved in decision-making processes related to adaptation strategies. As women take on greater roles in securing household livelihoods, they gain more influence over decisions concerning resource management, agricultural practices, and community adaptation initiatives. This empowerment is not only reshaping gender dynamics within households but also challenging traditional power structures within communities. By actively participating in decision-making, women can advocate for adaptation strategies that address their specific needs and priorities.

Moreover, the data suggests that education may be playing a role in shifting gendered decision-making dynamics. Pastoralist women are increasingly prioritising education for their children, including orphans, to empower the next generation. This collective effort is evident in their initiatives to unite and contribute resources to ensure that even the most disadvantaged children have access to schooling. As one respondent noted, "That is why we have united and contributed to those who are very low to ensure that their children go to school and also the orphans." This investment in education is not only a testament to the women's commitment to their children's future but also a strategic move to enhance the community's overall resilience to climate change. By ensuring that all children, regardless of their family's wealth or social status, have access to education, women are laying the groundwork for a more equitable distribution of decision-making power in the future.

However, persistent gender hierarchies and constraints remain. Despite women's increasing involvement in decision-making, traditional gender norms continue to pose significant challenges. Men, traditionally seen as the primary providers in this pastoralist community may be struggling to perform this role in the face of

economic hardships, which inadvertently may undermine women's decision-making authority. As one participant highlighted, "you may find that when a child comes home for school fees and finds their father, he tells them 'look for your mother because I don't have money.'" This scenario illustrates how economic pressures are reshaping household dynamics, with women stepping in to fill the financial void left by men. However, this shift does not necessarily translate into a complete transformation of gender hierarchies, as women still face societal expectations and limitations that can restrict their authority.

These findings demonstrate the complex nature of gender roles in adaptation decision-making. Economic pressures and evolving socio-ecological circumstances are contributing to a more prominent role for women, but social differentiation, including class, wealth, and marital status, continues to shape the extent of female participation in decision-making processes.

3.3 Social Networks and Informal Support Systems

The data highlights the strong sense of community and mutual support among women in pastoralist communities. Social networks serve as critical safety nets, transcending individual differences and social differentiations such as class, wealth, and marital status.

These networks enable women to pool resources and provide mutual support, ensuring the wellbeing of the entire community. As illustrated by the statement, "we as women, have united and loved each other. If it weren't for them, my children would have not gone to school," these networks operate on principles of solidarity and collective responsibility. By coming together, women can mitigate the impacts of economic hardships and social inequalities, providing essential support to those who are most vulnerable. This collective approach not only strengthens community resilience but also challenges traditional social hierarchies, as women leverage their unity to address shared challenges and advocate for their needs. Through this lens, social differentiation becomes a unifying rather than divisive factor, as women harness their diverse strengths and resources to foster a more inclusive and supportive community environment.

In addition, women's social networks are essential for exchanging information and developing new skills, particularly in alternative livelihood strategies. These networks facilitate the exchange of insights on activities like "beekeeping," "chicken rearing," and "trading," as well as environmental preservation techniques like "tree planting." Through making information and resources more accessible, these networks help close gaps between women from different socioeconomic backgrounds. This cooperative atmosphere allows women to leverage their diverse experiences and knowledge, creating opportunities for all members to contribute to and benefit from new adaptation strategies. This collective approach not only enhances individual and community resilience but also challenges traditional social hierarchies, as women from different backgrounds unite to address shared challenges and drive innovation in adaptation practices.

Furthermore, self-help groups, such as "Tuinuane," play a pivotal role in providing economic support and resilience in the face of climate change challenges. These groups enable women to engage in cooperative activities, such as "selling milk" and "accessing loans", which are crucial for sustaining their livelihoods and enhancing their financial independence. However, the severe drought has disrupted these cooperative activities, leading to a loss of this vital source of income and support. This disruption highlights the vulnerability of these networks to environmental stressors and underscores the need for adaptive strategies that can sustain their operations even in adverse conditions. Despite these challenges, the existence of such networks demonstrates the potential for collective action to transcend social differentiations, as women unite to address common challenges and build resilience.

Despite these challenges, the existence of such networks demonstrates the potential for collective action to transcend social differentiations. Women unite to address common challenges and build resilience, emphasizing the crucial role that gendered social networks play in helping women deal with environmental issues. These networks provide access to information, resources, and emotional support, enabling women to explore innovative adaptation techniques and ultimately enhancing the resilience of their communities.

In summary, the findings of this study underscore the importance of understanding the complex interplay of gender, social differentiation, and cultural norms in shaping climate adaptation strategies in pastoralist communities. By highlighting the unique challenges and opportunities faced by women, this research contributes to a more nuanced understanding of gendered adaptation and informs the development of more equitable and effective adaptation policies and interventions.

4. Discussion

The findings of this study provide a nuanced understanding of the gendered dimensions of climate adaptation within Kenyan pastoralist communities. By integrating intersectional and feminist geography theories, we can further illuminate the complex interplay of social identities and power dynamics that shape women's adaptive strategies. This discussion aims to deepen the theoretical integration by drawing on these frameworks to provide a critical perspective on the findings.

4.1 Intersectionality and Gendered Climate Adaptation

Intersectionality, as highlighted by Crenshaw, offers a powerful lens to understand how overlapping social identities, such as gender, age, education, and marital status, influence women's experiences and adaptive capacities in pastoralist communities (Wangui, 2014; Wangui and Smucker, 2018). The study's findings reveal that while gender is a significant factor, it is the intersection of various social identities that truly shapes women's access to resources and decision-making power. This intersectional approach underscores the heterogeneity within gender groups, highlighting that adaptation strategies are not uniform but are influenced by a myriad of social factors.

An intersectional perspective reveals that older women, especially widows, experience more restrictive circumstances, while younger, educated women frequently have more agency and access to a variety of economic opportunities (Anbacha and Kjosavik, 2019). This differentiation within gender groups challenges the notion of women as a monolithic category and emphasizes the need for adaptation strategies that are sensitive to intra-gender variations. Intersectionality thus enriches our understanding of resilience by illustrating how social stratification within gender groups affects adaptive capacities.

4.2 Feminist Geography and Power Dynamics

Feminist geography provides a critical framework to examine how spatial and social structures influence gendered power dynamics in climate adaptation (Carr and Thompson, 2014; Macgregor, 2010). The study's findings reveal that decision-making authority, traditionally male-dominated, is being reshaped by climate-induced stressors. This shift in power structures is not uniform but varies across social lines, with women in certain social positions gaining more influence in household and community decisions.

This study reveals that climate-induced stress is reshaping traditional gender hierarchies, leading to incremental shifts in decision-making roles within households and communities. In households led by widows or female elders, women frequently assume roles previously held by men, especially in financial and resource management. The findings reveal that women's agency in decision-making is influenced by social differentiation, with factors such as household structure, socio-economic status, and education playing significant roles. For instance, women who are household heads or whose husbands engage in migratory labour are increasingly taking on decision-making roles. This shift in decision-making authority reveals intra-gender differentiation in women's agency. Agency, in this differentiated context, is not only about empowerment but also about navigating power within intersecting social structures. While some women successfully assume decision-making roles, others face barriers due to age, literacy, or social expectations tied to marital status. These differences in agency across social lines within gender groups illustrate that adaptive capacity is shaped not just by gender but by the interaction of various social factors within that gender. Nevertheless, all these shifts are constrained by enduring cultural norms that still prioritise male authority.

Feminist geography emphasizes the importance of space and place in understanding gendered experiences. In pastoralist communities, the spatial distribution of resources and the cultural norms governing essential assets ownership and decision-making mechanisms for land and livestock ownership create structural barriers for women (Mushi and Makauki, 2017). Feminist geography helps create a better understanding of how women's adaptive strategies are shaped by the intersection of these spatial dynamics with social identities. This viewpoint emphasizes the necessity of adaptation strategies that consider women's living and working environments as well as gender.

4.3 Synthesizing Theoretical Insights

The integration of intersectionality and feminist geography theories provides a comprehensive framework for understanding the gendered dimensions of climate adaptation in pastoralist communities. This theoretical

synthesis reveals that adaptation is a multifaceted process influenced by the intersection of social identities and spatial dynamics.

The study identifies three key themes: the diversification of livelihoods, shifts in decision-making power, and access to resources. Applying an intersectional lens corresponds with previous findings in studies by Wangui and Smucker (2018) that not all women have equal access to diversifying their sources of income; those whose identities as youth and education intersect are better positioned to do so. Feminist geography further explains and allows a correspondence with other studies such as Mushi and Makauki (2017) that spatial constraints, such as land ownership norms, limit the ability of women to engage in diversified livelihoods.

Shifts in decision-making power are also influenced by these theoretical frameworks. Intersectionality highlights how women from different social strata experience varying degrees of empowerment in decision-making processes (Anbacha and Kjosavik, 2019). Feminist geography provides insight into how these shifts are spatially situated, with women in certain geographic areas gaining more influence due to changes in resource availability and community dynamics (Carr and Thompson, 2014).

Access to resources is the critical theme where both theories intersect. Intersectionality reveals how social identities affect women's access to resources, with marginalized groups facing greater barriers (Wangui, 2014; Wangui and Smucker, 2018). Feminist geography emphasizes the spatial distribution of these resources, illustrating how geographic location and cultural norms further complicate access for pastoralist women in the Kenyan rangelands (Macgregor, 2010).

The findings of this study underscore the importance of integrating intersectional and feminist geography theories into the analysis of climate adaptation strategies. By doing so, we can deepen our understanding of the complex interplay of social identities and spatial dynamics that shape women's adaptive capacities. This theoretical integration not only enhances the academic impact of the study but also provides valuable insights for developing inclusive and equitable adaptation policies that empower women and strengthen community resilience.

4.4 Contributions and Future Research Directions

This study makes significant contributions to both policy and practice, as well as to the academic literature on climate adaptation in pastoralist contexts. In terms of policy and practice, the research underscores the necessity of integrating gender-sensitive approaches into climate adaptation policies. Through the diverse roles and contributions of women in pastoralist communities, policymakers can craft interventions that enhance women's decision-making capabilities, and address gender-specific barriers to adaptation. Academically, the study illuminates the often-overlooked intra-gender variations in adaptation strategies, demonstrating that adaptation capacities among women are not homogeneous. This finding challenges the prevailing assumption of uniformity in women's adaptation strategies and highlights the need for tailored interventions that consider these variations.

The study also suggests areas for further research, particularly in exploring longitudinal shifts in intra-gender decision-making roles. Future studies could examine how decision-making roles evolve over time across social strata within gender groups, especially as climate pressures intensify.

5. Conclusion

The study provides valuable insights into the gendered dimensions of climate adaptation in pastoralist communities in Kenya. It highlights the significant role of social differentiation in shaping women's access to resources, decision-making authority, and adaptive capacities. The findings underscore the importance of considering intersecting social factors such as age, education, class, and marital status in designing interventions to support women's adaptation efforts. By addressing the diverse needs and constraints of different groups of women, community-level interventions can enhance the resilience of pastoralist communities to climate change. Additionally, the study emphasizes the critical role of social networks and informal support systems in fostering collective action and building resilience, offering valuable lessons for policymakers and practitioners working to support climate adaptation in similar contexts.

References

- Anbacha, A.E., Kjosavik, D.J., 2019. The Dynamics of Gender Relations under Recurrent Drought Conditions: a Study of Borana Pastoralists in Southern Ethiopia. *Hum Ecol* 47, 435–447.
- Balehey, S., Tesfay, G., Balehegn, M., 2018. Traditional gender inequalities limit pastoral women's opportunities for adaptation to climate change: Evidence from the Afar pastoralists of Ethiopia. *Pastoralism* 8.
- Birch, I., 2018. Economic growth in the arid and semi-arid lands of Kenya Question What recommendations have been made by reputable experts to support long-term sustainable economic growth in the Arid and Semi-Arid Lands of Kenya?
- Bowell, A., Salakpi, E.E., Guigma, K., Muthoka, J.M., Mwangi, J., Rowhani, P., 2021. Validating commonly used drought indicators in Kenya. *Environmental Research Letters* 16, 084066.
- Carr, E.R., Thompson, M.C., 2014. Gender and Climate Change Adaptation in Agrarian Settings: Current Thinking, New Directions, and Research Frontiers. *Geogr Compass* 8, 182–197.
- Furusa, Z., Furusa, M., 2014. Women's coping and adaptation capacities in pastoralist communities in Africa: Dealing with climate variability and change. *Agenda* 28, 65–72.
- Grillos, T., 2018. Women's participation in environmental decision-making: Quasi-experimental evidence from northern Kenya. *World Dev* 108, 115–130.
- Macgregor, S., 2010. A stranger silence still: the need for feminist social research on climate change.
- Mushi, V.A., Makau, A.F., 2017. Climate Change Adaptation Strategies and Gender Inequality Among Pastoralists in Tanzania. *Beyond Agricultural Impacts: Multiple Perspectives on Climate Change and Agriculture in Africa* 147–168.
- Omolo, N., Mafongoya, P.L., 2019. Gender, social capital and adaptive capacity to climate variability: A case of pastoralists in arid and semi-arid regions in Kenya. *Int J Clim Chang Strateg Manag* 11, 744–758.
- Rao, N., Lawson, E.T., Raditloane, W.N., Solomon, D., Angula, M.N., 2019. Gendered vulnerabilities to climate change: insights from the semi-arid regions of Africa and Asia. *Clim Dev* 11, 14–26.
- Sandstrom, S., Strapasson, A., 2017. Socio-Environmental Assessment of Gender Equality, Pastoralism, Agriculture and Climate Information in Rural Communities of Northern Tanzania. *Journal of Gender, Agriculture and Food Security* 2.
- Venkatasubramanian, K., Ramnarain, S., 2018. Gender and Adaptation to Climate Change: Perspectives from a Pastoral Community in Gujarat, India. *Dev Change* 49, 1580–1604.
- Walker, S.E., Bruyere, B.L., Solomon, J.N., Powlen, K.A., Yasin, A., Lenaiyasa, E., Lolemu, A., 2022. Pastoral coping and adaptation climate change strategies: Implications for women's well-being. *J Arid Environ* 197.
- Wangui, E.E., 2014. Livelihood Shifts and Gender Performances: Space and the Negotiation for Labor among East Africa's Pastoralists. *Annals of the Association of American Geographers* 104, 1068–1081.
- Wangui, E.E., Smucker, T.A., 2018. Gendered opportunities and constraints to scaling up: a case study of spontaneous adaptation in a pastoralist community in Mwanga District, Tanzania. *Clim Dev* 10, 369–376.
- Yurco, K., 2018. Beyond the boma: A gendered approach to conceptualizing resource access in pastoral households. *Geoforum* 97, 343–351.