

Women's Access to and Control over the 5 Forms of Capital in Machakos Town Sub-County, Kenya

Angela Adhiambo Opondoh^{1*}, Dr. Geoffrey Muga², Catherine Kaluwa³, Jemimah Oduma⁴, Brigitte Bagnol⁵, Faduma Abdulahi Abdirahman⁶, KitogaByalungwa Kyotos⁷, Jeanette Nkatha Mbobua⁸, John Muchibi⁹, Beth Miller¹⁰, Meghan Stanley¹¹, Marieke Rosenbaum¹², Janetrix H. Amuguni¹³

^{1, 2, 8}Institute of Anthropology, Gender & African Studies, University of Nairobi, Nairobi, Kenya

¹Corresponding Author Email: [angellaopondoh\[at\]gmail.com](mailto:angellaopondoh[at]gmail.com)

+254720339501

^{3, 4}Department of Veterinary Anatomy and Physiology, University of Nairobi, Nairobi, Kenya

⁵Department of Anthropology, University of the Witwatersrand, Johannesburg, South Africa

^{6, 7}Department of Animal Production, Faculty of Veterinary Medicine, University of Nairobi, Kenya

⁹Nyayo Estate P.O. Box 475-00521 Embakasi Nairobi

¹⁰International Goat Association, Little Rock, Arkansas, USA

^{11, 12, 13}Department of Infectious Disease and Global Health, Cummings School of Veterinary Medicine at Tufts University, North Grafton, MA, USA

Abstract: *This mixed-methods study examines female small livestock owners' five forms of capital (personal, human, social, financial, and physical) in Kola and Kalama wards of Machakos Town sub-county, Kenya. Based on analysis of 39 individual interviews and 3 focus group discussions we analyze how the complex and dynamic position of smallholder women farmers at the household and community level is influenced by local culture and politics. Gender intersects with ethnicity, age, socio-economic status, education, and marital status to create patterns of disadvantage and marginalization from resources including decision-making. Men use all forms of violence to control most forms of capital. The only forms of capital which women have some control over are physical capital (small livestock such as chickens, goats) and social capital (groups, networks). Strategically, these women have developed "code of conduct" and that uses their strong social capital to achieve their goals. Women's groups provide opportunities for women to increase their power in their households and in their communities and social networks can be targeted for interventional research aimed at increasing access to livestock vaccines and veterinary services.*

Keywords: women's groups, livestock vaccines, veterinary services, gender intersectionality, marginalization, social capital.

Abbreviations: Newcastle disease (NCD), contagious caprine pleuropneumonia (CCPP), focus group discussions (FGD), individual interviews (II)

1. Introduction

Livestock keeping is an important livelihood for over 300 million people in sub-Saharan Africa (Dumas et al. 2018) and vaccines are the most cost-effective means to prevent livestock from diseases (Donadeu et al. 2019) such as Newcastle disease (NCD), which kills large numbers of indigenous chickens every year (Brigitte Bagnol, Development (INFPD), and FAO 2012; World Health 2006), and contagious caprine pleuropneumonia (CCPP), which can decimate goat populations (Iqbal Yatoo et al. 2019). In Africa, large and more valuable livestock such as cattle are mostly owned and controlled by men, while women have greater access to and control over small livestock such as chickens and goats, which are more easily managed and sold (Waithanji, Wanyoike, and Liani 2015). Chickens require less inputs and can be managed even with limited access to land, making it appropriate for supplying households with high-quality protein. It is estimated that 90% of rural families, especially women in most developing countries keep one or more poultry species (Gueye 2005). In Kenya, women constitute 70% of food producers and

providers (Kyotos et al. 2022), and control (some) livestock products (Njuki et al. 2013).

Women's limited access to information, technology and tools compared to men (FAO, IMF, and UNCTAD 2011) results in higher levels of poverty with women making up two-thirds of the world's poor smallholder livestock farmers (Paudel et al. 2009). The various challenges women smallholder farmers face include limited access to services, credit, technology, training and information regarding livestock keeping and animal health, which puts female livestock keepers at a higher risk of losing animals to NCD and CCP (B. Bagnol et al. 2013; Njuki et al. 2013). Some figures estimate the limited agricultural productivity of women to be approximately 20% to 30% less than their male counterparts (Kaluwa et al. 2022). Therefore, there is a need to estimate the level of access to and control over the five forms of capital/assets (personal, human, social, financial and physical) and identify and build upon women's strengths to design sustainable interventions.

Volume 12 Issue 7, July 2023

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

This paper examines the level of women smallholder farmer's access to and control over the five forms of capital/resources (personal, human, social, financial and physical) in Kola and Kalama wards of Machakos Town sub-county, Kenya.

1.1 Study Area

Kenya is a country that falls within the lowlands of the coastal regions of the Indian Ocean, and the highlands of the

Great Rift Valley, with a total area of 582,646 square kilometers that is administratively divided into 47 counties (Kenya National Bureau of Statistics et al. 2015). Agriculture is one of the major drivers of the economy, in combination with forestry, fishing, education, construction and finance (Kenya National Bureau of Statistics et al. 2015).

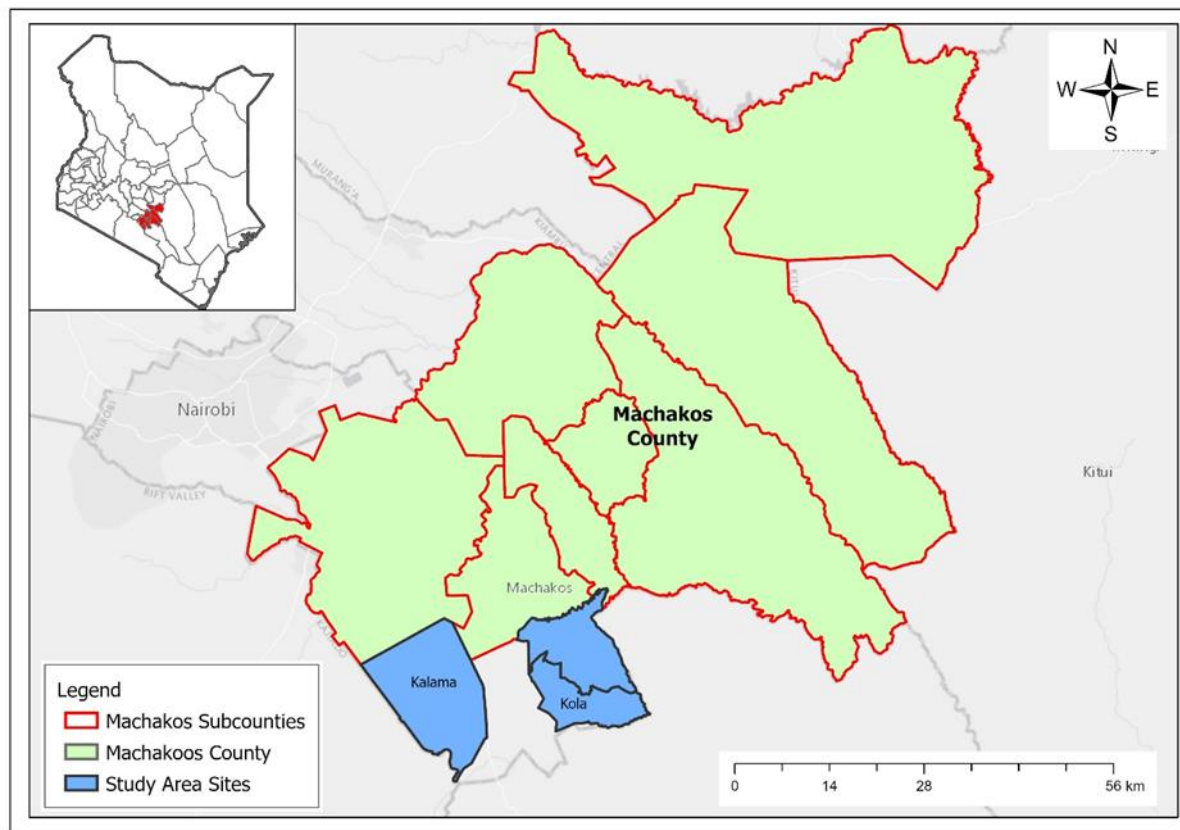


Figure 1: Map of Machakos County and Sub-Counties in Kenya. The wards of Kola and Kalama within Machakos town sub-county were selected for inclusion in this study.

The study took place in Kola and Kalama wards in Machakos Town sub-county, Machakos County, (Figure 1). In 2019, the Machakos Town sub-county's population was 170,606 (Kenya National Bureau of Statistics 2019). Machakos town is 63 km from Nairobi County, which includes the capital city. Machakos is a major indigenous chicken production area that provides an estimated 862,392 indigenous chickens per year to nearby Nairobi (Ipara et al. 2019).

2. Methods

2.1 Overview

This paper is part of an action research project that utilizes both qualitative and quantitative data research methods to support women's empowerment in livestock vaccine distribution, delivery and use in Rwanda, Uganda and Kenya (Mukamana et al. 2022; Kyotos et al. 2022; Gannaway et al. 2022; Bikaako et al. 2022; Tukahirwa et al. 2022; Kaluwa et al. 2022; Acosta et al. 2022; Abdirahman et

al. 2023). The objective was to give voice to women, and allow them to express their priorities, needs and desired opportunities for improving their lives, within the context of their roles as smallholder farmers.

2.2 Data Collection Methods

We analyze three focus group discussions (FGD) and 39 individual interviews (II) with farmers. A purposive sampling method was used by the district director who selected Kola and Kalama wards in Machakos Town sub-county, because study participants in the areas own between 10 to 100 indigenous chickens and/or less than 10 goats.

2.3 Focus Groups

We analyze and present data from two FGD with 18 women (10 chicken farmers and 8 goat farmers) and one mixed-gender FGD with 9 women and 4 men owning goats and/or chickens (Table 1). The discussions were conducted with at least two researchers, one who facilitated the conversation

while the other person took observational notes. All FGD were audio-recorded to facilitate transcription and analysis and included conversation on the cultural norms, beliefs, attitudes, stereotypes and systems that influence power relations and decision-making patterns. All FGD included the study of the 5 types of capital for women and men (social, financial, physical, personal and human) (Murray and Ferguson 2001).

Table 1: Number of men and women who participated in the focus group discussions in Kola and Kalama wards of Machakos town sub-county, Kenya, 2019

Research tool	Men	Women	Total
Focus Group			
1) FG 1 -Goat and chicken male and female farmers	4	9	13
2) FG 2 - Chicken female farmers	-	10	10
3) FG 3 – Goat female farmers	-	8	8

In relation to the participatory exercise on the access to (ability to use and benefit from specific resources) and control over (being able to make decisions over the use of resources you benefit from) resources (time, goods, services and means) (UN Women 2020), such as the five forms of capital, we used the following concepts and definitions (Murray and Ferguson 2001):

- 1) Human capital: individual skills, knowledge, education, health, and leadership, which when combined, allow populations to engage in promoting skill and employability-related outcomes through training and capacity building.
- 2) Social capital: connections that women can draw upon to achieve their goals, by building a foundation of networks and contacts through family support, friendships and political participation that enhances their support systems, making it easier for them to develop other assets.
- 3) Personal capital: self-esteem and self-confidence, related to the values and self-perception a person holds, and exerts a strong influence on personal motivation and transformation.
- 4) Financial capital: income, savings and financial security are the capital base which are essential for the security of a woman and her family, as well as her transformation and development.
- 5) Physical capital: natural resources, basic infrastructure, information, equipment and production inputs needed to support livelihoods through the provision of security, shelter and food.

After explaining with clear examples, the 5 forms of capital and the differences between access and control, participants were asked to rank their access to each of the five forms of capital on a scale from zero to ten. Zero represented the lower score and eight the highest score. For the female only FGD, each person was requested to give her opinion and then a consensus was sought. When participants had agreed the score was recorded on a radar diagram on the flip chart laid on the floor. The same exercise was carried out in relation to the control over the five forms of capital. The average score of the two female-onlyFGD was then calculated.

2.4 Individual interview

Thirty-nine interviews were carried out with male and female small holder farmers and key informants. Sixteen chicken and goat farmers (7 men and 9 women) were selected from the FGD and twenty-three people (14 men and 9 women) belonged to the government, the private sector, the local leadership and the formal and informal community-based organizations at different administrative levels such as Kola and Kalama wards in Machakos Town sub-county, at Machakos Town sub-county, at Machakos County and at a National level (Table 2).

Table 2: Number of men and women who participated in the individual interviews in Kola and Kalama wards of Machakos town sub-county, Kenya, 2019

Research tool	Men	Women	Total
Individual Interviews			
1) Goat and chicken farmers	7	9	16
2) County and national stakeholders	14	9	23

*Stakeholders include veterinary offices, agrovet shop owners/managers, vaccine distributors and village leaders.

2.5 Data Analysis

The qualitative audio recording data from FGD and II were transcribed verbatim in the language of the interview, and the transcripts were translated into written English text. After each verbatim transcription, the transcripts analyzed using codes developed through the inductive approach analysis process (Creswell 2009), by reading and re-reading through the transcripts (Orodho 2003; Resnik 2011). The researchers developed a codebook (Shamoo and Resnik 2009). These codes were then applied to the transcripts, which were then reviewed to ensure there was agreement in the coding. We analyzed the qualitative and quantitative information given in the women only focus group (FG2 and FG3) while we used the conversation resulting from one focus group with men and women to include the men point of view (Table 2).

2.6 Ethical issues

This study was conducted within a bigger project whose ethical approval for human subjects' research was obtained locally in Kenya through the country clearance National Commission for Science, Technology and Innovation#NACOSTI/ P/19/80106/28666; ethical approval via University of Nairobi Faculty of Veterinary Medicine Biosafety, Animal Use and Ethics Committee #FVM BAUES/2019/194) and through theTufts University Social Behavioral & Educational Research Institutional Review Board (#1907033) prior to commencement of research activities. The researcher informed all the participants of the purpose of the study, and explained the procedures, risks and benefits using the informed consent form. The participants were made aware of the fact that participation in the study was voluntary and that they could withdraw from the study at any stage.

3. Results

The women assigned men an average of 7.5 or higher out of 10 for control over personal, human, social, financial and physical capital, while they scored themselves, lower than men, ranging from an average of 4 to 6, for access to and control over the same types of capital. Women scored higher than men for access to (7 for women vs 5.5 for men) and control over (5 for women vs 4.5 for men) **social capital** (Table 3, Figure 2-3). A detailed analysis of the results is developed below looking first at access to and then at control over capital.

Table 3: Women's perception of access to and control over the 5 forms of capital by men and women (18 women from FG#2 and FG#3)

	Personal capital	Human capital	Social capital	Financial capital	Physical capital
Access by women	6	4	7	5.5	6.5
Access by men	6.5	6.5	5.5	8	5.5
Control by women	6	5.5	5	5	4
Control by men	7.5	7	4.5	7.5	8.5

3.1 Social capital is women's capital: Comparing access to the five forms of capital by men and women from the point of view of women

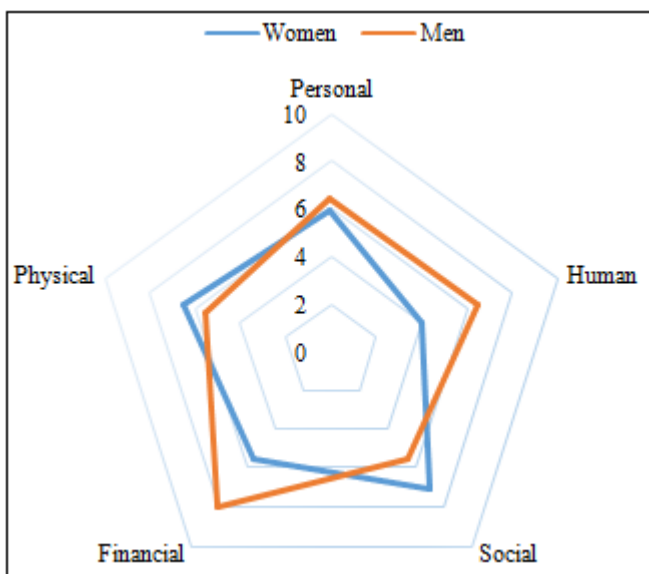


Figure 2: Comparing access to the five forms of capital/asset by men and women from the point of view of 18 women from FGD#2 and FGD#3

Women tend to have more access to social and physical capital than men while men over perform in the other three forms of capital (Figure 2). With regards to **financial capital**, women expressed clearly their lack of access to money (5.5 for women versus 8 for men). They explain how the lack of money impacts their poultry rearing activities and their ability to treat and prevent diseases:

“As for my part, if I wake up in the morning, and I find that my chickens are sick, I would look for “kiluma” or “kegonga” (types of herbal medicines), and then I would wait for my husband. But sometimes, I would have an option of selling the “sisal ropes” (ropes for tying goats on a tree for zero grazing) that I have

made, so that I can be able to buy some medicine. However, the problem would be that I do not have the knowledge on how to administer the medicine.” (FG#1)

Women discussed their lack of money and their inability to look for remedies other than herbal medicine. They indicated that they often need to refer to their husband for access to money.

For access to **human capital** women ranked themselves 4 on the scale of 1 to 10 and ranked men at 6.5. In Machakos County 36.9% of women completed the primary level of education and 16.5% completed secondary education, compared to 31.6% and 24.3% of men. (Kenya National Bureau of Statistics et al. 2015), which may partially explain the difference. This situation can be associated with cultural norms prioritizing girls' marriage over their education, which negatively impacts their ability to obtain the knowledge and skills required to raise healthy poultry and goats, access vaccines and veterinary services for their livestock, and attend technical livestock trainings (Hillenbrand and Miruka 2019), as participants explained:

“The big challenge for us, as women farmers, is the lack of knowledge. When our animals are sick, we are unable to identify what is happening with them, because we don't have any idea about goat's diseases. The idea of being trained is better, because as a group we can buy our drugs and treat our animals.” A woman sitting by her side added: “If we have the opportunity to be trained, we can do the work. The big problem for us is the lack of education.” The female facilitator inquired, “What are the obstacles that limits women to attend those trainings and education?” She answered: “We don't have that freedom, most of the time men say that domestic activities are ours, like goats, chicken, field, and children. In my case, I am a widow but I have a great charge over my head. Most of the time I miss time to go out to avoid the devastation of my household planning”. (FG#3)

Women emphasized the fact that they have more access to **physical assets** than their male partners (6.5 for women versus 5.5 for men), because they do most of the work of taking care of their households, families, livestock and farmland in their community, one woman explained:

“Men don't know what happens in the farm. Even when the goat gives birth, women are the ones who know everything. We even spend most of our time in the field in the total absence of our men” (FG#3).

It is interesting to analyze what is considered in the feminist literature as a triple burden (Boserup, Tan, and Toulmin 2013; Moser 1989) of women who carry most of the productive, reproductive and community work as a form of capital. Indeed, women's unique experiences as mothers and caregivers, can be seen according to Held (1993), as a different sort of power of a person who empowers others and promotes individual growth through mothering. But access to resources is indeed the possibility to expand one's capabilities if it is not exercised under violence. Amartya

Sen and Martha Nussbaum's notion of "capabilities" is interesting here because it integrates the subjective dimension of quality of life (Nussbaum and Sen 1993; Dreze and Sen 1999; Sen 2007). Nussbaum (2003: 79) considers that "not having one's emotional development destroyed by fear, by too much anxiety, or by traumatic events of abuse or neglect" should be constitutive of people's capacities. Development, from Sen's point of view, consists in removing the constraints that limit people's choices and consequently do not allow them to exercise their rational action. Development is conceived as the increase of freedoms, of options from which to choose.

Concerning **access to personal capital** (6 for women versus 6.5 for men), a woman explained that men and women have a more equal level of access:

["I would rate us with five marks, because I believe that everyone has a motivation within their hearts to succeed in whatever they put their minds into." Immediately, another woman shrieked with laughter, "As for me, I would give us an eight, because every morning, I must wake up to prepare my children for school, and my husband for the day ahead. However, a man engaged in the discussion with a different opinion, "For the men, you know that we are usually behind in our work, because we find that our wives have already woken up as early as five in the morning, to prepare the children for school, while we are still sleeping. She will then open the chicken coop for them to scavenge around the homestead, take care of her domestic chores, and prepare the husband for the day, even though he has nowhere to go. The man will go roaming in the village and come back in the evening expecting to find the meal ready and heads to bed, while the wife will stay up late, preparing for tomorrow morning. Therefore, I would suggest that we give the women a score of six and three for the men" (FG#1).

The above participants seem to consider that because a woman is constantly caring for the household and its members, she naturally has more motivation and assertiveness, while men are described as roaming in the village without aim and sense of self-esteem. Another man, developed his point of view regarding access to **social capital**:

"For the men, I would award one mark, since, as an example, you could go through ten houses in the village and find at least one woman from each of the household is in a women group. However, you could find very few to no men in the same ten houses, are in a men social group" (FG#1).

3.2 Women have more control over social capital than other forms of capital: Comparing control over the five forms of capital by men and women from the point of view of women

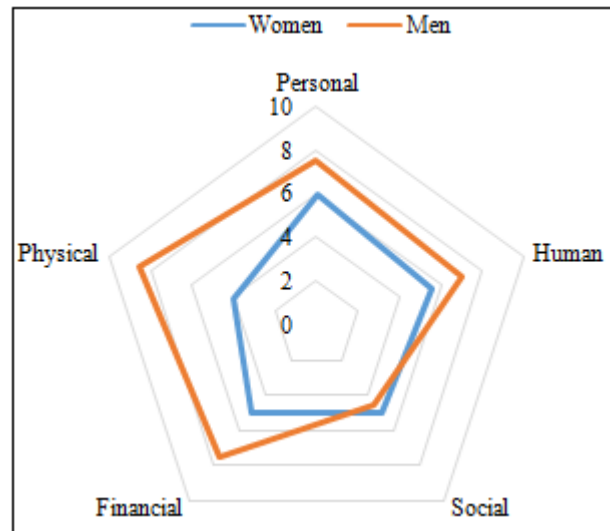


Figure 3: Comparing the control over the five forms of capital/asset by men and women from the point of view of 18 women from FGD#2 and FGD#3

After the discussion on access to the five forms of capital, the exercise was repeated by asking about **control over the same five forms of capital**. Figure 3 illustrates that men had a higher score than women with regards to control over financial capital (5 for women, 7.5 for men), physical capital (4 for women, 8.5 for men) human capital, (5.5 for women, 7 for men) and personal capital (6 for women, 7.5 for men). Women only scored higher on control over social capital (5 for women, 4.5 for men).

In the following extracts, women discuss how **financial capital** is mainly under the control of men, and how women deal with the situation (5 for women, 7.5 for men):

The male facilitator asked the group: "Who has control over the money, I mean who has decision?" A woman answered: "The man gives me my part, and this is what I use for the household. The facilitator inquired: "And the money that you got from merry-go-round?" She replied: "Before I go to collect my money, my husband must know the amount that I will get." (FGD#1)

The importance to consult the husband was also expressed in the following conversation:

The female facilitator asked: "Why can't women make the decisions on their own to own their own goat or chicken, and why can men do what they want, but women cannot?" A woman answered: "This is because the man is the head of the house." Then the female facilitator inquired, "Why are women not the head, is it because they are less intelligent, less strong or working less?" The woman replied: "For example, if I decide to sell a goat without consulting the man, I might be beaten and chased away from my home, because the man assumes that I am using the income from the sale for my own personal needs, and not for the benefit of the home." (FGD#2)

These statements echoes data published in the demographic health survey (2015) indicating that in the Eastern region, where Machakos county is situated, only 32.6% currently married women make independent decisions on how their cash earnings are used (Kenya National Bureau of Statistics et al. 2015: page-275).

The notion of the head of household, was often brought into the discussion when commenting on the capacity to control the different forms of capital. As the “head” of the household, the man is often considered to have the right and obligation control over everything related to the household, including the ownership of assets. Although the Kenyan Constitution (2010) recognize equality as a national value, local values and practices tend to assign to the men a special role as the head of the household, a situation that has a lot of implication about decision-making power over resources.

Gender based violence is latent and women expressed their fear of male aggressivity and use of physical violence against them if they decide to sell a goat. The control of men over all assets of the household seems to be established by means of violence, a situation that according to the participants is rooted in their “tradition and culture”, as a 46 years old male farmer, married with five children (II#14) emphasized the fact that he is in control of everything as the head of the HH.

The female facilitator tried to clarify: “Therefore, it is not only a sign of respect and lack of confidence, there is fear also in making decisions. What I am trying to understand from you is how do you explain these differences, who made these rules that men need to be the head, and women always need to fear the opinion of the man?” The female participant said: “According to our traditions and culture, that is the way it has always been. (FGD#2)

Women explained the logic about male headship, male control and ownership of female acquisitions. To a question about the possibility for a woman to sell the result of her harvest one woman replied:

“No, they have to discuss and agree on it with their husbands first. Another woman explained, “Here in Africa, most of the time women are the ones who buy goats. And this is after they get their money either from merry-go-round, or their own activities. But when it reaches at home, men become owners. A man said: kuku, mbuzi, ngombe, shamba nabibi yote niyangu,” (goats, chicken, land, children and wife are all mine). All the group laughed. But, a farmer added, “It affects and disturbs us too much. Women suffer so much from that problem.” (FGD#1).

Bourdieu (1998) termed symbolic violence non-physical forms of violence that constitute the system of oppression that reproduces and legitimizes gender inequalities, and the asymmetry of power between men and women. Symbolic violence is an embodied violence, in the sense that women seem to self-depreciate, and to hold men to a higher standard than themselves, justifying a man hitting or beating his wife

for any reason. Such situations are barriers to women access and control over resources and knowledge. It impacts all aspects of life such as livestock production or health care and influence women’s access to rights and opportunities as well as her general well-being. Indeed, among women aged between 15-49 from the Eastern region where Machakos county is located, only 6% of women owned their own house and only 5.4% of women owned their own land (Kenya National Bureau of Statistics et al. 2015). When we discussed the control men and women have over **physical capital**, a woman reiterated the same concept of male overall control:

Men have control over everything. Women are not allowed to do anything without consulting her man. Men say that everything is his, including goats, field, trees, children and his wife. (FGD#2)

A similar testimony was given by another lady although she observed that in some household such as hers, decision making is shared:

When it comes to the family house, for example, I construct a flat building, I cannot say it belongs to me, it automatically belongs to my husband. But when it comes to the small things, such as the chicken, those I can access without his permission, and even slaughter one for my visitors, without waiting for my husband’s approval. But I cannot decide to slaughter a goat, I have to ask for his permission. Therefore, the big things belong to the men, while the women can be able to easily access the small things. I would therefore suggest the men to be awarded eight marks and women to be given three marks. (FGD#3)

Female control over items such as small livestock, and less control over a building seems to be a tendency. However, households are not homogeneous in terms of decision-making power, and they have different ways of functioning and processing decisions. Women’s behavior and way to communicate with men include a specific controlled tone of voice, words and topics:

“If a woman says that she is the owner of the cow, it is not a sign of respect. That is the reason we humble and bow a little to our husbands. Even if we got money from a group we don’t show or say that it is ours, because it will be a sign of not respecting the man. A female participant commented: “If you are talking to a man proudly, he will beat you. But if you talk softly, with sweet words, then he will listen to you. That’s why we need to be taught how to communicate.” Another woman added, “There are also those women who take advantage of that, they stay at home waiting for their husbands to give them everything.” Participants laughed. (FGD#3)

Some women seem to play the part of a person lacking self-esteem and power and “stay at home waiting for their husbands to give them everything” in a mist of performance and submission to the potential gender violence (verbal and

physical) that they might experience if behaving differently. Participants' laughter at this observation, tend to indicate that women are aware of their domination, and are maneuvering to try to get the best out of this situation. Women fight to maximise their gains and negotiate their space and power. By using this explicit code of conduct, women exercise their capacity to manoeuvre through life's vicissitudes. This can be seen as a female form of resistance, the cultural response to the constraints exercised on women.

Speaking of the changes in marital life, participants indicated that access and control to **physical capital** may vary according to a woman's age (young and old), marital status (single, married, widow, separated) or the level of education however men had higher control (average of 4 for women versus 8.5 for men).

The facilitator asked about the possibility for a widow to inherit from her husband. A farmer said, "Women don't have any right to inherit. When you don't have your name there, my husband's family will take everything." Another woman added, "But, it also depends. Women who are trained are very wise. Let me talk about Hellen. She had been trained long ago, so she became empowered, and no one came to take whatever her husband left. So, all women should have been prepared earlier, when they have documents and enough knowledge, no one can rob them. But if they stay ignorant, even their children can be sold after their father's death. In case you are a widow, your daughter has to get married. In this case, when a woman is weak, only uncles discuss and get dowry that they will share among themselves, but when she is empowered, she will insist on her rights."

The male facilitator inquired: "Do you think it is possible to change the traditions and culture?" A female participant replied, "Yes, it is possible. For example, when a woman becomes a widow, she becomes the head of the family, and can be able to make all the decisions in the house. Another example is that in the olden days, men used to wait for women to do all the house chores, while in recent times, both the men and women share the household chores. It is like automatically." (FGD#3).

Education and legal written document appear in this statement as a barrier against discriminatory practices. The importance of education and training is also highlighted during the conversation about **human capital**. In most cases, the men were the ones controlling (5.5 for women versus 7 for men). A female farmer commented:

"We need training, this will strengthen women and make them wise and able to convince even their husbands to give them control. And men know that women do a lot of work but don't give them over control, because in their nature, men are very proud and don't want to release control". (FGD#3).

Men's refusal to give access to knowledge and training is seen here as a strategy to maintain his authority over women. This has contributed to very few women being qualified and licensed to handle livestock vaccines, as clarified by a male veterinary medicine directorate interviewee (II#20) who highlighted the need to train women on animal health to be licensed to handle and distribute livestock vaccines.

Interestingly, although women tend to be seen as having low self-esteem and a lower status in society, which relates to individual self-esteem, personal motivation, self-confidence, self-perception, assertiveness and emotional wellbeing the data collected do not express this self-evaluation. The women touched on how small the gap between men and women is on control over **personal capital** (6 for women versus 7.5 for men), because men and women interact in different spheres, and each one has control over that gender niche of resources.

The facilitator inquired: "Do you have control over yourself, do you have the confidence to make decisions by yourself?" A lady replied: "as women, we will ask for permission to do something, however, we are sometimes motivated to carry out our activities without asking for permission, with a little worry and behind our husband's backs. We get the courage to make sure that whatever we are doing, benefits our families and the homestead." (FGD#1)

Women have more control over **social assets** compared to men (5 for women versus 4.5 for men). Both the male and female interviewees mentioned women's participation in different self-help groups that help them socialize, share and get support in times of need, both financially and emotionally as well as educational. However, men do not seem to have the same involvement in collective activities, and were not referred to as belonging to groups (social capital) in such a high proportion as women do. Brody et al. (2015) argue that women's groups have positive effects on women's economic empowerment by acting as a source of collateral asset that provide channels for borrowing cash and independent financial decision-making in group solidarity, and an important venue for social networks and to deliver life skill trainings. However, men can forbid women to participate in meetings, or to go out of the house to participate in any activity. As one of the male participants stated:

The part we play as men is to allow women to attend their group meetings, and sometimes, the men assist the women with the money they need to contribute to their meetings. Therefore, I think that there is a balance, when the women decide to join the groups, and how we as men are able to assist them. This makes it 50/50.

Women explained that men can interfere in group's participation and forbid women to get involved:

"Yes, we even have women who abandon our group because of similar problems." Another

woman explained: “But this also depends on the kind of men. When husbands see the advantages of their wives to belong to any group, they are very motivated because their wives bring food to the family. And men take it as an advantage. In this way, men are ready to support even their wives to go to those women groups. Furthermore, when women are trained and reach the point where they show improvement in their business, farming activities, or any other work, men appreciate their group so much. But when these women don’t show any improvement, men become impatient and forbid them to go for training. Men even ask their wives to show them proof of what has improved, since they joined the groups or started attending any kind of training”. FGD#3

As a 36 years old female farmer, married with five children (II#8) indicated that the control men have over the groups can go further into the groups themselves, especially mixed groups that are formed by both women and men, and the men usually become the leaders who have control over the groups:

3.3 Women have more access than control over social capital: Comparing access to and control over the five forms of capital by women and from the point of view of women

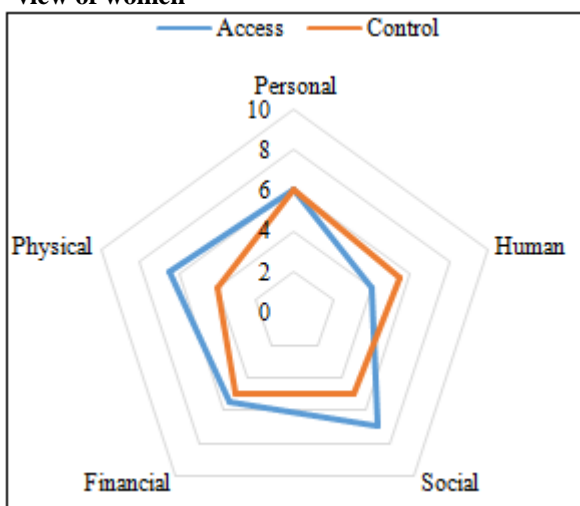


Figure 3: Comparing women’s access to and control over the five forms of capital/asset from the point of view of 18 women from FGD#2 and FGD#3

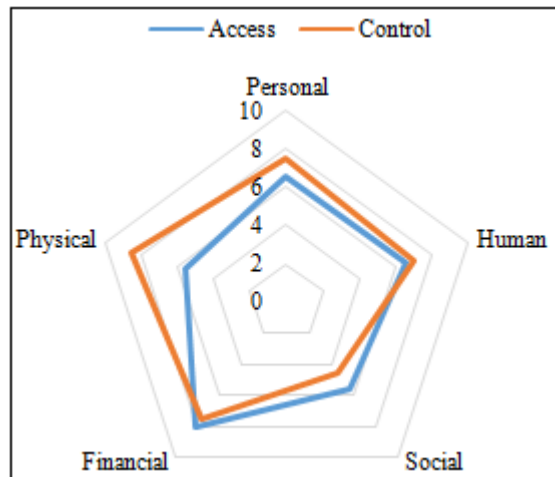


Figure 4: Comparing men’s access to and control over the five forms of capital/asset from the point of view of 18 women from FGD#2 and FGD#3

We analyze and discuss the difference between men and women’s access to and control over the five forms of capital from the point of view of women. Figure 3 and 4 display how women perceive both women-or-men’s access to and control over the five forms of capital. While women scored between 4 and 6 for their access to and control over the other forms of capital, access to social capital received a score of 7. Women strive to negotiate their participation in groups and social encounters with their partners. But they identified this capital as “their space”, a female space of socialization often in female dominated groups, dealing with social, psychological and economic issues.

Women, in their analysis of the level of access and control men have over the five forms of capital (Figure 4), indicate a score between 6 and 8 except in relation to social capital which was scored 5.5 for access versus 4.5 for control.

Although women tend to have more access than they have control over the five forms of capital (human, social, personal, physical and financial), amid adversity and constant negotiation with their male partners, they manage to have relative control over most of the forms of capital. Social capital is the asset women have a higher level of access to and control over, which seems to characterize women’s privileged space in society, and their interest in sharing and carrying out activities with other women.

3.4 Merry-go-rounds and groups potential: Women’s strength is social capital, and specifically, belonging to groups

Common themes emerged from individual interviews (II) regarding the different strengths and challenges limiting smallholder women farmers from fully engaging in and contributing effectively to livestock keeping and vaccination. These included: lack of money, difficulties accessing education, limited access to financial income for purchasing livestock vaccines, and lack of training and access to licensing, all of which prevents women from engaging in vaccine commerce, the formation of groups by women for social support, government and NGO community trainings of women and opportunities for women to

participate more along the vaccine value chain. Table 4 was developed based on the 39 II carried out and highlights strengths and barriers to women's participation in the

vaccine value chain. The number of times a specific theme was mentioned is indicated as well as a characteristic quote illustrating the theme.

Table 4: Barriers and strengths

Barriers	N ^o	Representative quote
Women experience limited access to financial income to purchase livestock vaccines or starting an agrovet business	8	"Especially in Machakos, it's the rent of these houses [to start an agrovet business] are expensive." (II#36)
Lack of knowledge, training, access to licensing, and infrastructure needed to support a cold chain prevent women from engaging in vaccine commerce	6	Interviewer: "which kind of licensing is required to buy and sell vaccines?" Respondent: "you have a training in animal health, then you must have a premise that will be inspected and confirmed that it meets the requirements for example if you want to deal with vaccines before we give you a license apart from being qualified and retained by the Kenyan veterinary board, we will have to confirm that you have the storage facilities to maintain the cold chain before we license you." (II#20)
Gender discrimination, sexual harassment prevents women from accessing education and working in the community	5	"Those things [gender bias] happens a lot. Most of the people [women] don't want to work because maybe these bosses will want to sleep with them, in fact there was a time I left job because of such." (II#36)
Women rely on herbal medicine to treat livestock because they do not have the money to buy vaccines	2	"Because of the cost of these drugs and the agro-vets is very far in our area we just use the local plants like alo-vera, we used it to insert in the water where the chicks are drinking from, and I also give local cow milk [to prevent disease]." (II#13)
Strengths	N ^o	Examples
Formation of groups by women for social support and financial assistance	8	"In table banking, we do some small contributions and after attending a good amount, this helps us to borrow money from banks. When we have this money, we buy goats and chicken to increase our farm." (II#4)
Government and NGO community trainings of women at the village level	4	"In that group we do table banking or merry go round. We are many ladies around 80 women in the group. We are so many. When we meet, we sometimes have trainers who train the women on a topic whether on chicken or goat for the members to acquire the knowledge so that they practice when they go back home." (II#33)
Opportunities for women to participate more along the vaccine value chain	3	"I think they can get involved as farmers for example those ones who are involved in poultry keeping, then there are those who are involved in sale because the companies that make vaccines now are many so more women can actually be engaged there." (II#35)

Findings from the 39 II conducted in this study showed that 10 participants (8 female, 2 male) commented on the importance of social groups, as exemplified by one statement from a female farmer during a conversation:

"There is that group of bee-keeping, merry-go-round, group of paying fees, group of selling loaves, chicken group and goats' group. I am in three groups the treasurer of the whole clan, I'm a leader of women group in our church." (II#2).

Women farmers have some strengths when they come together to form groups for social support and financial assistance but face numerous challenges in livestock keeping and access to vaccination (Table 4), including a lack of access to training and education and a lack of resources to engage in vaccination. One female farmer explained:

"...If we have the opportunity to be trained, we can do that [livestock production] work. The big problem is the lack of education for us. Men have a lot more opportunities than women. Most of the time men have that opportunity to walk around, but women do not have it. From the government, there are a lot of men vet officers than women.

Stakeholders interviewed for this study believe women's groups can be supported to improve knowledge about and access to livestock vaccines and veterinary services. Previous research from developing countries on women's groups describes them as "their space" to socialize,

according to prevailing communal values and social structures (Evans 2002). In these groups women use their collective agency to deal with social, psychological and economic issues (Ibrahim 2006). Women's groups are a common African institution where women use collective agency to augment their limited power at the household, local and national level (Oino, Auya, and Luvega 2014). Organized groups of women working together have been observed throughout history. During colonial times, women were organized into small groups and exploited in forced agricultural labor (Wambua 2013). After independence, these groups evolved into women's groups who participated in table-banking (Asetto 2014). Table banking are self-created groups for the purpose of saving and borrowing money. Some can be formalized into rotating savings and credit associations (ROSCAs) or Savings and Credit Cooperatives (SACCOs) and can borrow from banks or savings and loan institutions (Kirori 2015). This is where social capital plays a crucial role in mobilizing rural finance for women groups in Kenya, that support the formation of group-based savings and loan associations, offering the most basic savings and lending services within small groups, which provide women with the money needed to purchase vaccines and pay for veterinary services (Kirori 2015). Therefore, women have more access to and control over social capital compared to men, as one smallholder female chicken farmer, who is a leader of a self-help group, explained during an interview: women's groups can provide a platform to train women on livestock management and vaccination. However, participation in social activities,

including women's groups, is mediated by male heads of household.

4. Conclusion

This study assessed socio-cultural beliefs, norms and practices that limit women's access to and control over land, livestock, and the five forms of capital (personal, human, social, financial and physical).

Results demonstrate that although women have relevant access to most resources, they have limited decision-making power over capital compared to men. To achieve gender equality (SDD5) this must be addressed in all sectors of society. The barriers that prevent smallholder women farmers from having access to vaccines mainly relate to a set of access to and control over resource at the household and community levels. They lack knowledge on the importance of livestock vaccine is a human capital resource, which the women have limited access to, therefore, they need authorization from their husbands, which is a form of personal capital resource as lack of self-confidence to access some money as financial capital resource for purchasing animals and vaccines, in order to have full ownership and decision-making power over the animals as physical capital resource. Women exceed men with respect to social capital. They belong in merry go around saving and loan groups (Maziya 2018; Donadeu et al. 2019) but this has not yet been translated into an increased access to animal health services (Dione et al. 2019).

Women's access to and control over resources varies according to their level of knowledge, education, the marital status (married or widowed), and their belonging to a group. Such aspects are seldomly considered in vaccination and other veterinary activities.

Participants indicated that there is a "code of conduct" applied by women on how to behave around men and show them the socially accepted respect in order to manoeuvre through life's vicissitudes and try to avoid violence. This "code of conduct" can be seen as a female form of resistance, the cultural response to the different forms of discrimination against women.

This study provides contextual data to support targeting women's groups for interventional research aimed at improving women's access to livestock vaccination and veterinary services. This is further supported by another study conducted in Kenya, which found that although goat and indigenous chicken production are slow cash generating activities, they could generate the income needed for smallholder women farmers who are organized into women's groups, to fund the distribution of educational information about livestock vaccines, and form linkages to vaccine supply sources that could be used to purchase vaccines to increase the productivity of their animals (Munyasi et al. 2012). Projects aiming to contribute to women's empowerment and to elevate women's productivity in agriculture as a means of improving the livelihoods of communities should consider women's groups as stable entry points for test models that could be scaled up and expanded to other communities if successful.

Acknowledgments

I would like to dedicate special thanks to the University of Nairobi and the IDRC- Gender and Livestock vaccine Innovation fund for funding the SheVax+ project, and the whole SheVax+ team for their kind support and useful guidance for helping me to successfully write my manuscript under the project carried out in Machakos Town sub-county, Kenya. The Livestock Vaccine Innovation Fund is supported by the Bill & Melinda Gates Foundation (BMGF), Global Affairs Canada (GAC), and Canada's International Development Research Centre. The views expressed herein do not necessarily represent those of IDRC or its Board of Governors.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

All authors have contributed significantly to this work. Conceptualization, A.A.O., J.O., C.K., B.B., B.M., M.R. and J.H.A.; methodology, A.A.O., J.O., C.K., B.B., B.M., M.R. and J.H.A.; validation, A.A.O., J.O., C.K., F.A.A., K.B.K., J.N.M., J.M., B.B., B.M., M.R. and J.H.A.; formal analysis, A.A.O., J.O., C.K., B.B., B.M., M.R. and J.H.A.; investigation, A.A.O., J.O., C.K., F.A.A., K.B.K., J.N.M., J.M., B.B., B.M., M.R. and J.H.A.; resources, J.H.A.; data curation, A.A.O.; writing—original draft preparation, A.A.O., J.O., C.K., B.B., B.M., M.R. and J.H.A.; writing—review and editing, A.A.O., J.O., G.M., C.K., F.A.A., K.B.K., J.N.M., J.M., B.B., B.M., M.S., M.R. and J.H.A.; visualization, A.A.O., M.S. and J.H.A.; supervision, J.O., C.K., G.M., J.M., B.B., B.M., M.R. and J.H.A.; project administration, J.O., C.K., M.S. and J.H.A.; funding acquisition, J.H.A. All authors have read and agreed to the published version of the manuscript.

5. Funding

This work was supported by a grant from Canada's International Development Research Centre, Livestock Vaccine Innovation Fund (Grant No. 109061-001 and 109061-002) to Tufts University and Africa One Health University Network (AFROHUN), under a project titled "Hearing their voices- Action research to support women's agency and empowerment in livestock vaccine distribution, delivery and use in Rwanda, Uganda, and Kenya." The Livestock Vaccine Innovation Fund is supported by the Bill & Melinda Gates Foundation (BMGF), Global Affairs Canada (GAC), and Canada's International Development Research Center (IDRC). The views expressed herein do not necessarily represent those of IDRC or its Board of Governors. LVIF website project link: <https://www.idrc.ca/en/research-in-action/advancing-womensparticipation-livestock-vaccine-value-chains> Dr. Rosenbaum's contributions to the project were supported in part by the National Center for Advancing Translational Sciences, National Institutes of Health (NIH), Award Number KL2TR002545. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

References

- [1] Abdirahman, Faduma Abdullahi, Raphael Githaiga Wahome, Catherine Kaluwa, Jemimah Oduma, Jynette Jynette Nkatha, Angella Adhiambo, Kitoga Byalungwa Kyotos, Brigitte Bagnol, Marieke Rosenbaum, and Janetrix Hellen Amuguni. 2023. "Gender Barriers And Opportunities Along the Newcastle Disease Vaccine Value Chain In Machakos Town Sub-County, Kenya." *Tropical and Subtropical Agroecosystems* 26 (1).
- [2] Acosta, Daniel, Nargiza Ludgate, Sarah L. McKune, and Sandra Russo. 2022. "Who Has Access to Livestock Vaccines? Using the Social-Ecological Model and Intersectionality Frameworks to Identify the Social Barriers to Peste Des Petits Ruminants Vaccines in Karamoja, Uganda." *Frontiers in Veterinary Science*, 160.
- [3] Asetto, Florence. 2014. "Effect of Table Banking on Investment Decisions of Small and Medium Enterprises in Nairobi County." PhD Thesis, University of Nairobi.
- [4] Bagnol, B., R. G. Alders, R. Costa, C. Lauchande, J. Monteiro, H. Msami, R. Mgonezulu, A. Zandamela, and M. Young. 2013. "Contributing Factors for Successful Vaccination Campaigns against Newcastle Disease." *Development* 25: 6.
- [5] Bagnol, Brigitte, International Network for Family Poultry Development (INFPD), and FAO. 2012. *Advocate Gender Issues: A Sustainable Way to Control Newcastle Disease in Village Chickens*. International Network for Family Poultry Development Milton, Australia.
- [6] Bikaako, Winnie, Patricia Kabahango, Kenneth Mugabi, Agnes Yawe, Kisembo Stallon, Elizabeth Kyewalabye, Lillian Tukahirwa, Dean Kusiimakwe, Meghan Stanley, and Beth Miller. 2022. "Breaking Institutional Barriers to Enhance Women's Participation in and Benefit from the Peste Des Petits Ruminants and Newcastle Disease Vaccine Value Chains for Sembabule District of Uganda." *Plos One* 17 (10): e0270518.
- [7] Boserup, Ester, Su Fei Tan, and Camilla Toulmin. 2013. *Woman's Role in Economic Development*. Routledge.
- [8] Creswell, John W. 2009. "Research Designs: Qualitative, Quantitative, and Mixed Methods Approaches." *Callifornia: Sage*.
- [9] Dione, Michel Mainack, Ibrahima Traoré, Hamidou Kassambara, Ahmadou Noh Sow, Cheick Oumar Touré, Cheick Abou Kounta Sidibé, Amadou Séry, Awa Sadio Yena, Barbara Wieland, and Martin Dakouo. 2019. "Integrated Approach to Facilitate Stakeholder Participation in the Control of Endemic Diseases of Livestock: The Case of Peste Des Petits Ruminants in Mali." *Frontiers in Veterinary Science*, 392.
- [10] Donadeu, Meritxell, Nick Nwankpa, Bernadette Abela-Ridder, and Baptiste Dungu. 2019. "Strategies to Increase Adoption of Animal Vaccines by Smallholder Farmers with Focus on Neglected Diseases and Marginalized Populations." *PLoS Neglected Tropical Diseases* 13 (2): e0006989.
- [11] Dreze, Jean, and Amartya Sen. 1999. "India: Economic Development and Social Opportunity." *OUP Catalogue*.
- [12] Dumas, Sarah E., Abena Maranga, Patrick Mbullo, Shalean Collins, Pauline Wekesa, Maricianah Onono, and Sera L. Young. 2018. "'Men Are in Front at Eating Time, but Not When It Comes to Rearing the Chicken': Unpacking the Gendered Benefits and Costs of Livestock Ownership in Kenya." *Food and Nutrition Bulletin* 39 (1): 3–27.
- [13] Evans, Peter. 2002. "Collective Capabilities, Culture, and Amartya Sen's Development as Freedom." *Studies in Comparative International Development* 37 (2): 54–60.
- [14] FAO, IFAD, OECD IMF, and WFP UNCTAD. 2011. "The World Bank, the WTO, IFPRI and the UN HLTF, Price Volatility in Food and Agricultural Markets: Policy Responses." *Policy Report to the G20 Group of Nations*.
- [15] Gannaway, Tess, Denis Majjambere, Mary Kabarungi, Liberata Mukamana, Fidele Niyitanga, Janna Schurer, Beth Miller, and Hellen Amuguni. 2022. "Using Outcome Mapping to Mobilize Critical Stakeholders for a Gender Responsive Rift Valley Fever and Newcastle Disease Vaccine Value Chain in Rwanda." *Frontiers in Global Women's Health*, 38.
- [16] Gueye, E. F. 2005. "Gender Aspects in Family Poultry Management Systems in Developing Countries." <https://doi.org/10.1079/WPS200440>.
- [17] Held, Virginia. 1993. *Feminist Morality: Transforming Culture, Society, and Politics*. University of Chicago Press.
- [18] Hillenbrand, Emily, and Maureen Miruka. 2019. "Gender and Social Norms in Agriculture: A Review." 0 ed. Washington, DC: International Food Policy Research Institute. https://doi.org/10.2499/9780896293649_02.
- [19] Ibrahim, Solava S. 2006. "From Individual to Collective Capabilities: The Capability Approach as a Conceptual Framework for Self-Help." *Journal of Human Development* 7 (3): 397–416.
- [20] Ipara, Billy Okemer, D. O. Otieno, Rose Adhiambo Nyikal, and Stellah Nabwile Makokha. 2019. "The Role of Unregulated Chicken Marketing Practices on the Frequency of Newcastle Disease Outbreaks in Kenya." *Poultry Science* 98 (12): 6356–66.
- [21] Iqbal Yattoo, Mohd, Oveas Raffiq Parray, Shah Tauseef Bashir, Muheet, Riyaz Ahmed Bhat, Arumugam Gopalakrishnan, Kumaragurubaran Karthik, Kuldeep Dhama, and Shoor Vir Singh. 2019. "Contagious Caprine Pleuropneumonia—a Comprehensive Review." *Veterinary Quarterly* 39 (1): 1–25.
- [22] Kaluwa, Catherine, Jemimah Oduma, Faduma Abdullahi Abdirahman, Byalungwa Kyotos Kitoga, Angela A. Opondoh, John Muchibi, Brigitte Bagnol, Marieke Rosenbaum, Sylvia Onchaga, and Meghan Stanley. 2022. "Using the Women Empowerment in Livestock Index (WELI) to Examine Linkages between Women Smallholder Livestock Farmers' Empowerment and Access to Livestock Vaccines in Machakos County of Kenya: Insights and Critiques." *Vaccines* 10 (11): 1868.

- [23] Kenya National Bureau of Statistics, ed. 2019. *2019 Kenya Population and Housing Census*. Nairobi: Kenya National Bureau of Statistics.
- [24] Kenya National Bureau of Statistics, Kenya National Bureau of, Ministry of Health/Kenya, National AIDS Control Council/Kenya, Kenya Medical Research Institute, and National Council for Population and Development/Kenya. 2015. "Kenya Demographic and Health Survey 2014," December. <https://dhsprogram.com/publications/publication-fr308-dhs-final-reports.cfm>.
- [25] Kirori, GABRIEL N. 2015. "Social Capital as a Strategy for Promoting Rural Livelihoods: Case for Kenya." Progressive Academic Publishing, Birmingham, UK.
- [26] Kyotos, Kitoga Byalungwa, Jemimah Oduma, Raphael Githaiga Wahome, Catherine Kaluwa, Faduma Abdulahi Abdirahman, Angela Opondoh, Jeanette Nkatha Mbobua, John Muchibi, Brigitte Bagnol, and Meghan Stanley. 2022. "Gendered Barriers and Opportunities for Women Smallholder Farmers in the Contagious Caprine Pleuropneumonia Vaccine Value Chain in Kenya." *Animals* 12 (8): 1026.
- [27] Moser, Caroline ON. 1989. "Gender Planning in the Third World: Meeting Practical and Strategic Gender Needs." *World Development* 17 (11): 1799–1825.
- [28] Mukamana, Liberata, Marieke Rosenbaum, Janna Schurer, Beth Miller, Fidèle Niyitanga, Denis Majyambere, Mary Kabarungi, and Hellen Amuguni. 2022. "Barriers to Livestock Vaccine Use among Rural Female Smallholder Farmers of Nyagatare District in Rwanda." *Journal of Rural and Community Development* 17 (1).
- [29] Munyasi, Joseph Wanjala, Anthony Mwai Macharia Gitunu, Joseph Kingoria Manyeki, Elizabeth Nduku Muthiani, and Sospeter O. Nyamwaro. 2012. "Non-Traditional Land-Use Practices in the Pastoral Maasai Region in Loitokitok District of Kajiado County, Kenya." *Journal of Agricultural Extension and Rural Development* 4 (16): 428–34.
- [30] Murray, Janet, and Mary Ferguson. 2001. *Women in Transition Out of Poverty*. Toronto: Women and Economic Development Consortium. January.
- [31] Njuki, Jemimah, Elizabeth Waithanji, Joyce Lyimo-Macha, Juliet Kariuki, and Samuel Mburu. 2013. *Women, Livestock Ownership and Markets: Bridging the Gender Gap in Eastern and Southern Africa*. Routledge.
- [32] Nussbaum, Martha. 2003. "Capabilities as Fundamental Entitlements: Sen and Social Justice." *Feminist Economics* 9 (2–3): 33–59.
- [33] Nussbaum, Martha, and Amartya Sen. 1993. *The Quality of Life*. Clarendon Press.
- [34] Oino, Peter Gutwa, Samwel Auya, and Cyrillah Luvega. 2014. "Women Groups: A Pathway to Rural Development in Nyamusi Division, Nyamira County, Kenya."
- [35] Orodho, A. J. 2003. "Essentials of Educational and Social Science Research Methods." *Nairobi: Masola Publishers* 54: 71–82.
- [36] Paudel, Lok Nath, U. ter Meulen, C. Wollny, H. Dahal, and M. Gauly. 2009. "Gender Aspects in Livestock Farming: Pertinent Issues for Sustainable Livestock Development in Nepal."
- [37] Resnik, David B. 2011. "What Is Ethics in Research & Why Is It Important?"
- [38] Sen, Amartya. 2007. *Identity and Violence: The Illusion of Destiny*. Penguin Books India.
- [39] Shamoo, Adil E., and David B. Resnik. 2009. *Responsible Conduct of Research*. Oxford University Press.
- [40] Tukahirwa, Lillian, Anthony Mugisha, Elizabeth Kyewalabye, Ruth Nsibirano, Patricia Kabahango, Dean Kusiimakwe, Kenneth Mugabi, Winnie Bikaako, Beth Miller, and Brigitte Bagnol. 2022. "Women Smallholder Farmers' Engagement in the Vaccine Chain in Sembabule District, Uganda: Barriers and Opportunities." *Development in Practice*, 1–19.
- [41] UN Women. 2020. "Access and Control over Resources | Socialprotection.Org." 2020. <https://socialprotection.org/learn/glossary/access-and-control-over-resources>.
- [42] Waithanji, E., S. Wanyoike, and M. Liani. 2015. "The Role of Gender and Other Socio-Economic Factors in the Adoption of the Contagious Bovine Pleuropneumonia (CBPP) Vaccine."
- [43] Wambua, Eunice K. 2013. "The Role of Womens' Organizations in Empowering Women in Mwingi District, Kenya." PhD Thesis, University of Nairobi.
- [44] World Health, Organization. 2006. *The World Health Report 2006: Working Together for Health*. World Health Organization.