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Gender and Agriculture

Gendered economic strategies: division of labour, responsibilities and controls within households in Southern Nyeri County, Kenya.

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Declaration

By signing this document, we certify that all members have reviewed and agreed that this is the final version of the study report. Moreover, we declare that the research is our own and all sources of information have been duly acknowledged.

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Abstract

In Nyeri County Kenya, the majority of people derive their daily livelihoods from agricultural activities. However, the sector exhibits gendered asymmetries exist in regards to responsibilities, controls and tasks. Recently, with the Kenyan Constitution from 2010, formal steps have been made to ensure higher gender equality. Nonetheless, land ownership and formal income generating activities are still dominated by men. In this study, we investigate the interrelation of gender roles and agricultural production analysed through the lens of Feminist Political Ecology. Our objective is to analyse the results from our fieldwork with a scope on household economics, and thus expand the understanding of how formal and informal institutions affect gendered relations to natural resources. Furthermore, we link our findings of women's active participation in self-help groups with the concept of agency. Current asymmetrical gender structures are constituted partly by a gendered division of labour and a gendered understanding of crops and livestock where men's and women's separate agricultural activities and responsibilities constitute different domains of knowledge. Consequently, they adopt different economic strategies and hence, use separate economic systems. We argue, that women keep private savings and engage in self-help groups to strengthen their room for manoeuvre within current structures, and to gain access to formal economic institutions, otherwise primarily accessible of men.

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Abbreviations

HH - Household

NFM - Nutrient Flows Map

OFCSL - Othaya Farmers Co-operative Society Limited

PFE - Political Feminist Ecology

PRA - Participatory Rural Appraisal

SSI - Semi-structured Interviews

1 Introduction

Agriculture plays an intrinsic part of Kenya's domestic economy counting 25 % of the national GDP and directly or indirectly engaging approximately 80 % of the population (CIA 2016). However, despite the vast importance of agriculture for local livelihoods in terms of employment and food production for household consumption as well as for markets as an income source, agriculture is a social and economic domain that reveals societal hierarchies, structures and inequalities crosscut by differences in class, age, ethnicity, religion and not least gender (Mackenzie 2003). Hence, cultural norms of agriculture structure farmers' access to natural resources and thereby their living standard.

Our focus falls in line with an increased global focus of the essential role of women in agriculture regarding poverty reduction (Quisumbing et al. 2014). Additionally, according to the Kenyan Institute of Policy Analysis and Research (IPAR) a lack of protection of women's rights over access to and control of natural resources is a detrimental factor in poverty eradication (IPAR 2002 in Mbataru 2007). To understand gender inequality, it is important to consider structures affecting both men and women (Cleaver 2002). Instead of focusing on one gender we thus analyze the gendered relations in households between spouses.

The nature of land ownership in the post-colonial era is still inherently associated with men (see table 1.1). This is deeply rooted in the implementation of the Swynnerton Plan in 1954, part of a comprehensive development program aimed at transforming agriculture into a market-oriented sector steered for export production (Kiriti & Tisdell 2002). It comprised registration of land holdings to male farmers and encouraged them to shift subsistence practices towards cash-crop production, predominantly coffee, and marginalised women since

their land access and property rights decreased (Ibid.). As highlighted by Kiriti & Tisdell (2002), the effects of land policies implemented both before and after independence further excluded women by giving male farmers title deeds. Thus, land registration consolidated men as the de jure owners of land who accordingly began to control the coffee production (Ibid.). Consequently, women in the so-called coffee-society were relegated to subsistence farming, housekeeping and carers of their husband's land (Ibid., Mbataru 2007). The imprints of the post-colonial history are still visible in Southern Nyeri County, with a gendered agricultural production and male dominated land ownership.

Gender * Who owns you land? Crosstabulation

Count

		Who owns you land?		
		Owned by themself	Owned by spouse or parent	Total
Gender	Female	2	19	21
	Male	14	9	23
Total		16	28	44

Table 1.1 Cross tabulation of gender opposed to ownership of land amongst our questionnaire respondents. Results showing land is primarily owned by men has very high significance.

Our research is formed to understand the interrelation of cash-crops, subsistence crops and gender. It is connected to the social room for manoeuvre of men and women, where both social gender norms, formal and informal institutions will be critically analysed through the following problem statement:

> *Why do men and women in Southern Nyeri County, employ different economic strategies, and how can this develop the understanding of a socio-cultural categorisation of men and women vis-à-vis formal and informal economy and rights?*

Our analysis is placed within the framework of Feminist Political Ecology (Rocheleau et al. 1996) since we seek to develop the understanding of the shaping role of gender in the asymmetric access to natural resources with relation to household economics in an agricultural society. Thus, we introduce the importance of household and market economics to FPE within the existing context of gendered rights and access.

Through our 10-day fieldwork we gathered interdisciplinary data on the interrelation of gender and agriculture. The combination of natural science and social science methods provide a multifaceted analysis, which we discuss in relation to how the results were shaped by our genders, methods and positioning.

The report further examines how formal and informal institutions influence the local gendered division of agricultural labour and how this reproduces gender differences. Our analysis is structured through three main arguments that build onto each other.

First, we analyse how the relationship between both rights and responsibilities and the access to formal income generating activities and resources is highly gendered.

Second, we examine how differences in access to resources and gender asymmetries influence the spouse's perceptions of the household's agricultural production. We argue that the spatial and task-related division of responsibilities and control between men and women lead to different *knowledge domains* that we assess in relation to the perception of soil fertility and to the use of land.

Third, we examine men's and women's different economic strategies to manoeuvre within structural constraints and social norms. We argue that women, and to a lesser extent men, through private savings and self-help groups enhance their socio-financial independency.

We then critically discuss these arguments through the lens of institutional change with adherence to influences by certifications regarding the interweaving of local and global scales.

We conclude that men and women in Southern Nyeri County employ different strategies in order to enhance their agencies and that women through active engagement in self-help groups and the keeping of private savings expand their access into formal spheres, traditionally accessible of men. This challenges a dualistic, gendered understanding of formal and informal institutions and hence, reflects the importance of household economics for understanding the relation between gender and natural resources.

"Women are empowered to do some things, they otherwise could not"

Woman, Focus group 3

Figure 1.2. Satellite image of Southern Nyeri County. Source: Google Earth, date: 11.01.2014.

1.1 Study area

Our research was conducted in a village in Southern Nyeri County, Central District of Kenya. The population of Nyeri County in 2009 was of 693,558 with the majority belonging to the Kikuyu tribe and to several Christian denominations (OCB 2016). The economic core of the area is farming with tea and coffee being the main cash-crops (Ibid.). According to our data, families on average consist of 7 people across three generations, with 2-3 living outside the household. Male farmers have a higher education level than women (Figures 1.3) and more men have off-farm jobs..

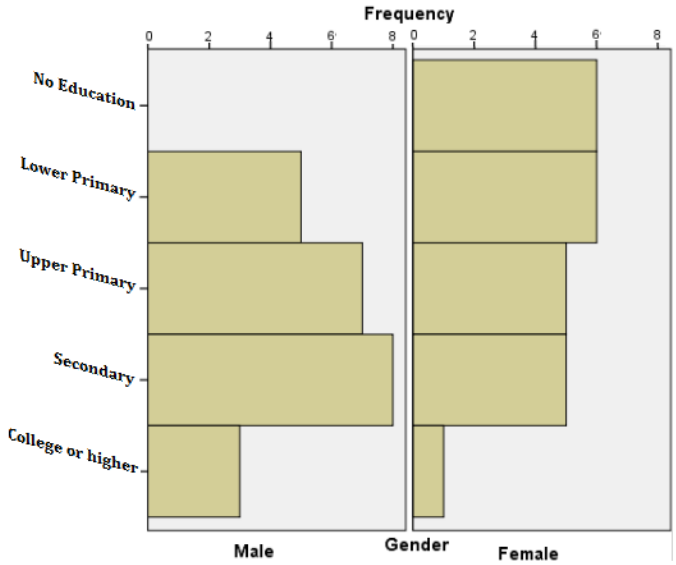


Figure 1.3 Education level among the questionnaire respondents.

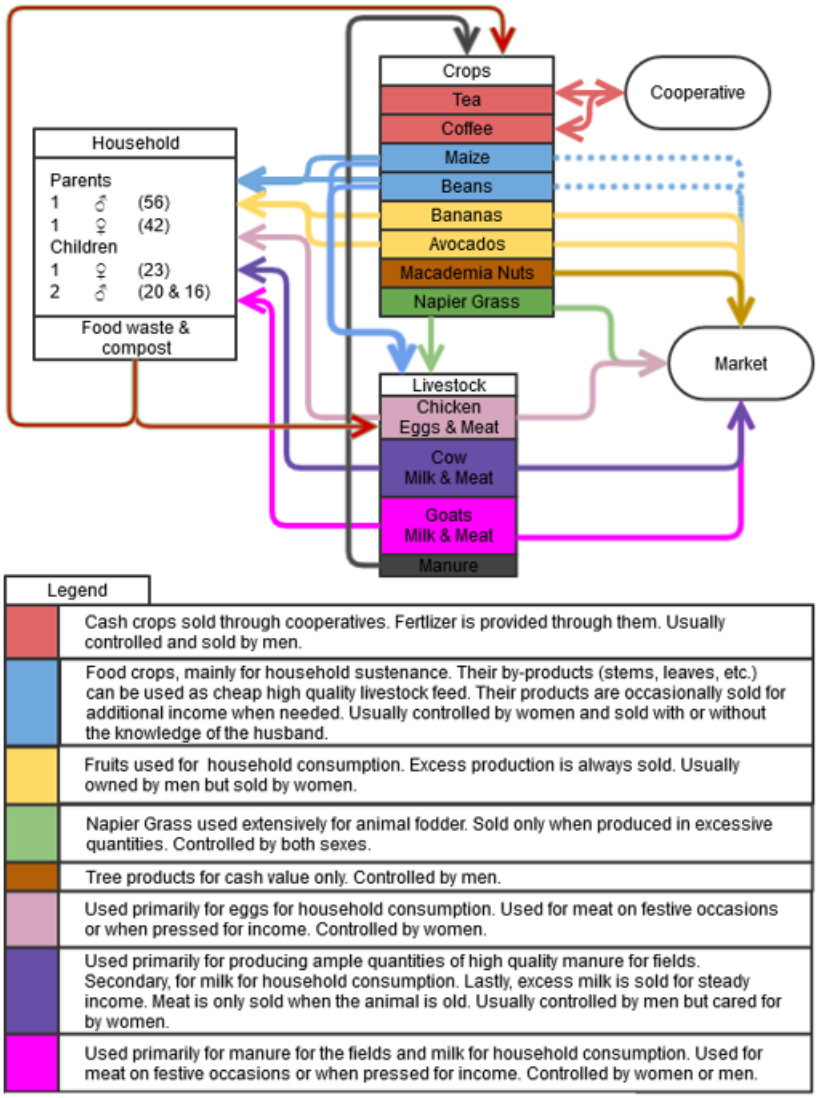


Figure 1.4. Nutrient Flows Map of an ideal-type farm in a village in Southern Nyeri County.

2 Theoretical Framework

This report draws on Feminist Political Ecology as our main theoretical framework since we find it a useful lens to view the data through as it highlights the complex ways in which gender asymmetries come into being and relate to the environment. Further, we outline the theoretical background behind soil analysis, which is used to examine gendered perceptions of soil quality.

2.1 Feminist Political Ecology

FPE builds on multiple other environmentalist and feminist theories, where Ecofeminism and Political Ecology are closely related (Rocheleau et al. 1996, 3-4). FPE adds gender to Political Ecology as the focal axis in shaping lives and people's relation to the environment (Ibid., 5). Current FPE works with intersectionality in incorporating gender and race. It was outlined as separate theory by Dianne Rocheleau, Barbara Thomas-Slayter and Esther Wangari in their seminal work "Feminist Political Ecology: Global Issues and Local Experiences" in 1996. Here they outline three major themes for analysis.

The first concerns the way knowledge is gendered in science and everyday life through the power to define what counts as "formal knowledge" and "informal knowledge" (Rocheleau et al. 1996, 8-9). They critique the separation of practice and science, as well as the separation of knowledge within science (Ibid., 9).[1] Rocheleau et al. argue that women's multiple roles as both producers, reproducers and consumers[2] create a different kind of integrated *domain of knowledge* in their everyday life, than the male domains of knowledge (Ibid., 9). As we discuss

[1] This has concurrently been critiqued by Bruno Latour, who argues that these separations within science, which he calls *domains*¸ come from different *modes of existing* as people (Latour 2013).
[2] Production defined by market purposes, reproduction defined by human purposes (Deere and De Leon 1987, 42)

in the analysis, the gendered division of labour, spaces as well as gendered cultural categorisation of crops and livestock leads to gendered ways of existing and gendered domains of knowledge.

The second theme concerns the relations of rights and responsibilities between men and women. Rocheleau et al. (1996, 12) describe how the gendered structural asymmetries in access and politics are continually reproduced (see table 2.1). In our study area, we found a similar asymmetry in men and women's access to legal rights and customary rights. We discuss the structure of this in section 4.1 and the nuances and challenges in section 4.3.

Women	Men
Custom rights	Legal rights
Informal	Formal
Unprotected	Internationally recognised
Use rights	Ownership
Use value	Commodities
Responsibility heavy	Rights heavy

Table 2.1 Illustration of the traditional discrepancy between rights and institutions between men and women according to Rocheleau et al. 1993, 12.

The third theme is women's role in environmental activism (Ibid., 14-15). Since we did not experience this during the fieldwork it is outside our scope.

2.2 Soil

Soil fertility is linked to its physical and chemical properties. Plants grow and derive their physical support and all the necessary nutrients for their survival through the soil (Benton Jones 2012, 5, Figure 2.2).

Macro-nutrients		Micro-nutrients	
Nitrogen	(N)	Boron	(B)
Phosphorus	(P)	Copper	(Cu)
Potassium	(K)	Iron	(Fe)
Calcium	(Ca)	Manganese	(Mn)
Magnesium	(Mg)	Molybdenum	(Mo)
Sulfur	(S)	Zinc	(Zn)

Figure 2.2. Table of essential macro- and micro nutrients.

The rate of dispensation of these elements from their solid phase into the soil solution is dependent on factors such as soil moisture, pH, temperature, soil composition and soil organic matter (Ibid.). Also the C:N ratio plays a part in the absorption of these elements by the crops (Brady & Weil 1999, 454). Lastly high Soil Organic Matter is correlated to high quality soil but because it is difficult to measure directly, Soil Organic Carbon is indirectly measured through the Permanganate Oxidizable Carbon (Pox-C) procedure (Weil et al. 2003, 3). However, not all soils are fertile, and if they were to begin with they decline after a few seasons of intensive farming (Benton Jones 2012, 6). Therefore, it is essential to uphold several practices and planting schemes that ensure constant fertility for high crop yields. One common procedure is the application of manure or fertiliser in order to replenish lost elements that have been used by the plants and to equalise the pH levels (Ibid., 6). For this reason, we chose to study three variables through analysing samples taken from the fields. These are the pH-levels, the C:N ratio and Pox-C. In the table below, the optimum pH-range for a selection of crops in Nyeri County is listed (Roy et al. 2006, 58, Table 2.3). Values within the range has a positive effect on the crop production, whereas values that deviate from this, being either above or below, worsen the crop production (Ibid.). Lastly, the ideal C:N ratio for the crop production is 12:1 with the acceptable range being between 8:1 - 15:1 (Brady & Weil 1999, 454-460). Therefore, considering the aforementioned factors, the relative soil quality of the fields was estimated in relation to each other.

Crop	Optimum pH	Crop	Optimum pH	Crop	Optimum pH
Arrow roots	5.5-6.5	Coffee	5.5-6.0	Potato	4.5-6.0
Banana	5.5-6.5	Kale	6.0-7.5	Pumpkin	6.0-6.5
Beans	6.0-6.5	Maize	6.0-7.2	Tea	4.5-5.5
Cabbage	6.0-7.5	Napier Grass	4.5-8.2		

Table 2.3 Illustration of optimum pH value for the most common crops in Gatugi (Roy et al. 2006, 58).

3 Methods and Data

To investigate the gendered division of labour and economic strategies of households we combined several methods from social and natural sciences which provided data of quantitative and qualitative nature and enlightened different issues and processes useful to answer the field of inquiry through triangulation. This section provides a description of our methodological and gendered way into the field, the data collected, the methods behind and the synergy between them.

3.1 Access

The researcher's gender is decisive for both positioning and access to different spaces, people and kinds of knowledge within the field (Dewalt & Dewalt 2011, 102). Due to our topic and the highly gendered division of social life in Southern Nyeri County both ours and the translators' gender were determinants for our positioning, data output and access to sensitive data. For instance during interviews with Laura (HH#3) and Suzan (HH#3), the presence of men, translators and group members respectively, affected their willingness to open up regarding sensitive gender topics. Similarly, translators are positioned as they talk from somewhere, on behalf of somebody (Buur 1999, 60). Our three translators and one elder acted as gatekeepers. Hence, this positioning not only influenced the spaces we could access and how they translated but also people's reaction to their presence. Thus, it was more fruitful to interview a woman in poor English than having a male translator interpreting from Kikuyu. Especially, as the male presence was a hindrance for women to open up we decided mainly to interview couples separately and to use a gender-divided research strategy where women interviewed women and vice-versa. This approach has been decisive for the data we collected and what we are able to conclude on.

To gain access, one must take up a trustworthy social role (Hasse 1995, 59), and according to George Simmel *the stranger* can enter private spheres due to his social distance to the field (Simmel in Gammeltoft 2010, 277). In Southern Nyeri County where domains of knowledge and spaces are generally gendered, a gender-divided research strategy provided the most trustworthy approach and as outsiders it was easier for us to ask sensitive questions on gender asymmetries and savings strategies. Instead of asking direct questions on farmers's secret money we mostly asked subtly where and why women or men would generally keep separate money and subsequently triangulated these answers.

We further used questionnaires and soil samples to gain access into intimate gendered spaces and households as recognisable methods with the stated objective of investigating crops, labour division and soil quality. As a mini portrait of the respondent the questionnaires served as a sampling method to recruit households of different constellations, economic levels and agricultural activities. Hence, we could structure what is otherwise a fairly haphazard way of recruitment in most qualitative research (Cohen 1984, 225) and thus gain access to households both reflecting and deviating from the general pattern.

3.2 General knowledge

The questionnaires provided quantitative data on labour hours, income sources, activities and priorities of expenditures of a statistical population of 46, equally divided between men and women of different ages (See Appendix 5). The 23 soil samples provided general knowledge of the soil quality from different fields and crops. The sampling was based on the owner's gender and the kinds of crops cultivated, and the samples were composites of 3-5 different top-soils (0-5 cm) specifically chosen with regards to topography, land gradient and presence of trees.

The soils were analysed in the soil lab at Department of Plant and Environmental Sciences (PLEN), measuring pH, Pox-C and C:N ratio (See Appendix 3 for results). We further conducted nine semi-structured interviews with local actors representing stakeholders from the educational system, churches and OFCS (Table 3.1) providing knowledge on the structural factors shaping gender roles and agricultural practices.

Name	Position	Name	Position
Susan Njambura	Pastor, Pentecostal church	Lucy Njiri	Agriculture officer, Nyeri South County
Millicent Wanjuku	Agriculture teacher at Girls School	Ruffas Mwangi	Agriculture officer, Nyeri South County
Father Moses	Priest, Catholic church	Paul Muhoro	Systemic consultant, Othaya Farmers Co-operative Society Limited
Duncan	Manager, Coffee Factory	Pastor Bonface	Priest, Evangelical Church.
James K. Ndegwa	Secretary, Othaya Farmers Co-operative Society Limited		

Table 3.1 Table of key informants

3.3 Profound knowledge

We got in-depth knowledge of local practices and perceptions of crops, gender roles, land, money and saving groups by SSI in 20 households (Appendix 1) with at least one person actively involved in farming, couples or singles. We conducted focus groups interviews at four female self-help groups as a way to meet women of different ages in their own informal setting. Unfortunately, we did not make any male focus groups as men were difficult to gather. During one entire day, one of us followed the farmer Gabriella (HH#20) in her activities on her tea field and at home, which gave profound knowledge of a woman's lifeworld and bodily information (Rubow 2003, 233) of her workload. We combined the qualitative interviews with different Participatory Rural Appraisal (PRA) methods. Cultural mapping, free listing, weekly drawing and matrix ranking concretised gendered perceptions, accesses and life worlds of the farmers and were useful ways to get unsaid information, enter conversations of abstract or sensitive issues (Strang 2010). For instance, during the cultural mapping we asked informants to draw places of major importance to them. Hanna (HH#1) drew the bank where she kept a secret

account and Susan (HH#3) drew her saving group, which made it easy to ask into secret accounts. The weekly drawing gave an overview of how men and women spend their time and perceive the life of their spouse. Matrix ranking (Mikkelsen 2005, 100) visualised the gendered perception of crops and livestock as either male or female, cash or subsistence crops, their importance and required work effort, since we asked farmers to range these on a scale from 1 to 7, where 1 was female and 7 male. Combined with free listing of gender tasks and crops, it gave an overview of the value and perception men and women attach to different crops and associated tasks. Further, free listing of saving flows provided information on gendered perceptions of these. To get an overview of the farm and household, we designed Nutrient Flows Maps (NFM) with informants to provide quantifiable data. Livestock, crops, annual yield, plot surface and amount of manure and fertiliser were noted and moreover we recorded the flows between each crop or livestock. Responses to NFMs and matrix rankings enabled us to discern differences between practice and what was told, since we could confront farmers if they provided divergent answers in different methods.

As homes constitute 'social-psychological spaces' of family conflicts, relations and practices (Tjørnhøj-Thomsen 2003, 107) we used participant observation in our host families to grasp gendered spaces and tasks. Moreover, we did participant observation at Farmers Days at OFCSL and at the celebration of International Women's Day in a Catholic Church, which was further a natural occasion to ask into women's struggles.

3.4 Synergy of methods

Different methods shed light on diverse issues but new knowledge also arises from their intersection. To study the complexities of gender specific agricultural and economic strategies it was fruitful to link social and natural sciences as this provided a better grasp of local intricacies and a solid ground for data triangulation. Matrix ranking and NFM complemented each other by presenting household tasks, flows of goods and their hierarchy. A further approach was to correlate soil data with soil perception maps, wherein we asked female and male farmers to map plots and explain their quality separately or together. Inspired by FPE that considers gender a focal point in shaping people's relations to the environment, we have correlated soil quality and means to improve it with gender perceptions (Table 4.7, Appendix 3, 4).

Questionnaires, soil samples and NFMs are not only quantitatively useful, they also provide qualitative data on people's behaviour, response and negotiations (Bernard 2011, 267). Accordingly, observation is a constant practice, and in the collection of questionnaires, how respondents act and how the environment's influence them reveal new knowledge (Hansen & Andersen 2000, 104). Hence, in our collection some questionnaires developed into SSIs and even into minor focus groups as a man began to negotiate a respondent's replies regarding gender roles. Because of our topic and gendered division we constantly observed and compared what was said and done, the negotiations and response of men versus women in SSIs, PRAs, soil perception maps and NFMs.

4 Analysis

4.1 Rights and Responsibilities

This section focuses on the gendered agricultural division of labour within households reflected by certain responsibilities, control of particular crops and livestock, manure and fertiliser and different kinds of access to markets.

> *"We have different ministries"* - Jeremy, HH#14

This figurative description of the farmer Jeremy illustrates the gendered division of labour in households, where gendered responsibilities and controls lay the ground for varying income sources and economic household contributions. In accordance with FPE, we emphasise on the gendered control and responsibilities to procure and manage different resources for the family (Rocheleau et al. 1996, 11). In Southern Nyeri County, crops and livestock with high economic exchange value such as coffee, tea, macadamia and cow meat are mostly sold while crops and livestock with low economic exchange value e.g. maize, beans, potato, banana, chicken meat and eggs are kept for sustenance. As suggested by Johnson (2004, 1366), men mainly control cash-crops with a high exchange value, often with an irregular seasonal income flow whereas subsistence-crops provide women with smaller and more frequent incomes. The connection between gender and perceived control of crops and livestock is illustrated in Figure 4.1.

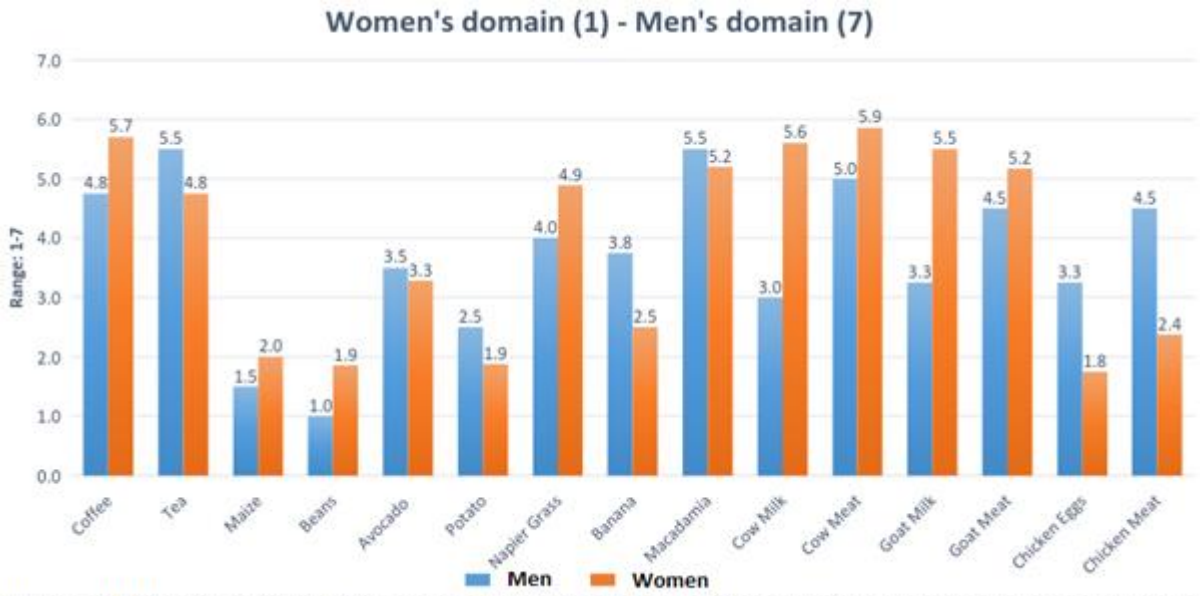


Figure 4.1 Matrix ranking of the average gendered perception about the gendered domain of a crop.

As described in related literature (Mbataru 2007, Kiriti & Tisdell 2003a, 2003b, Heyer 2006) our findings reflect gendered differences in access to ownership and that crops are culturally tied to gender, aligned with the perception of the crop as either for cash or subsistence. Thus, as one male farmer explained "livestock is the man's property, just as the woman is" cash-crops and livestock primarily belong to men, while most subsistence-crops are controlled by women, but rarely owned by them.

Figure 4.2. Free listing of gendered crops according to women in Asca Management Agency Group.

However, the continuum in Figure 4.3 is not fixed neither among households nor through time and does not reflect who actually does the work. Rather, it is fluid and crops and livestock can move along it depending on the specific needs of the household e.g. its supply and demand for food vis-à-vis economic inflow of money which is affected by external factors such as market prices.

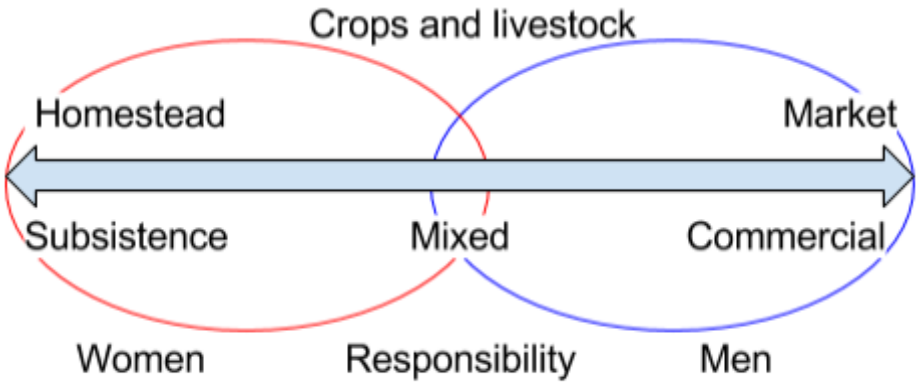


Figure 4.3 Gendered perception of crops and livestock continuum.

This is illustrated since avocado and goat milk both range from 1 to 7 in the matrix ranking. Hence, they are perceived both for the market and for household consumption (see table 4.4).

Participants			Crops	Livstock
HH#	Men	Women	Avocado	Goat Meat
1	x		6	7
1		x	6	1
4		x	1	
5		x	4	7
6		x	1	
6	x		4	4
8	x		4	1
9	x		1	1
13		x	5	
15		x	7	
Average men			3,8	3,3
Average women			4,0	4,0

Table 4.4 Matrix Ranking of subsistence-cash continuum perception for avocado and goat meat.

Livestock is important to the household since both chicken eggs, cow and goat milk are used for consumption and sale. Further, manure produced by cows and goats is vital for the production of both cash and subsistence crops. Hence, napier grass, used for fodder, has an ambiguous purpose as it is not used for sale, but is cut by the woman for the cow, which belongs to the man. The continuum reflects a cultural categorisation where the perception is

fundamental, rather than practice. We argue this, since household practices were not homogenous, while cultural categorisations were. For example, some crops were both cash and subsistence crops, but were perceived only as subsistence crops because of the low price. An example is maize, often sold by women, but primarily grown for household consumption.

" It is so little. It's unimportant, so he just let me deal with it"

- Woman, Focus group 1

Hence, maize has a low value, which leads it to be perceived as a female's crop, even though much of it is sold. The gendered average perception of crops and livestock is illustrated in Figure 4.5.

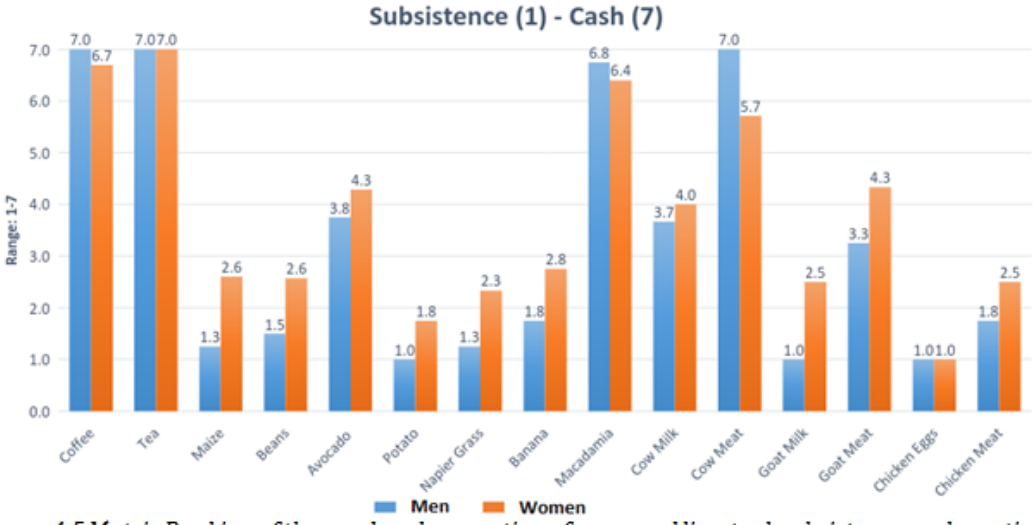


Figure 4.5 Matrix Ranking of the gendered perception of crops and livestock subsistence-cash continuum.

4.1.1 Resources and sellability

Each household has access to limited resources, therefore the allocation of them is of critical importance for its survival. However, the evaluation of how they should be applied varies between households depending on wealth, size and gender of the farmer. As exemplified in the two NFMs (Figure 4.6), men value cash crops higher as destinations for manure and often neglect food crops. Women apply it more equally between all the crops, partly because they realise the income potential of the food crops. This implies a connection between control of crops and application of manure as seen from the NFMs Figure 4.6. Our example shows that women sell more varieties of agricultural products than men and distributes manure differently. In fact, husbands were not aware of all women's economic activities.

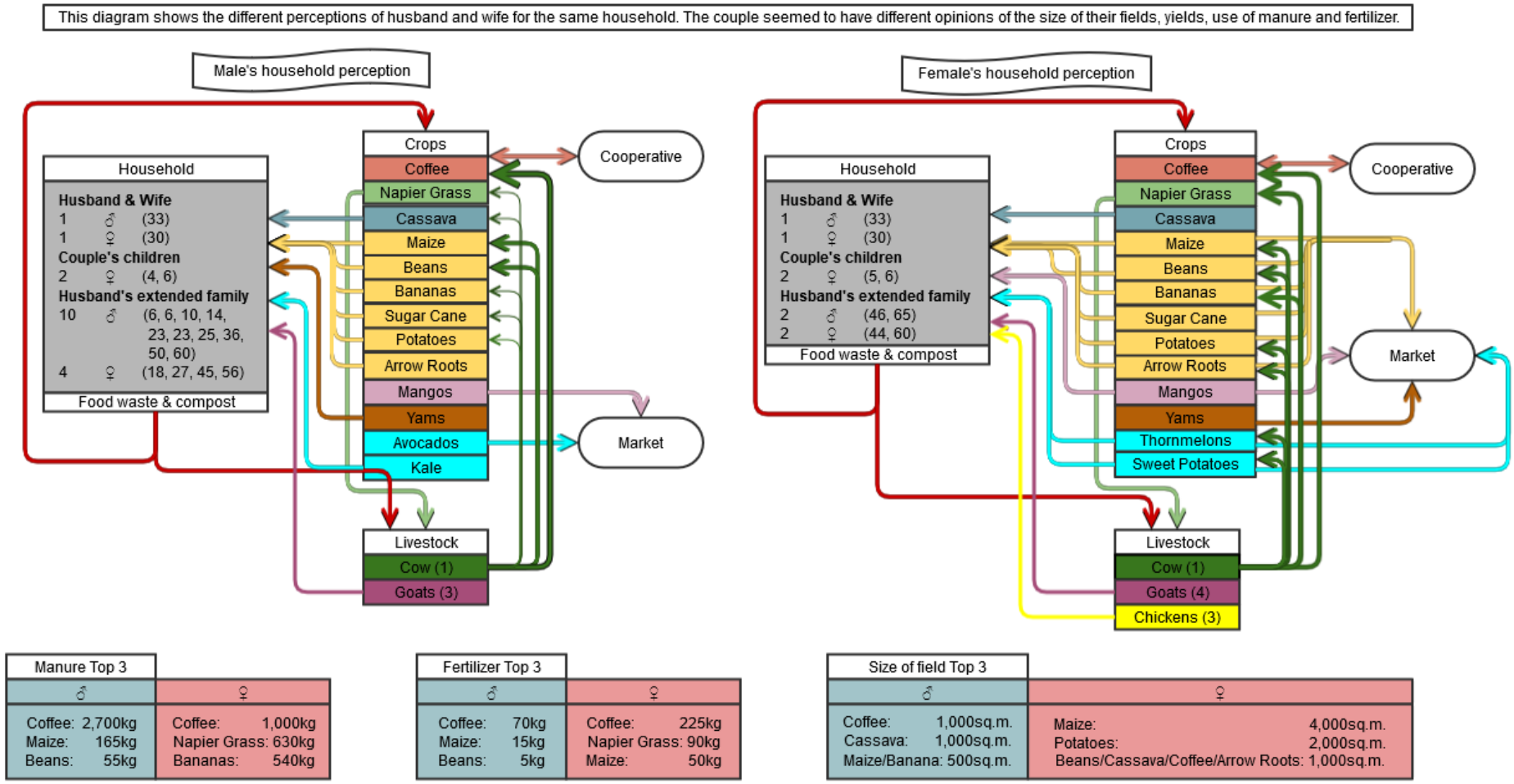


Figure 4.6 Nutrient Flows Map for husband and wife for perception of the same household.

Legend	
Household	There seem to be differences as to what each spouse considers as household members. The husband chose to also include his brothers and his uncle's family who was also staying at the farm complex, while the wife was more conservative choosing to include only their family and her husband's parents and uncle.
Coffee	When it came to their main Cash crop, they seemed to agree on the mechanisms behind the production chain (where they buy it from, where they buy the fertilizer and where they sell it etc.). Nevertheless, the husband noted more production than the wife and twice the ammount of manure and fertilizer. This descrepancy may be because again the husband might consider as his household's coffee land also that of his family, whereas the wife might only count the land that was directly allocated to their family by her husband's parents.
Napier Grass	Here the husband describes a very small plot of Napier grass as his. Almost 90% less that what his wife noted. This may be because he didn't directly work on providing fodder for the animals, therefore he may have been oblivious to the existence of additional small Napier grass plots inside the big farm. It is common in the area to plant Napier grass in small patches of land between bigger fields. Then they are mostly left unattended until they need to be harvested to feed them to the animals.
Cassava	The couple seems to agree on the where is located (intercroped between coffee plants) and how it is used. Though the husband states he is using manure on it whereas the wife does not. That is perhaps because he sees the manure that goes to coffee as also affecting the cassava.
Female Food Crops	Here is where the biggest discrepancies occur between the couple. They are tradionally "female" crops mainly used for food. The husband steadily underestimates every factor (plot size, yield, use of manure and fertilizer) of each crop, whereas the wife in some case states singificantly larger numbers. For examples in the case of Maize the husband says they only have 1/8 acre dedicated to Maize and got only 70kg last year, while at the same time the wife claims it is as much as 1 acre and they got 400kg last year. The use of manure and fertilizer follow suit. The rest of the crops follow a similar pattern. This may happen because the care of these crops rests only in female hands, therefore men don't really know what happens in those fields except when they have to do heavy manual labour (ie. plowing the field). Lastly, the woman was selling part of the production in the market for additional cash for the househol, while the man considered all production went for consumption only.
Mangos	The husband claims the whole production goes for sale in the market, while the wife claims one third of the production is kept for home consumption.
Yams	The husband claims the whole production is kept for home consumption, while the wife claims it wholly goes for sale in the market.
Rest of crops	Both husband and wife noted some additional crops the other missed. Since we don't have data from both we cannot make any assumptions.
Cow	The cow didn't produce any milk and it was used basically for producing manure for the crops. According to each spouse we got different answers as to where the manure was applied to.
Goats	The husband claims to keep the goats for manure and meat, whereas the wife for their milk and their manure. Even the actual number of goats in the household was contested.
Chickens	The husband answered negatively about the existence of chickens in the household, even when directly asked about it. the wife said it was because she was the one solely taking care of them.

Figure 4.6 Nutrient Flows Map for husband and wife for perception of the same household.

A complex system of perceptions of responsibilities as well as rights lead to an asymmetry in the way men and women handle their farming production. A consequence is that men as land-owners have access to formal markets, while women sell through informal markets. In this way, men are bound by strict regulations and also protected by laws. Men rely on their membership of several cooperatives both for their supply of fertilisers and insecticides, as well as a steady market to sell their products, such as macadamias, coffee, tea and milk. On the other hand, women are less regulated and have more flexibility in both deciding what and when to sell their farming products, but their access to land and production is unprotected. For a woman to get access to most cooperatives, she must hold the formal title deed, a still uncommon fact, despite the Constitution (Constitution of Kenya 2010). Thus, women are excluded from owning major cash crops and instead, have to rely on informal markets for their income. Consequently, women often sell food crops for cash in local markets, with or without their husband's knowledge. From NFM Figure 1.4 it is visible that men's crops are more often sold through cooperatives, while female controlled crops have markets or households as the destination of the agricultural products.

4.1.2 Head and neck

As argued in Rocheleau et al. (1996, 10), the pattern of gendered rights and responsibilities is reflected spatially as women are responsible for the private domain as caretakers of subsistence farming, housekeeping and land maintenance through use rights, whereas men dominate the public sphere and income generating activities due to formal ownership of land and cash-crops as explained by the farmer Gabriella (HH#20):

> *"Women stay at home and do a lot of work. Men go to town and stay there. The housework relies on women: we look after children, go to the field, so much work."*

According to Johnson (2004), men exhibit a strong feeling of household responsibility as they regard themselves as the main household provider. This is confirmed in Southern Nyeri County were the male identity of being *head of the household* is partly constituted by a public and economic role and the female identity is constituted by the household activities, hence:

> *"The wife is under the man. She stays in the household and provides food for the husband who is working outside. Women should cook, men go and find work. It should never change."* - Benjamin (HH#9)

Men are responsible for the main coverage of larger household expenses such as school fees, health care and construction work, while women cover the daily expenditures such as food, household items and clothes. Most men emphasise that they should have the final say in decisions over procurement of bigger household assets. A structural reason for the asymmetrical division of rights and responsibilities is the land ownership since the implication of men bestowing land is that they are considered heads of the households and also the major decision makers (Rocheleau et al. 1996, 302).

Another factor shaping this asymmetry is the church, which plays a significant part of social and religious life in Southern Nyeri County. Most farmers present a biblical founded argumentation for the uneven gender pattern referring to Ephesians 5:22-24[3]. Susan Njambura, pastor in Pentecostal church explained it this way:

> *"God created man first and woman was made from him. Since the first marriage was made by God women can't be over man since he is the head according to the Bible. No wonder men want us to submit because God created it that way*." - Susan Njambura, pastor in Pentecostal church.

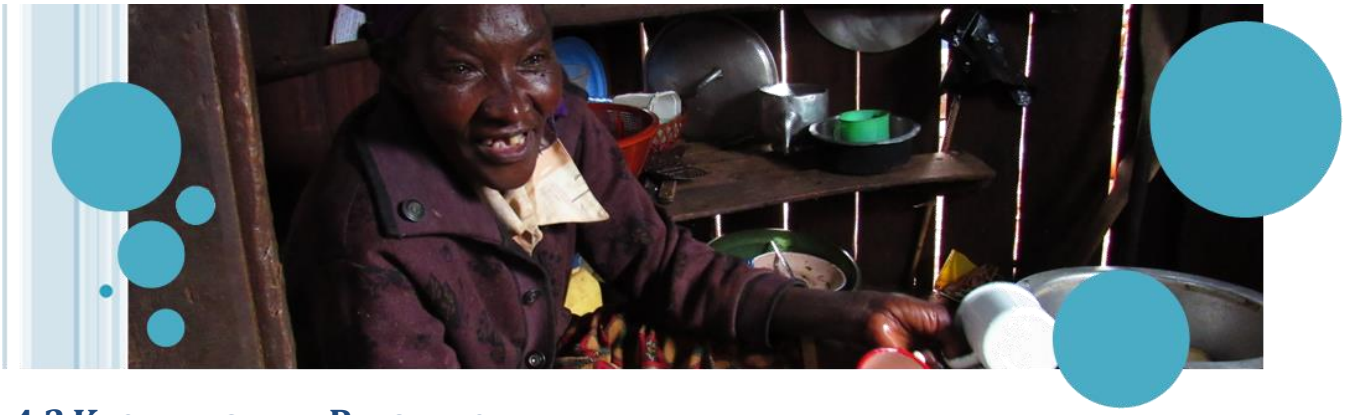
Further, at the only place celebrating International Women's Day, the Catholic Church, Father Moses' main message to the women was:

> *"Women should not engage in sexual immoral acts but be women of dignity, valuing their inner person."*

[3] "Wives, submit yourselves to your own husbands as you do to the Lord. For the husband is the head of the wife as Christ is the head of the church, his body, of which he is the Savior. Now as the church submits to Christ, so also wives should submit to their husbands in everything."

Adding to the understanding of an asymmetrical division of rights and responsibilities, several female farmers such as Gabriella (HH#20) claimed that *"women are the actual head of the families"* since they have to maintain the household's public image and uphold its welfare. Therefore, if children are not well-dressed or don't eat well, women are blamed. Hence, women feel a divergence between their actual responsibilities and the social expectations to them as they often become the target of the man's responsibility when he neglects his liability[4]. Johnson (2004, 1364) encountered a similar uneven perception between spouses since men reported that they covered 91% of the household expenditures, while women claimed it was almost equal. In line with Rocheleau et al. (1996, 9), we argue that while both men and women are responsible for the household production, women are moreover responsible for its reproduction.

[4] In our study area the problem of alcoholism is widespread. This solidifies women's perception of being the actual head of household and even take care of their husbands along with children, crops and livestock.



4.2 Knowledge and Perception

The gendered division of rights and responsibilities regulates the interactions farmers have with their environment, and thus the relation between farmers and said environment. The division of men and women in Southern Nyeri County, seen in multiple constellations, produces subjects with certain involvements with their environment, and thus distinct kinds of knowledge about it. This section examines how the relation between crops and livestock on the one hand and human identity on the other is forming *domains of knowledge*. These domains constitute certain ways of knowing the world (Rocheleau et al. 1996, 9). We argue that economic strategies of farmers in our study area are contingent on the kind of knowledge they can access.

4.2.1 Farming, space and identity

As described in the previous section, certain crops and livestock are connected to men and other kinds to women, irrespective of who actually works on them. The cultural categorisations influence the identity of the farmer, encompassing the perception and categorisation of space in households.

The continuum between cash-crops and subsistence crops is constituted by more than just practical considerations, but has implications for identity of the farmers. Hence in Kenya even though women, children and casual labours pick the coffee and tea, it is a man's crop since he

gets the money steaming from their labour (Kiriti & Tisdell 2002, p. 8).[5] In the matrix rankings, both men and women associated tea and coffee primarily with men (Figure 4.1).

Generally, men describe themselves as coffee-farmers, and Mark (HH#1) even stated:

> *"If somebody doesn't have tea or coffee, he isn't a farmer."*

As well, Rachel (HH#15), a successful, unmarried female coffee farmer, felt perceived as masculine in Southern Nyeri County, because she was predominantly dealing with coffee. Coffee or tea can thus be seen as constituting the male identity. Concurrently, women are measured by their farming abilities in relation to their capability to feed their family and felt appreciated by their husband or family-in-law according to their yield.

> *After you marry, everyone will look at you and how you do in your farm. If you get good results, they notice. Irene, HH#16*

Adding to this, the kitchen was primarily seen as the woman's domain. We only saw local men inside the kitchen very few times, and only twice do the cooking. In line with the structure described in the previous section, it was a general trend that male identity was partly constituted by a public and economic role outside the household, while female identity was constituted by activities within it.

However, our field was more complex than the division of labour within the farm since in most households either of the spouses had an income generating job in a nearby town or in Nairobi. Men could have a town-based business or work as taxi-drivers or carpenters, while women had small shops. "*Kikuyu women have a long history in business and trade*" (Leakey 1956, Robertson 1997 in Johnson 2004, 1363), and even in cases, where women were the primary farmer *de facto*, they would sell the excess of crops they grew at local markets.

Even so, the dialectic between the spatial division within the house and farm and division of tasks leads to different modes of existing for the spouses, and thus structures the domains of knowledge, farmers access. This dialectic reproduces an *insider-outsider* role of spouses. The

[5] According to Agricultural Officer, Ruffas Mwangi "*Coffee is a male business based on women dominated labour*" since 40% of paid coffee farmers at OFCSL are either single mothers or widows. 60% are men who have 80% of the work on their coffee done by their wives who do not hold accounts.

wife becomes the insider with more knowledge of household economics and dynamics, even when she is not a farmer. On the other hand, the husband has access to "outsider-knowledge" from banks, cooperatives and extension officers. The gendered structure in the household does then not only influence the division of labour, but also men and women's modes of existing in relation to their land and household.

4.2.2 Soil knowledge

Generally, women have more detailed perceptions of the soil quality in the farming plots of the household (see table 4.7, figure 4.9). This stems from a combination of factors: land use, nutrient access and location. Men primarily focus on tea, coffee, cows and to an extent napier grass, while women participate in all agricultural activities on the farm. Women's land is therefore more diversified and their knowledge of what the land can be used wider. The gendered division of labour thus leads to different perspectives on what good soil is, based on what the beholder can use it for. Drawing on Latour's (2013) concept of modes of existence, we argue that based on their tasks within the farm, men and women view land differently and exists in different relations to their land.

Soil sample	Crop	Cash/ sub	Soil Perception Female/Male		Manure/Fertilizer	pH-value	MnoxC (mg/kg)	C:N ratio
6-1	Arrow roots	Sub	Wet	Difficult	None	6,08	540	9,27
6-2	Coffee	Cash	Fertile	Good	NPK Oct 15	5,16	585	10,93
6-3	Maize / Beans	Sub	Less Fertile	Good	NPK Oct 15	5,71	450	8,89
1-1	Tea	Cash	Middle	Good	Manure, CAN Nov 15	4,31	1440	12,43
1-2	Coffee	Cash	Middle	Good	Manure, CAN Nov 15	5,18	945	10,13
1-3	Maize	Sub	Very Good	Good	Manure, CAN Nov 15	6,14	855	9,48
15-1	Maize	Mix	Very Good		Manure,	6,95	630	7,56
15-2	Kale	Sub	Very Good		None	6,71	810	9,54
15-3	Coffee	Cash	Best		Manure Feb 16 + CAN	5,67	1125	9,93

Figure 4.7 Examples from soil sample analysis.

Household 15 is an example of the female farmer Rachel, who as an unmarried woman, has full control of the nutrients in her household, and thus can determine where to place manure and fertiliser compared to the kinds of crops and her perception of soil quality on her entire farm. Rachel is an outlying example. She has full knowledge of her household and through her membership of OFCSL she has knowledge of public spheres. She can thus integrate different

knowledge domains, and include both household needs and market possibilities through formal channels in her economic strategies. This is reflected by her perception of the coffee field as her best plot corresponding to the results from the soil analysis.

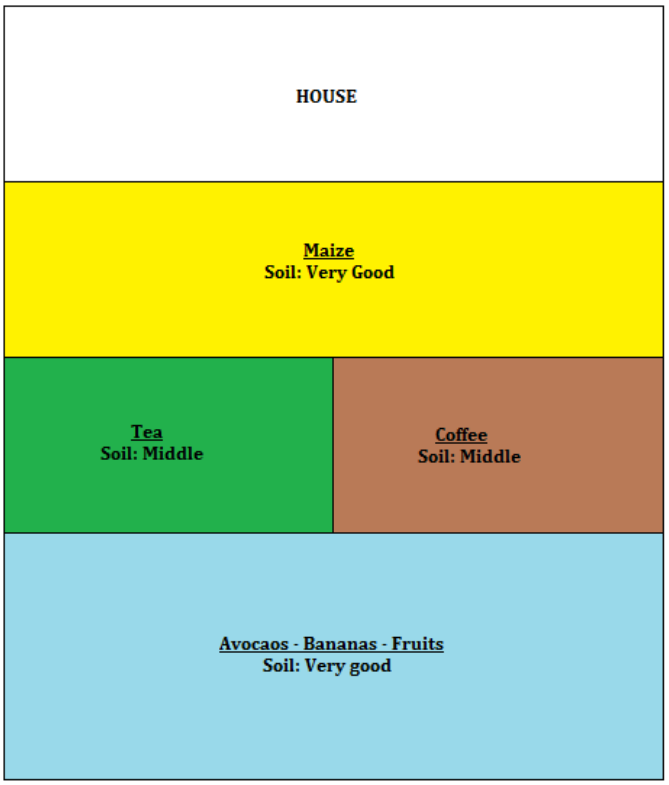


Figure 4.8 Husband and wife joint Soil Perception Map

Manure and fertiliser are key factors regarding the convergence of knowledge and gender. As described previously, men have more ready access to fertiliser especially, as their cash flow is larger. As reflected in our soil analysis in Table 4.7, in Household 1, the man is the main farmer, while his wife who works in town has a more diversified perspective on the soil quality (Figure 4.8). The reason is that he has more general access to manure and can buy fertiliser himself, while her activities relating to vegetables are reliant on the nutrients from parts of the farm, that he controls. Even though she thinks the soil quality is better for maize, the soil analysis shows that the soil quality is not necessarily better. These results could be due to high levels of fertiliser on tea and coffee.

In general, men are less concerned about limiting their use of money on crops than women, as men typically have access to larger sums of money. This is evident from our NFMs (see Figure 4.6). As well, the cow is usually controlled by the man, and he seems to have more power to decide the distribution of manure if it is a scarce resource. Men therefore have more options in levelling the quality of soils than women, who must rely on insider-knowledge to make their yield higher, e.g. crop diversification which allows women to place their crops in relation to each other according to soil quality. This point relies on the gendered division of labour, a structure reproducing how men and women relate to their soil, since it divides their land use along gendered lines.

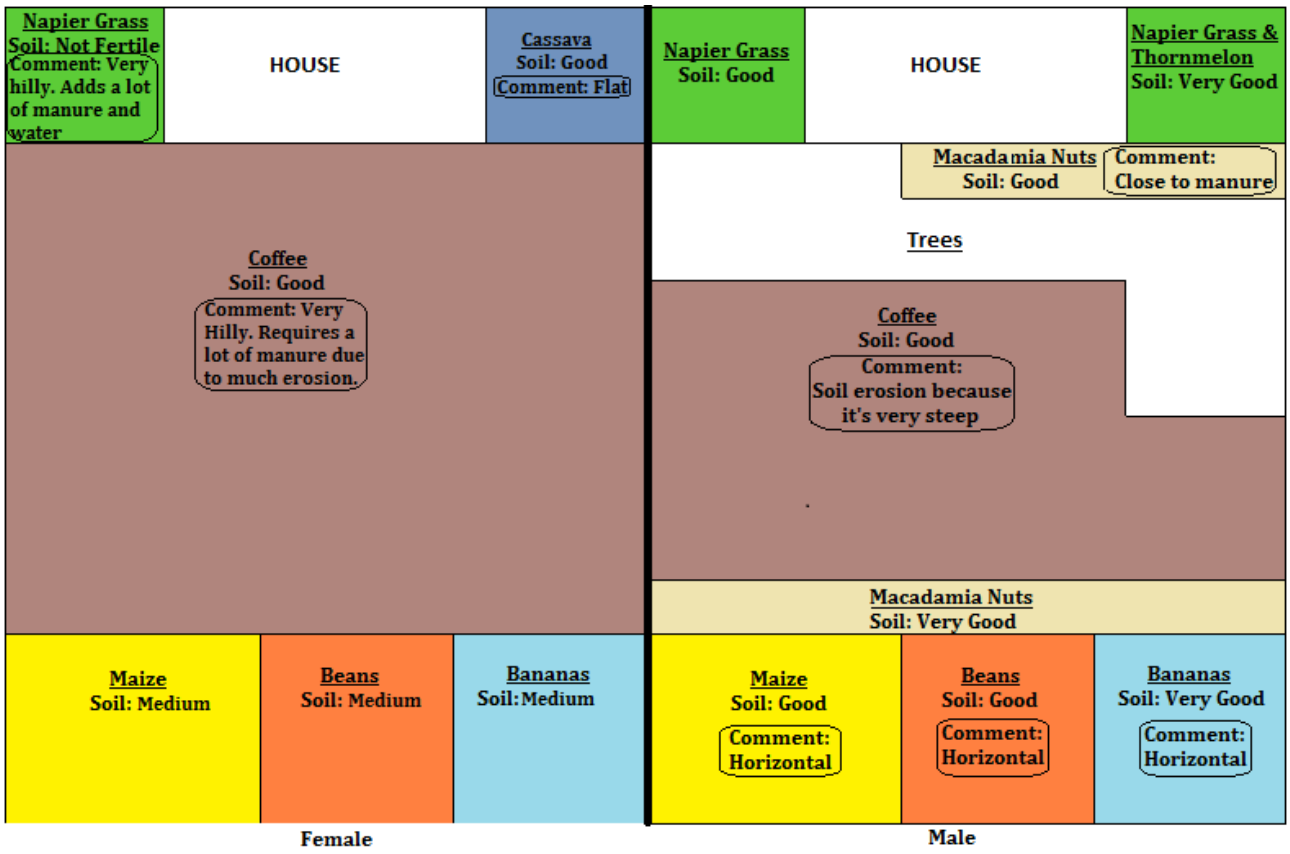


Figure 4.9 Soil Perception Map for husband and wife for perception of the same household.

These figures represent the couple's soil perception of their farm. Mary has a more expansive perspective on the soil quality than Joseph as she is the main farmer, while he has a job outside of the house. As well, she considers the strain of carrying manure down the hill and crops up the hills. Comparing their perception maps with their data in table 4.7, she perceives a difference in soil quality between the maize plot and the coffee plot. While we cannot control for the addition of manure and fertiliser, we know that they add manure to the maize, and fertiliser and manure to the coffee. Her conclusion that the maize plot is of worse quality than the coffee plot is in compliance with our analysis results. Compared to household 15 and 1, the soil quality of

household 6 is overall worse. Most of the farm was situated on a hill, which increases the chance of nutrient leaching downhill. She was more aware of this, which again can be explained by her work in the farm, and his work outside. She planned to plant better suited plants to minimize fertiliser expenses.

4.2.3 Modes of decision making

The gendered division of labour has very real material consequences, as it leads to a division in the structure of the daily lives of men and women, both single and married. As men and women have different *ways of existing* within this structure, they perceive different domains of knowledge. To women knowledge about the household and farming is fully integrated, while for the man knowledge about farming and either politics or large scale economy are integrated. We argue, that the different gendered domains of knowledge lead men and women to focus on different things, when making economic strategies.

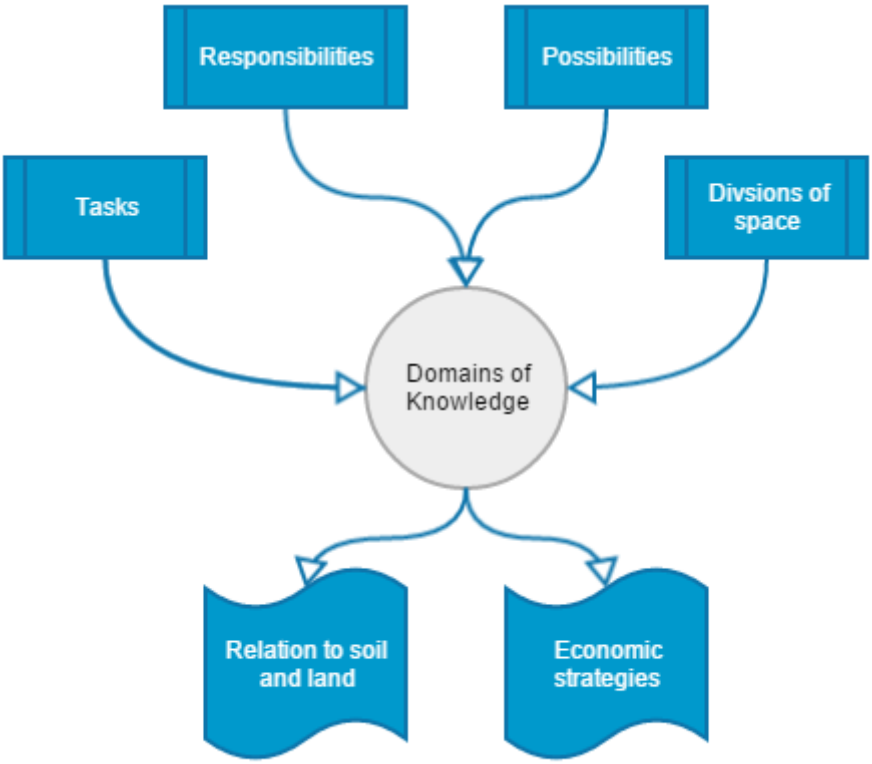


Figure 4.10 Domains of Knowledge

Cleaver (2000) argues that to explain gender inequality it is not enough just to look at the gendered identity of women. It is also necessary to look at the gender identity of men and knowledge as well as relations between spouses (Ibid., 60). In our study area, these relations

are not only influenced by culturally defined responsibilities within the household - such as husband, wife, father and mother. The knowledge spouses have to base their decisions on is also structurally defined by their tasks and spatial possibilities. Relations between husband and wife are structurally asymmetrical, and this influences the economic strategies which are economically sound for them.

FPE scholar Mary Mellor (1997) argues, that the cultural categorisation of man as "economic" is based on the exclusion of women from this sphere. Accordingly, it is important to dismantle the ideas of economic man, as well as “rational man” and “scientific man”, as they reproduce structural inequality (Ibid., 130). The narratives of man and woman as respectively economic and nature bound relies on a cultural definition of what is economic and what is not (Ibid., 130).[6] Our analysis exemplifies how, both men and women integrate household responsibilities and economic considerations, e.g. around manure and land use choices. We argue, that men are not inherently more “economic” in their decision making - and thus more “irrational” if they spend money on alcohol - and that it is simplistic to explain women's investments in children or kitchenware because of their "domesticity". Instead, it is useful to analyse economic strategies by reference to the farmer’s domains of knowledge. Men and women make rational decisions according to the parameters available to them, and, as will be discussed in the following section, through groups they seek to maximise their options[7] and secure their future livelihoods.

[6] An example is the The World Bank’s approach to “Smart Economics” which argue that women unproblematically can be incorporated into the production economy, without recognising their current contributions to both production and reproduction (Chant 2012).
[7] Johnson 2004:1358:

4.3 Agency and Strategies

The following section addresses a third inquiry which is related to women's agency. As accentuated in the previous sections, the role and strategies of women are confined and influenced by societal structures including formal and informal institutions (Chavance 2008). Based on observations and interviews with women participating in financial and social groups as well as women keeping private accounts, we attempt to analyse to what extent these strategies can be understood as alternative ways for women to increase their agency.

4.3.1 Self-help Groups

No word better captures the essence and attitudes among Kenyans to participate in collective self-help groups than *Harambee* ('pulling together'), an idea that gained momentum in the wake of independence during the 1960s (Noreh, 1988). Despite ramifications to the political elite, the true engine propelling the expansion of the idea took shape in the local communities where a strong feeling of cohesion and community development emerged around local projects to help those in need (Ochanda 2013). A mean has been the formation of self-help groups as a welfare strategy to tackle local challenges in communities and to mobilise people with an eye for individual and common economic benefits such as merry-go-rounds. Today, Harambee still constitutes an integral part of daily life in many communities (Ibid.). This is confirmed in our study wherein a substantial part of our informants engaged in self-help groups.

Although the inclination of joining groups is associated with women (Ibid., Johnson 2004), we encountered an equal number of men's and women's groups, 8 respectively, Consistent with Ochanda (2013), women tend to participate in merry-go-rounds where each member on a regular basis contributes a certain amount of money to a common pool, which members then can withdraw to use on what is needed e.g. household procurement, personal investments or school fees. Some men's groups were similar to these, others were established with an eye for group investments, a finding that also applies to a number of women's groups. Moreover, men's groups were mostly associated with their occupational status such as the pastor's group, butcher's group and 'boda-boda' group (for taxi drivers). Their individual economic contribution was averagely higher than women's (Appendix 2). Hence, the prevailing reasoning of both men and women of joining groups was tied to an economic objective of collecting money for investments or procurement of certain items. Further, women joined groups for social

reasons as they used the gatherings to discuss personal challenges, to increase their social status and as reported by Johnson (2004, 1369) to socialise with other women in order to "become a woman".

In order to understand the underlying factors of gendered participation in groups it is necessary to consider the gendered differences in rights and responsibilities within households and how these interrelate with social norms and traditions. Men's responsibilities in relation to larger expenses lead them to seek possibilities, that help them in this regard. According to Johnson (2004), men tend to disfavour self-help groups since they do not meet their economic demands and secondly, because men tend to lack social trust to other men. This is partly contradicted by our findings, as we both encountered men engaged in groups and in the founding of them, as well as men displaying similar attitudes as described by Johnson (Ibid.).

However, the fact that men on average contribute more financially to the groups than women, could indicate that groups become attractive to men if the economic input is high enough as it enables bigger investments. Also men's groups were mainly established around members from the same occupation wherein strong social ties exist.

4.3.2 Formal and informal spheres

The self-help groups further represent an interface wherein formal and informal activities become enmeshed and hence blur the boundaries between formal and informal spheres.

According to Mellor (1997, 129), the exclusion of women from formal economic spheres is tied to the exclusion of nature from economy as well. Women's economic activities with nature become entrenched in informal economic systems, legally closed off from male controlled ways of formal protection (Ibid., 130). Our findings suggest that women are now challenging this structure by engaging in groups, which facilitates an entrance into formally sanctioned economic spheres such as bank loans.

The way formal and informal spheres are crosscutting is multifaceted and range from the constitution of the groups themselves where some have a legal binding structure, to the way groups are saving and investing the accumulated money as well as the type of income source that is underpinning the economic contribution by each member. However, instead of viewing

the two spheres as a dichotomy between formal and informal activities, we argue that these should be interpreted as a continuum due to their interweaving nature.

As earlier emphasised, women primarily get their income from informal activities such as the selling of crops and milk at local markets and in cases where the husband allocates them some money. Whereas men mainly rely on formal income sources as their payment for coffee, tea and macadamia nuts come from official sources. However, this binary perception of 'women-informal' and 'men-formal' is a too simplistic interpretation due to our discoveries of women engaged in formal domains. Whilst women tend to be associated with informal activities, multiple women show a growing entrepreneurship through their engagement in off-farm activities such as town-based businesses selling clothes or shoes or as casual labourers. Likewise, Benjamin (HH#9), Paul (HH#12) and Frederik (HH#19), had wives working in nearby towns as a teacher, business-woman and nurse respectively.

When it comes to savings and investments, the different self-help groups make use of both formal and informal strategies. Before the money is distributed or invested, at least three women's groups explicitly reported that they kept the money formally in one singular account in order to accumulate bigger interest.

Groups can obtain formal bank loans by using members as security, what we term 'social collateral' as the members provide security based on trust to avoid default. A system similar to the 'grameen banking system' (Shukran & Rahman 2011). Hence, social collateral serves as an alternative to conventional types of collateral like land, which, however, still present a formal institutional barrier limiting women's access to formal loans as the vast majority of Kenyan women lack access to property rights, although the new Constitution from 2010 has prohibited gender-based discrimination (Johnson, 2004; Gaafar, 2015). Thus, self-help groups work as doorways for women into more formal spheres, difficult to access individually. These spheres

have more widely been available for men, and their economic possibilities are thus not essentially changed by participation in financial groups, though maybe in scope or easiness. For women, this fundamentally enhances their agency and personal autonomy.

4.3.3 Savings and Investment

Women's private savings and investments constitute ways to expand their agency by ensuring a degree of economic independence, though sometimes through *uninformed consent* by their partner.

A recurring discovery among male and female informants was the practice of keeping separate accounts. This seems to be an inherited strategy of women for decades as described by Maria, 80:

> *"We have learned from our mothers where to hide our secrets."*
>
> Focus group 2.

This finding corresponds with Johnson (2004), who found that the majority of married households were characterised by '*independent management systems*' in accordance with Pahl's (in Johnson 2004) scheme of 'household financial management systems'. In most cases, the spouses were aware of the partner's personal account but not necessarily its size. However, more interestingly, many women are keeping a secret account from their husband. We attempt to deal cautiously with this finding as we are aware of the potentially different meanings given by our participants to the word 'secret' according to the concepts of emic and etic. That is, a woman might describe her account as secret but since we could not confirm the degree of secrecy through triangulation and due to the sensitivity of the topic, we situate it along a continuum. This ranges from separate bank accounts that both partners are fully aware of and know the content of to accounts of full secrecy.

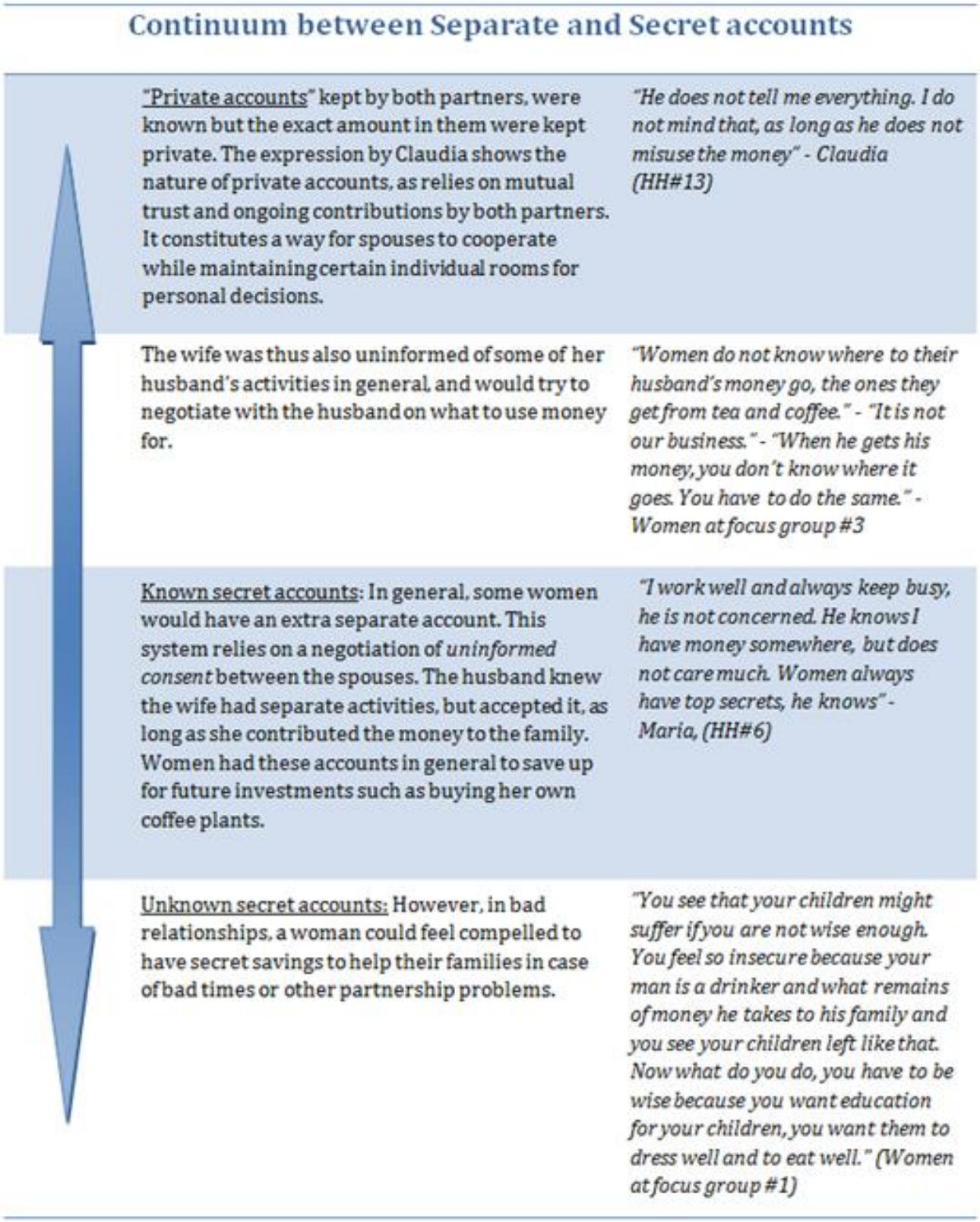


Figure 4.11 Continuum between secret and non-secret personal accounts.

Uninformed consent, as we term it, relies on the separate domains of knowledge and economic patterns of the spouses, while it depends whether the partner is having an off-farm job outside the farm. The structure that is keeping tasks separated in the household, while the partners are working together, also contains the possibility for separate actions. In our four focus groups women distinguished between "in case of" and "in general" reasons to save. "In case of" illustrates an asymmetrical relationship between spouses. Men did not need to keep completely secret accounts, as "in case of" issues, he was not obligated to share his assets with his wife, while she was not protected by formal institutions. Women thus use secret accounts as an active strategy to safeguard against bad times for the entire family, and herself if the husband leaves his marital responsibilities, as well as a way to create economic possibilities for herself by entering formal economic activities (See figure 4.11).

Type of reason	*Reasoning*
Economic independency	Increase economic autonomy in order to reduce the need of asking the husband for money as well as the need of consulting the husband regarding procurements. • *"It is very wise for a woman to have some money somewhere that the husband does not know." -* • *"Why?"* • *"The man is not interested in all the things that she or the children need or is concerned about. A woman keeps the money so that she won't struggle when it comes to that thing" - Maria (HH#6)*
Future security	Ensuring economic safety in case of sudden household changes such as divorce, and as a financial backup regarding future household investments e.g. school fees and doctor visits. • *"Life teaches you a lot – when you get married you realize that the husband might not do all the things you want. So you must save for the future. You must be clever to make ends meet." Hanna - (HH#1)* • *"If your husband drinks the money away then you can use your secret savings to pay the school fees and then you tell him that you have not paid so that he can return that money to you when he get some and then you can put that money in the bank." Gabriella (HH#20)*
Personal aspirations	Save up money for personal aspiration and investments e.g. in bank shares, land or livestock. • *"I save to buy a piece of land. When I get enough money I will disclose the savings to my husband." Hanna - (HH#1)* • "Women use their secret savings to buy a plot or what they want, to do something for themselves." *Gabriella (HH#20)*

Table 4.12 Reasons for women keeping separate accounts.

If we expand the focus to include non-secret private accounts, this entire continuum reflects an embedded practice among numerous women, which we argue can be translated into a way to challenge the structures that confine their agency. We identified three reasons for why women keep separate accounts (Table 4.12). The finding is a unique example of how women seek alternative ways to increase their independence from husbands as well as their autonomy in a society permeated by gendered norms, traditions and culture which marginalise and confine their access to various domains including land ownership and formal income generating activities (Johnson, 2004; Gaafar, 2014). Hence, as stated by the women in Focus group 3 *"Women are empowered to do some things, they otherwise could not".* They thus define and redefine their relation to their natural and social environment albeit of the circumstances and constraints (Rocheleau et al. 1996, 289).

Overall, this analysis reveals signs of women actively seeking to strengthen their social status and autonomy through different strategies such as attending groups and keeping separate accounts. Although these findings aren't revolutionary due to the long history of Kenyans joining groups, *Harambee*, our discoveries, however, reflect indicators of changes in the community exhibited by the growing integration of women into formal spheres traditionally only accessible by males. As we will discuss in the following section, this trend is slowly finding its way into other formal domains such as commercial arenas.

5 Discussion

5.1 Institutional change

A recurring theme in this study has been the reproducing and confining role that various kind of structures have on local livelihoods. An important discussion that relates to the presence of structures is the one of formal and informal institutions, the differences between them and how they affect the daily lives of men and women. Before we dig into a deeper discussion, one recent example clearly encapsulates the differences and characters of formal and informal institutions, the new Constitution from 2010. A focal point of the legal framework is to "*promote gender equality and equity generally*" and to eliminate gender discrimination regarding land and property (Constitution of Kenya 2010, p. 40; Gaafar 2015). Accordingly, The Kenyan Ministry of Agriculture encourages households to include women in processes of decision making and resource management through training by agricultural officers. However, regardless of the change of this formal institution, our discoveries demonstrate that informal institutions such as norms and culture are still highly unchanged, illustrated by the general silence on the issue of unequal gendered access to land and property.

The incompatibility between formal and informal institutional change is associated with the persistence of cultural norms and traditions in a society which takes time to change (Chavance 2008). According to Chavance (2008), informal institutional change takes time due to an embedded inertia, which is highly consistent with the attitudes of both men and women in our study. When asked about perceptions on gender equality, Joseph (HH#6) claimed that the current gender balances should remain. Also Susan, Focus group 1 explained that *"children are equal to us, but the girl should be submissive to her future husband".* Therefore, we argue that the current perception of gender responsibilities with regards to household tasks and control of

crops is part of a social and cultural inheritance from Kenya's colonial past. This is inherently tied to the sharp historic separation of Kenyans and foreign settlers that confined Kenyan farmers to the production of subsistence crops (Kiriti & Tisdell 2002; Heyer 2006).

The ramifications of the policies and the Swynnerton Plan implemented more than 50 years ago are still clearly reflected in Southern Nyeri County with men primarily in control of cash-crops. In the present-day agricultural organisation of households, the accentuated gendered domains of knowledge are in combination with formal and informal institutions reproducing these structural patterns that, broadly speaking, divide men and women into different domains. Through this reproduction, the social and cultural inheritance of informal institutions become deeply entrenched in local mindsets. The practices and attitudes of farmers seem to build on a generational accumulation of values, viewpoints and perceptions (Bourdieu 1977, 73), which makes it difficult for them to deviate from rooted norms and traditions since it will expose them socially. Hence, we argue that the observed gendered division of labour along with a farmer like Isaac (HH#17), whose friends made fun of him because he did the cooking, demonstrate how social norms affect farmers' rights and responsibilities. The constant feedback between socio-cultural factors such as land ownership, division of labour and economic responsibilities are in turn factors that reproduce each other, which make the informal systems of household management difficult to change, even when formal laws are changed.

This is also reflected in our findings that land was a non-issue. Although the new Constitution offers women the ability to own land, the actual uptake is still low e.g. reflected in our data in figure 5.1. Hence, a farmer such as Paul (HH#12), opposed the idea of equal land ownership as it "*kills the work ethic of man*". It was common to encounter farmers who cultivated land belonging to their dead relatives, at least formally. Hence, the need of private ownership of

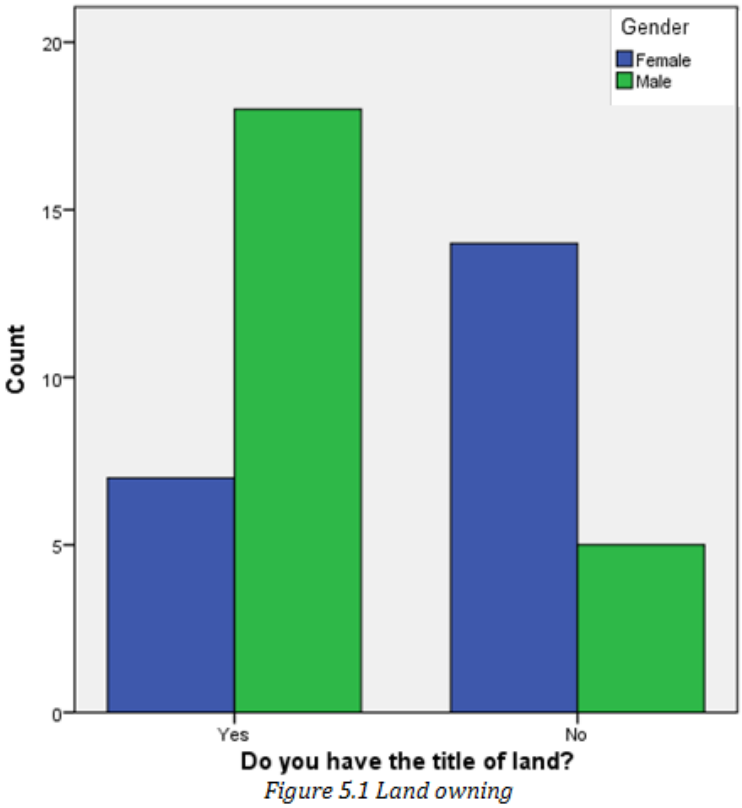


Figure 5.1 Land owning

land is not too prevalent and only arises when farmers need to deal with cooperatives that require some kind of formal title or license. These institutions deprive women without formal land ownership from potential market accesses and might perpetuate their marginalisation. However, a cooperative such as OFCSL is now removing a formal institutional barrier, which previously excluded the majority of women from membership since OFCSL no longer requires land title as a requisite. Today, women just have to bring in coffee to become a member. This is a significant step that has increased the number of female farmers with membership.

5.3 - Certificated gender policy

Amid a highly divided farm organisation between men and women in terms of responsibilities and controls, we have further attempted to look into external factors and mechanisms that shape and influence these current gendered structures by interviewing stakeholders from OFCSL, a Fairtrade certified cooperative. By being Fairtrade certified, OFCSL is obliged to meet specific standards including criteria under the agenda on gender equality and women's empowerment promoted in their 'Gender Strategy' 2016-2020 (Fairtrade International 2015). Accordingly, the strategic consultant, Paul Muhoro, explained that OFCSL recently had integrated gender policies under its 10-policy-framework in order to meet the requirements, since the lack of certificates operate as a barrier to international markets. This framework includes policies such as no gender discrimination, that ⅓ of the managers and members should be women, and the encouragement of farmers to include women in the production and handing in of coffee. That is, we argue, an indicative and illustrative example of how the dynamic vertical interrelations are connecting local actors with global actors like Fairtrade. Hence, as reported by Paul Muhoro, this demonstrate how external factors work as dynamic inputs shaping the policies and practices of OFCSL. As a result, these gender policies might diffuse to the rest of the community and thus affect the informal institutions as well as the practices of famers.

Despite of the reported implementation of gender policies, we found that neither the board of OFCSL nor the 7 committee members, democratically elected by the 6000 male and 3000 female active members from the 17 factories, were women. According to Secretary James Ndegwa *"women simply do not file for the stand although they are encouraged".* However, this also indicate a gap between policy and practice which might relate to several formal institutional constraints[8] hindering the implementation of the gender policy. Another barrier relates to the informal institutions as to file for election one has to compete and vie within a highly male dominated domain, which prevent many women from doing this. The following quote by Paul Muhoro illustrates how household gender asymmetries expand to OFCSL:

> *"When a women marry, she becomes part of her husband's domain. It is the same in the cooperative*."

Although OFCSL might have seemingly limited power in terms of their ability to change the norms and customs of farmers, we argue, nevertheless, that the approach of implementing gender policies in a society wherein women are highly marginalised and in practice excluded from land rights and formal income generating activities, is a step towards a more equal direction. Further, UN's development agenda for 2015-2030 the "Sustainable Development Goals" emphasises gender equality[9]. Accordingly, a future global discourse on gender equality might lead to even higher standards to certificates like Fairtrade.

This brings us back to the issue of institutional change where the temporal scale is an inherent factor regarding informal institutions. One thing is the formal implementation of laws and policies, another one is the actual effects these have on the societal level in practice. Our findings clearly comply with this incompatibility of a temporal lag between formal institutional and informal institutional change, wherein the norms, attitudes and practices of farmers in Southern Nyeri County still reflect gendered asymmetries.

[8] To be elected one must produce min. 500 kg coffee/year, complete secondary school, hold an account and governmental documents of tax compliance and good conduct.

[9] Goal number 5 is to "Achieve gender equality and empower all women and girls" and "to end all forms of discrimination against all women and girls everywhere." (UN 2015).

6 Conclusion

Our study demonstrates a highly gender divided pattern in terms of tasks, responsibilities and controls within households and in the agricultural production. Through our examination of gender and agriculture, we have found that the different economic strategies that men and women employ are connected to broader social norms, culture and traditions, which are defining these gendered patterns. Furthermore, we have identified that formal and informal institutions shape and influence gendered accesses to formal income generating activities, resources as well as land rights.

On a household level, the spatial division of tasks between the private and public sphere leads to different kinds of knowledge which is reflected in the uneven gendered perception of soil fertility and economic possibilities. Hence, we argue that the different ways and places that men and women perform their daily activities are constituting their domains of knowledge.

Through our application of social science and natural science methodologies and the combination of them, we have been able to detect a gendered connection to different crops, livestock and tasks. This relates to gendered differences in responsibilities and controls. However, our results show that there is an asymmetry between what is perceived as being women's responsibilities and what their practical responsibilities are. Although women's activities primarily are confined to informal activities such as intra-household tasks, the selling of crops at the market or as casual labourers, women also find alternative ways into formal spheres. This is illustrated by their engagement in self-help groups, which we argue, is a strategy that challenges the confining structures as women expand their social and economic agency into new spheres, that traditionally have been tied to men. Eventually, we argue that

women are enhancing their autonomy and independence from husbands through their participation in groups as well as by keeping private savings or by private investments. Accordingly, we find that the gendered dualistic understanding of formal and informal spheres is challenged by these women's activities.

Literature list

Bernard, Russell. 2011. *Research Methods in Anthropology - Qualitative and Quantitative Approaches*. Plymouth: AltaMira Press.

Benton Jones, J. Jr. 2012. *Plant Nutrition and Soil Fertility Manual.* Boca Raton: CRC press.

Brady, Nyle C & Ray R. Weil. 1999. *The nature and properties of soils*. Upper Saddle River, New Jersey: Prentice Hall.

Bourdieu, Pierre. 1977. *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.

Buur, Lars. 1999. Når der er mere til oversættelse end sprog. *Den ny verden* 3, 54-72.

CIA. Kenya. World Fact Book. Accessed April 6. Accessed 17.02.2016. https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

Chant, Sylvia and Sweetman, Caroline. 2012. Fixing women or fixing the world? 'Smart economics', efficiency approaches, and gender equality in development. *Gender & Development* 20(3): 517–529.

Chavance, Bernard. 2008. Formal and informal institutional change: the experience of postsocialist transformation. *The European Journal of Comparative Economics*, 5(1), 57-71.

Cohen, Anthony P. 1984. Participant observation. *Ethnographic Research. A Guide to General Conduct*. Edited by R. F. Ellen, 216-229. London: Academic Press.

Deere, Carmen Diana & Magdalena León de Leal. 1987. *Rural women and state policy: feminist perspectives on Latin American agricultural development*. Boulder, Colorado: Westview Press.

DeWalt, Kathleen M & Billie R. DeWalt. 2002. *Participant Observation. A Guide for Fieldworkers*. Lanham: AltaMira Press.

Roy, N. R., A. Finck, G. J. Blair and H. L. S. Tandon. 2006. Plant Nutrition for Food Security, A guide for Integrated Nutrient Management. FAO Fertilizer and Plant Nutrition Bulletin 16. Rome: FAO publications. 58-59.

Fairtrade International. 2015. *Gender Strategy 2016-2020: Transforming Equal Opportunity, Access and Benefits for all.* Bonn, Germany: Bonner Talweg Gaafar, Reem. 2015. *Women's Land and Property Rights in Kenya*. Resource Equity. Accessed April 1. http://landwise.resourceequity.org/guides/8

Gammeltoft, Tine. 2010. Intimiteten. Forholdet til den anden. In *Ind i Verden*. Edited by Kirsten Hastrup, 273-295. København: Hans Reitzels Forlag.

Hansen, Erik Jørgen & Bjarne Hjorth Andersen. 2000. *Et sociologisk værktøj. Introduktion til den kvantitative metode*. København: Hans Reizels Forlag.

Hasse, Cathrine. 1995. Fra journalist til 'Big Mamma'. Om sociale rollers betydning for antropologers datagenerering. *Tidsskriftet for Antropologi*, 31, 53-64.

Heyer, Amrik. 2006. The gender of wealth: markets & power in Central Kenya. *Review of African Political Economy,* 33(107), 67-80.

Johnson, Susan. 2004. Gender Norms in Financial Markets: Evidence from Kenya. *World Development*, 32(8), 1355–1374.

The Constitution of Kenya. 2010. Chapter Four - The Bill of Rights. Part 5 - Kenya national human rights and equality commission, 59 (b), 40. Chapter Five - Land and Environment. Part 1 - Land, 60 (f), 42. In *Laws of Kenya. Revised Edition 2010*. Published by the National Council for Law Reporting with the Authority of the Attorney General.

Kiriti, Tabitha & Clement A Tisdell. 2002. *Gender, Marital Status, Farm Size and other Factors Influencing the Extent of Cash Cropping in Kenya: A Case Study.* University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

Kiriti, Tabitha & Clement A Tisdell. 2003a. *Commercialisation of Agriculture in Kenya: Case Study of Policy Bias and Food Purchases by Farm Households*. University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

Kiriti, Tabitha & Clement A Tisdell. 2003b. *The Relationship between Commercial Agriculture and Food Availability to Kenyan Farm Families: A Case Study*. University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

Mbataru, Patrick. 2007. Women in the coffee society: the case of Nyeri, Kenya*. Études rurales* 180, 101-115.

Mikkelsen. 2005. Participatory Methods in Use. In *Methods for Development Work and Research: A New Guide for Practitioners.* SAGE Publications Inc.

Noreh, A. V. 1988. *Harambee in Kenya: A Bibliography*. Nairobi: University of Nairobi Libraries.

OCB. 2016. Office of the Controller of Budget Republic of Kenya. Bima House, 12th Floor, Harambee Avenue Nairobi. Accessed April 7. http://cob.go.ke/counties/nyeri-county/

Ochanda, Richard Muko. 2013. Socio-economic empowerment of communities by grassroots organizations: The case of the Harambee self help groups in Kenya. *Corvinus Journal of Sociology and Social Policy*, 4(1), 55–79.

Quisumbing, A. R, & R. Meinzen- Dick, T. L. Raney, A. Croppenstedt, J. A. Behrman, A. Peterman. 2014. Chapter 1: Closing the Knowledge Gap. In *Gender in Agriculture,* 3-27*.* Edited by Agnes R.

Quisumbing. Dordrecht 2014: The Food and Agriculture Organization of the United Nations, Springer Science & Business Media B.V.

Rocheleau, Dianne, Barbara Thomas-Slayter and Esther Wangari. 1996. *Feminist Political Ecology: Global issues and local experiences.* London: Routledge.

Rubow, Cecilie. 2003. Samtalen. Interviewet som deltagerobservation. In *Ind i verden.* Edited by Kirsten Hastrup, 227-245. København: Hans Reitzels Forlag.

Strang, Veronica. 2010. Mapping histories: cultural landscapes and walkabout methods. In *Environmental Social Sciences. Methods and Research Design*. Edited by Ismael Vaccaro et al., 132-156. Cambridge: Cambridge University Press.

Shukran, Md. Khaled & Farhana Rahman. 2011. *A Grameen Bank Concept: Micro-credit and Poverty Alleviation Program in Bangladesh*. Bangkok: International Conference on Emerging Trends in Computer and Image Processing.

Tjørnhøj-Thomsen, Tine. 2003. Samværet: Tilblivelse i tid og rum. In *Ind i verden. En grundbog i antropologisk metode*. Edited by Kirsten Hastrup, 93-117. København: Hans Reitzels Forlag.

UN. 2015. *Sustainable Development Goals*. Accessed April 6. https://sustainabledevelopment.un.org/?menu=1300

Weil, Ray R., Islam, Kandikar R., Stine, Melissa A., Gruver, Joel B., Samson-Liebig Susan E. 2003. *Estimating active carbon for soil quality assessment: A simplified method for laboratory and field use.* American Journal of Alternative Agriculture 18 (1).

Appendix

Appendix 1 Table of informant households and used methods

#	Pseudonym	Questionnaires	Semi-structured	Matrix Rank.	Nutrient Flow Maps	Soil samples	Soil perception map	Cultural Map	Free listing
1	Mark, Hannah & niece	X	X	X	X	X	X	X	
2	Bella & John	X						X	
3	Laura & Susan	X	X					X	
4	Meredith	X	X	X		X	X		
5	Anna	X	X	X		X	X		
6	Marie & Joseph	X	X	X		X	X	X	
7	Ruth		X	X	X	X			X
8	Jacob	X	X	X	X	X			X
9	Benjamin	X	X	X	X				X
10	Theodore	X	X						
11	Michael		X						X
12	Paul		X		X				X
13	Claudia	X	X	X					X
14	Jeremy & Martha		X		X			X	X
15	Rachel	X	X	X	X	X	X	X	
16	Irene & Raphael		X	X	X ♂ X ♀				
17	Isaac	X	X						
18	Lydia		X	X					X
19	Frederick		X						
20	Gabriela	X	X					X	X
21	Serendipity								X

22	Nathan and Martha	X	X

Appendix 2 Financial Groups overview

Name	Type/Characteristic	Input	Output	Security/Collateral
Investment group	Investment group: up to 22 members	100 ksh/ individual, 200/ family	Loans	Home items
Self help group	Finance group: Invests in: Farming, livestock business, coffee, horticulture & school fees.	As much as possible	Share according to what they put in. Loans: Individual, group, family	Husband must be the guarantee.
Merry-go-Round	Finance group: up to 26 members Invests in: School fees, business, farming (livestock), household assets, materials for producing baskets.	Min: 200 ksh/month	Loans, get it cash - family can help pay it back.	Furniture, cow, tanks
Marry-go-round & Investment	Finance group: Basket-group and soap making. up to 14 members. Invests in: Start a business (new shoes, clothes, grocery), kitchen asserts, livestock, buy land	Min 200ksh (per share)	Loans, 10% interest, 4 months. Shares - interest will be shared according to number of shares	Social collateral
Nairobi-group	Finance group: 30 members	500 ksh/ month	Consecutive payment	N/A
Bio-gas grounp	Finance group: The women meet to do a merry-go-round and learn about bio-gas.	N/A	Consecutive payment	N/A
Merry-go-round #01	Finance group: Not any particular focus but only for men. Invests in: Leisure and beers	200 ksh pr. month	N/A	N/A
Merry-go-round #02	Finance group: Not any particular focus but only for women. 20 members. They meet 2/week. Invests in: Money put in a bank account.	200 ksh pr. month	Household expenditures	N/A
Merry-go-round #03	Finance group: 70 members, 25-75 years old. Invests in: Household items, small businesses such as a cow, clothing.	200 ksh	Loans, small payment once a year	N/A

Boda-Boda motor-taxi group	Profession group: Motorbike/taxi driver group, Merry-go-round. 33 members. Invests in: Covering bureaucratic expenses e.g. licenses	1000 ksh/ year	Everyone should receive some money each year.	N/A
Construction worker groups	Profession group: 7 members.	1000 ksh/ month	Bank - bigger investment account. Withdrawals were possible	N/A
Karima Rabbit Breeding Group	Profession group: a social group where they talk and share information about rabbit breeding, consultancy. Invests in: livestock	N/A	N/A	N/A
Butcher's merry-go-round	Profession group: 24 members, 5 years old and the group has a strong social solidarity and commitment. Invests in: livestock for business	500 ksh/month	N/A	N/A
Pastor welfare group	Profession group: 19 members from Othaya Constituency, only for pastors	2000 ksh/ month	Group investment - bought 2 plots together	N/A
Women's merry-go-round	Lottery: 10 members Invests in: Household expenses	100 ksh/ month	1,000ksh for the winner/month	none

Appendix 3 Results from Soil Sample Analysis

HH-field	Crop	Cash/Sub	pH	MnoxC	C:N ratio
1-1	Tea	Cash	4,31	1440	12,4325
1-2	Coffee	Cash	5,18	945	10,1308
1-3	Maize	Sub	6,14	855	9,4838
4-1	Banana	Sub	6,63	810	9,1994
4-2	Maize	Mix	5,29	585	8,4057
4-3	Napier Grass/Pumpkins	Sub	5,83	1080	9,4452
5-1	Maize	Mix	6,01	495	8,6296
5-2	Coffee/Bananas	Mix	6,02	810	9,3607
5-3	Napier Grass	Sub	6,04	720	8,5964
6-1	Arrow Roots	Sub	6,08	540	9,2731
6-2	Coffee	Cash	5,16	585	10,9332
6-3	Maize/beans	Sub	5,71	450	8,8951
7-1	Maize/beans/potatoes	Mix	5,55	630	8,0603
7-2	Coffee	Cash	6,02	855	9,3972
7-3	Napier grass	Cash	5,64	450	7,9766
8-1	Cabbage	Sub	5,64	810	9,0608
8-2	Kale	Sub	6,14	810	9,2347
15-1	Maize	Mix	6,95	630	7,562
15-2	Kale	Sub	6,71	810	9,5474
15-3	Coffee	Cash	5,67	1125	9,9369
Tea-1	Tea	Cash	4,43	1215	11,1792
Tea-2	Tea	Cash	4,35	1485	10,2962
Tea-3	Tea	Cash	5,32	1215	11,0993

Legend	
	above ideal range
	within ideal range
	below ideal range

Appendix 4 Soil Sample Analysis correlated to Gender and Perception of soil quality

HH-field	Crop	Soil Perception		pH	MnoxC	C:N ratio
		Female	Male			
1-1	Tea	Middle	Good	4,31	1440	12,4325
1-2	Coffee	Middle	Good	5,18	945	10,1308
1-3	Maize	Very Good	Good	6,14	855	9,4838
4-1	Banana	Good		6,63	810	9,1994
4-2	Maize	Good		5,29	585	8,4057
4-3	Napier Grass/Pumpkins	Good		5,83	1080	9,4452
5-1	Maize	Good		6,01	495	8,6296
5-2	Coffee/Bananas	Good		6,02	810	9,3607
5-3	Napier Grass	Good		6,04	720	8,5964
6-1	Arrow Roots	Wet	Difficult	6,08	540	9,2731
6-2	Coffee	Fertile	Good	5,16	585	10,9332
6-3	Maize/Beans	Less Fertile	Good	5,71	450	8,8951
7-1	Maize/Beans/Potatoes	Good		5,55	630	8,0603
7-2	Coffee	Good		6,02	855	9,3972
7-3	Napier grass	Good		5,64	450	7,9766
8-1	Cabbage		Good	5,64	810	9,0608
8-2	Kale		Good	6,14	810	9,2347
15-1	Maize	Very Good		6,95	630	7,562
15-2	Kale	Very Good		6,71	810	9,5474
15-3	Coffee	Best		5,67	1125	9,9369
Tea-1	Tea	Fertile		4,43	1215	11,1792
Tea-2	Tea	Fertile		4,35	1485	10,2962
Tea-3	Tea	Less Fertile		5,32	1215	11,0993
Legend	above ideal range					
	within ideal range					
	below ideal range					

Appendix 5 Results from Questionnaires

5.1 Question 5: Household size

Adults: Average: 3.93
Min: 1 - Max: 2
Children: Average: 3,20
Min: 0 - Max: 10

5.2 Question 7: Number of members of the household, living outside of the village in Southern Nyeri County.

No. of household living away		
N	Valid	45
	Missing	1
Mean		2,56
Median		2,00
Std. Deviation		2,051
Range		10
Minimum		0
Maximum		10

5.3 Crosstabulation of having the title of land according to gender

Gender * Do you have the title of land? Crosstabulation

Count

		Do you have the title of land?		
		Yes	No	Total
Gender	Female	7	14	21
	Male	18	5	23
Total		25	19	44

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,031[a]	1	,003

5.4 Crosstabulation of ownership of land according to gender

Gender * Who owns you land? Crosstabulation

Count

		Who owns you land?		
		Owned by themself	Owned by spouse or parent	Total
Gender	Female	2	19	21
	Male	14	9	23
Total		16	28	44

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,506[a]	1	,000

Appendix 6 Matrix Ranking Data

Food crop (1) - Cash crop (7)																	
Participants			Crops									Livestock					
HH#	Men	Women	Coffee	Tea	Maize	Beans	Avocado	Potato	Napier Gras	Banana	Macadamia	Cow Milk	Cow Meat	Goat Milk	Goat Meat	hicken Egg	hicken Mea
1	x		7	7	1		6	1	1	1	7	6		1	7	1	1
1		x	7	7	1		6	1	1	1	7	4	7	1	1	1	1
4		x	7		3		1	1	4	2		4	7			1	1
5		x	7		3	1	4	1	1	2	7	4	7	4	7	1	1
6		x	7		2		1		1	3		4		4		4	
6	x		7		1	1	4		2	4	6	4	7	1	4	1	4
7		x	7		2	2			7	2							
8	x		7		1		4		1	1	7			1	1	1	1
9	x		7	7	2	2	1	1	1	1	7	1	7	1	1	1	1
13		x	7	7	1	1	5	1	4		5			1		2	
14		x	7	7	4	4		4	1		6	4				4	
15		x	7		1	1	7	1	1	4	7	4				1	1
18		x	7	7	4	4		4		4		4	7	7			
Average men			7,0	7,0	1,3	1,5	3,8	1,0	1,3	1,8	6,8	3,7	7,0	1,0	3,3	1,0	1,8
Average women			7,0	7,0	2,3	2,2	4,0	1,9	2,5	2,6	6,4	4,0	7,0	3,4	4,0	2,0	1,0

Women (1) - Men (7)																	
Participants			Crops									Livestock					
HH#	Men	Women	Coffee	Tea	Maize	Beans	Avocado	Potato	Napier Gras	Banana	Macadamia	Cow Milk	Cow Meat	Goat Milk	Goat Meat	hicken Egg	hicken Mea
1	x		4	4	2		4	4	6	7	7	4		4	4	4	4
1		x	7	7	2		4	1	7	1	7	4	7	4	7	1	1
4		x	7		4		4	4	7	1		7	7			1	3
5		x	7		1	1	2	2	6	1	7	7	7	7	7	1	1
6		x	7		1		1		4	1		6		4		1	
6	x		4		2	1	5		4	3	5	4	4	4	4	4	4
7		x	4		4	4			4	4							
8	x		4		1		4		4	4	4			4	4	4	4
9	x		7	7	1	1	1	1	2	1	6	1	6	1	6	1	6
13		x	7	4	1	1	4	1	4		4			4		4	
14		x	4	4	4	4		4	4		4	4				4	
15		x	6		1	1	4	1	4	4	4	6				4	4
18		x	4	4	1	1		1		4		4	4	4			
Average men			4,8	5,5	1,5	1,0	3,5	2,5	4,0	3,8	5,5	3,0	5,0	3,3	4,5	3,3	4,5
Average women			5,9	4,8	2,1	2,0	3,2	2,0	5,0	1,7	5,2	5,4	6,3	4,6	7,0	2,3	2,3

Appendix 7 - Synopsis

ILURNM Course, SLUSE 2016, University of Copenhagen

Gender and Agriculture

Crops, money and food - Gendered access to resources and agricultural decision making within households in Giathenge, Kenya.

Draft Synopsis

Word Count: 2.618

Supervisors:

Ebbe Prag , Daniel Ortiz Gonzalo, Martin Skrydstrup, Kenyan professors

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Date: 25/02/2016

1. INTRODUCTION

In Kenya, agriculture plays an intrinsic part of the domestic economy counting 25 % of the national GDP and around 80 % of the population are engaged in agriculture either directly or indirectly (CIA 2016). This underlines the integral importance agriculture has for people's livelihoods. However, despite the vast importance of agriculture in the Kenyan society in terms of employment and food production for household consumption as well for markets as an income source, agriculture is also a social and economic domain that reflects and reveals strong societal hierarchies, structures and inequalities crosscut by differences in class, age, ethnicity, religion and gender (Mackenzie 2003).

To grasp current societal formations and structures in agriculture, a retrospect of Kenya's colonial past must be emphasised. During the first half of the 20th century, colonial land use policies and restrictions were implemented, which severely affected and marginalised African farmers who were restricted from engaging in cash-crop production (Kiriti & Tisdell 2002). The societal implications of these were the emergence of a '*dualistic agricultural system*' with African farmers working on smallholdings designed for subsistence cultivation along with European settlers controlling huge farmlands producing cash-crops (Ibid:2). However, this was soon to be changed with the introduction of the Swynnerton Plan in 1954, part of a comprehensive development program aimed at transforming agriculture into a market-oriented sector steered to produce for export (Ibid.). The Plan comprised registration of land holdings to African male farmers who were encouraged to shift their subsistence practices towards cash-crop production, predominantly concentrated around coffee. Although the development agenda gave favourable conditions and rights to male farmers, the policies completely neglected women who were marginalised in the agricultural production. According to Heyer (2006), the prevailing national development agenda that reformed the agricultural sector created a state-centered discourse privileging male controlled cash-crops as coffee associated with connotations of *progress*, *modernity* and *prosperity*. Consequently, women in this so-called *coffee-society* were relegated to subsistence farming, housekeeping and carers of the land of their husband's (Ibid., Mbataru 2007). The commercialisation of agriculture initially introduced in the 1950s was further pursued by the Kenyan Government after independence in 1963, which perpetuated the marginalised role of women during the restructuring of communities and agricultural production (Ibid.).

The imprints of the early phases of the commercialisation are still detectable in the today's Kenyan society wherein a distinct division of labour in agriculture between men and women exists (Fischer & Qaim 2012). However, as international coffee prices have fluctuated since the 1970s, agricultural production has been diversified and the division of labour reformulated. In the current *post-coffee* society, crops previously relegated to women by men as unimportant, are now seen by men as new paths to income as the

international trade opens up (Heyer 2006). This leads men to enter production of food crops for cash, but not subsistence crops (ibid.).

A vast body of literature (Kiriti & Tisdell 2002, Kiriti & Tisdell 2003a, Kiriti & Tisdell 2003b, Heyer 2006, Mbataru 2007, Fischer & Qaim 2012, Muriithi 2014) sheds light on the issue of gender relations and equity in Kenyan agriculture. But current literature presents diverging perspectives on women's possibilities in the post-coffee society and to the question whether women are gaining legitimate power or need to construct subaltern paths for action. While Mbataru (2007) argues that women have become the dominant figure, as they gain the same opportunities as men, Kiriti & Tisdell (2002) argue that women lose control over property as men move into crops traditionally perceived as female. We want to explore this academic schism and to discuss whether the diversification in agriculture leads to a change in the recognition of female work in Othaya in light of The Kenyan constitution of August 2010 which explicitly granted women the same legal rights as men (National Council for Law Reporting 2010).

Our focus is especially important, as it falls in line with the recent increased global focus and awareness of the essential role of women in agriculture regarding poverty reduction (Quisumbing et al. 2014). Additionally, according to the Kenyan Institute of Policy Analysis and Research (IPAR) a lack of protection of women's rights over access to and control over natural resources is a major factor in hampering poverty eradication in the country (IPAR 2002 in Mbataru 2007). A major theoretical framework within our research will thus be Feminist Political Ecology which considers gender a critical variable in shaping resource control together with class, culture and ethnicity. This scholarly trend unites ideas from feminist cultural ecology, geography and political ecology and looks at how conceptions of gender roles shape access to natural resources (Veuthey & Gerber 2010, Fonjong 2008, Cleaver 2000).

The field for this enquiry is farmers and their agricultural production as a way to produce goods both for sale and for household consumption. Our aim is to analyse how intra-household gender relations and agricultural production interrelate. That is, not only how gender relations are a factor in shaping the actions of farmers and the intra-household power hierarchies, but also how access to resources and material factors within agriculture shape gender roles.

Thus, this research project is a critical analysis of the way gender and farming are culturally constructed in Giathenge, Nyeri region, Kenya where agriculture is the mainstay of the economy and women contribute to 60-80 percent of the total agricultural labour (Ministry of Planning and National Development 2012). As we enter a field wherein various factors are shaping the interrelations between agriculture and gender, we are attentive to this complexity why we aim to take into account the role of factors such as marital status,

wealth, household size, land ownership, land rights, material resources, religion, and location, and thus we argue, that each issue cannot be seen isolated from the other. During our time in the field, our methodological approaches and empirical findings will urge us to define what factors are more relevant and pressing regarding our project, and thus help us to narrow the scope of our analysis.

As a further inquiry we have also identified a key problematic in the relation between the kind of crops farmers cultivate, their commercial status and value, and the gender of the farmers. Crops are categorised within a commercialisation spectrum, ranging from purely for sale to consumption, and a spectrum ranging from edible to non-edible. Crops can be recategorised on the first spectrum according to various factors, *inter alia* market price, climate, gender and nutritional household needs.

Cash from the sale of produce is needed as privatisation of public welfare becomes more widespread, while production of food is vital, as networks of food sales become less productive with the dwindling coffee production (Kiriti &Tisdell 2002:4). This leads to a conflict of interest between cash-crops and subsistence crops. International financial institutions support the Kenyan government in encouraging the export of cash-crops targeted for international market with an underlying aim of attaining a positive trade balance. However, commercialisation does not necessarily lead to a higher standard of living for farming households in local communities as male headed households tend to favour non-food expenditures over basic needs such as food resulting in reduced food availability for women and children within the household (Ibid., Kiriti & Tidsell, 2003a). This pattern suggests that potential intra-household conflicts between men and women might occur regarding control over and access to resources. Accordingly, in this study we attempt to explore and examine the interface between men and women in agricultural production in terms of how resources are allocated within households in our study site in Giathenge.

2. OBJECTIVES

To study the interconnection of gender and agriculture in Giathenge in terms of how gendered access to and control over resources within households are connected to agricultural production of cash-crops and subsistence crops. Within this research project on the development of gendered rights and accesses in relation to agricultural production as a livelihood strategy and broader societal tendencies we search to enquire within the following themes:

a) Division of labour and responsibilities within households.
b) The relationship between risk aversion and the diversification of crops within one household's farming areas regarding money and food.

c) Intra-household power relations regarding gender and age: control of money and income sources, agricultural inputs, transportation options, market access, control of and access to land of different qualities.

2.1 Problem statement

The research questions identified from the existing literature combined with the methods relevant and probable within our timeframe and available material leads us to formulate this draft problem statement:

How are gendered access to resources within households in Giathenge, Kenya connected to crop diversification and agricultural choices, and how are the allocation of resources between different livelihood strategies negotiated between genders and across ages?

2.2 Research Questions

1) What are the intra-household gender divisions of labour in Giathenge, Kenya?
2) How are the interrelations between agricultural production and gender roles within households?
3) What is the correlation between land, soil fertility and crop selection?
4) How do social norms and group relations affect decision making and material distribution within the household?

3. METHODS

3.1 Key informants

Criteria for our selection of informants:

- **Ideally**: 20-30 households composed of a man and a woman actively involved in agriculture/farming (subsistence and cash-crop). To increase validity of our research and to get more knowledge of local structures and division of labour we aim to include a number of men and women living without a spouse, either as single, widowed or due to work migration. We need to find out who is the head of household in cases of labour migration.
- **Minimum requirement**: at least one household member must be an active farmer.
- **Clarifying inquiries:**
    - At what age or event are you considered a man and a women?
    - Location of household.

3.1.1 Additional informants:

Talk to school leaders, priests and NGO in the area about gender, agriculture and education.

3.2 Social science methods

3.2.1 Questionnaires

Gathering quantitative data on labour hours, crop yield and productivity, expenditures, income sources, activities, priorities of expenditures etc.

Random Sampling.

3.2.2 Semi-structured and unstructured interviews

Interviews with people alone or in pairs with focus on the division of labour and types of crops in relation to gender.

These kind of interviews can also be structured as *grand tours*[10] or t*ask related tours*[11], where informants are asked to guide us around their community with general or specific objectives in mind. Most will happen as we visit people at their houses or farming plots.

3.2.3 Participant observations

At all times will observations about gender roles in the community at large be noted to use as context for the report itself. If possible, "*a day in the life*" with a female and male farmer would be very enlightening for group members, and will allow us to use our own gender diversity in the group.

3.2.4 Focus groups/Group interviews

Structured group interviews with men and women from different age groups, separately and together, will allow us to gather information on perceptions and power dynamics within the village.[12] The way of conversation is as much empirical data, as what is actually spoken about. At least two members of the group will thus have to participate in order to fill the two roles as observer and group-leader.

3.2.5 Cultural Mapping[13]

Allowing farmers to individually map their world on a blank piece of paper which will give us valuable insight into priorities, usages and accesses of people of different roles.

[10] Spradley 1979, p. 87.
[11] Spradley 1979, p. 86.
[12] Russel Bernard 2010, p. 175.
[13] Strang, 2010.

3.2.6 Transect walk

A walk through the village or community with locals (women and men separately) to get an understanding of the study area and the daily activities of the locals. Further, it can provide an insight into gendered perceptions of the natural and built environment, the village e.g. (FAO).

3.2.7 Ranking and "Free listing"

Methods to activate the interviewed in describing different aspects of their daily lives. Ranking can be used with prepared photos while free listing requires an interpreter to write down truthfully what people say in the correct order. The results are most telling if we can have many observations to compare.[14]

3.2.8 Matrix Ranking

From Mikkelsen (2005;100). Could be a useful method to visualise how men and women rank and prioritise different crops in terms of some selected criteria that we chose on our own or in collaboration with them.

3.3 Natural Science methods

3.3.1 Soil sampling[15]

Examine the correlation between soil quality, determined by our selected variables, and agricultural land distributed between men and women through a Paired Sample T-test[16]. Our main objective is to determine if men and women perceive the quality of soil in different or the same way, and how that relates to soil science definitions of the quality of the soil. We will then see if the distribution of soil of good quality between men and women within the household is even - and if not, how the division is in relation to the choice of crops on that field.

3.3.2 GPS mapping

Charting the routes and areas that men and women of different ages use respectively with the possibility of comparing these with official documents as well as with the perceived distances covered by men and women respectively. The size of farms owned or used by women are going to be compared to those of men, in addition to their respective distance from the village or a paved road. This can happen in relation to unstructured interviews or the transect walks.

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[14] Russel Bernard 2010, p. 224.
[15] Kiriti & Tisdell, 2002, p. 21, *6.1 Regression Results with Discussion*
[16] Paired Sample T-test https://www.statisticssolutions.com/manova-analysis-paired-sample-t-test/

3.3.3 Mapping via printed satellite maps

Measuring and comparing different areas with regards to access, control and titles of men and women. Compare pictures over time to detect land use and land cover changes, and to see if the sizes of plots have changed over time. This method will be part of our group interviews.

3.3.4 Nutrition flow mapping

Will help visualise the farm management practices, especially regarding the soil fertility and the decision making process. We will analyse both the resource use and output of several systems within the overall household (incl. activities, crops and animals).

3.4 Sampling Methods

We will use random sampling for the questionnaire. In order to use our quantitative population to find informants for qualitative interviews and PRA methods, we will continually structure the results from the questionnaire. This will insure that we get some informants with a wide range of perceptions and background as well as access to informations within the statistical average group. Further we will find our informants through the snowball effect and possibly through gatekeepers that we will encounter in the field. Regarding the soil sampling, we will settle on a sampling method in the field according to possible measures.

3.5 Decisive factors for success of enquiries

- Access to women and men equally, of a wide age spectrum
    - Kiriti & Tisdell (2002, p. 11) outline 5 possibilities for the low respondence rate of their own questionnaire that we will have to be mindful of minimising.[17]
- Access to a wide spectrum of households within the wealth spectrum.
- The sensitivity of the issue can be underplayed by focussing on the continuum of cash-crops and food crops, and land and labour distribution between these when presenting the study.
- We will need to position ourselves as on level with the locals to gain their full cooperation, and not seem like we are representatives from the state or some large international organisation.[18] The

[17] (1) the women were too busy as it was during the short rains and there were food crops in the fields and coffee, tea, pyrethrum and other cash crops were being harvested
(2) the husbands refused to give permission in a number of cases,
(3) the husbands were suspicious that their wives were being incited to divorce or disobey them,
(4) the households thought that we had been sent by the government and since Nyeri district is an opposition zone, they would not respond kindly to any government functionaries, and
(5) the households did not perceive any direct personal benefit from answering the questions.
[18] Peter Pels (1999), p. 113.

Kenyan students are imperative in this regard. Further due to our sexes we will have different accesses and abilities to position ourselves in different ways.

- We need to be aware of the multitude of factors that might influence what's being cultivated: Gender, social status, ethnicity, wealth of household, number of cows (access to manure), land rights and title deeds.

5. LITERATURE OVERVIEW

Boserup, Esther. 1970. Woman's Role in Economic Development, New York: St. Martin's Press.

Caretta, M., Börjeson, L. 2015. Local gender contract and adaptive capacity in smallholder irrigation farming: a case study from the Kenyan drylands. *Gender, Place and Culture: A Journal of Feminist Geography,* Vol. 22(5):644-661.

CIA. Kenya. *World Fact book*. Accessed 17.02.2016. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

Cleaver, F. 2000. Analysing gender roles in community natural resource management: negotiation, life courses and social inclusion. *IDS Bulletin* 31(2):60-67.

Comaroff, John & Jean. 1997. *Of revelation and revolution. Volume 2: The Dialectics of Modernity on a South African Frontier.* United States: University Of Chicago Press.

Croppenstedt, A., Goldstein, M., Rosas, N. 2013. Gender and Agriculture: Inefficiencies, Segregation, and Low Productivity Traps. *World Bank Research Observer* 28 (1):79-109.

Ellis, A. et al. 2007. *Gender and Economic Growth in Kenya Unleashing the Power of Women*. World Bank: World Bank Publications.

FAO. Annex Facilitator's reference material. Accessed 19.02.2016. Retrieved from http://ftp.fao.org/agl/agll/farmspi/FARM_refmat.pdf.

Fonjong, L 2008. Gender Roles and practices in natural resource management in the North West Province of Cameroon. Local Environment. *The International Journal of Justice and Sustainability* 13(5):461-475.

Heyer, Amrik. 2006. The gender of wealth: markets & power in Central Kenya. *Review of African Political Economy* 33(107):67-80.

Kiriti, Tabitha & Clement A Tisdell. 2002. Gender, Marital Status, Farm Size and other Factors Influencing the Extent of Cash Cropping in Kenya: A Case Study. Working Paper No. 26. University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

Kiriti, Tabitha & Clement A Tisdell. 2003a. Commercialisation of Agriculture in Kenya: Case Study of Policy Bias and Food Purchases by Farm Households. Working Paper No. 32 University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

Kiriti, Tabitha & Clement A Tisdell. 2003b. The Relationship between Commercial Agriculture and Food Availability to Kenyan Farm Families: A Case Study. Working Paper No. 33. University of Queensland, School of Economics: Social Economics, Policy and Development Working Papers.

--- 2005. Family size, economics and child gender preference: a case study in the Nyeri district of Kenya. *International Journal of Social Economics* 32(6):492-509

Mackenzie, Fiona. 1989. Land and territory: The interface between two systems of land tenure, Murang'a district, Kenya. *Africa* 59 (1):91-109.

--- 1991.Political Economy of the Environment, Gender, and Resistance under Colonialism: Murang'a District, Kenya, 1910-1950. *Canadian Journal of African Studies* 25(2):226-256.

--- 2000. Contested Ground: Colonial Narratives and the Kenyan Environment, 1920–1945. *Journal of Southern African Studies* 26 (4):697-718.

--- 2003. Land Tenure and Biodiversity: An exploration in the Political Ecology of Murang'a District, Kenya. *Human Organization* 62 (3):255-266

Mbataru, Patrick. 2007. Women in the coffee society: the case of Nyeri, Kenya. *Études rurales* 180:101-115.

Ministry of Planning and National Development. 2012. *Nyeri Development Plan.*

Muriithi, B. W. 2014. *Commercialization of Smallholder Horticultural Farming in Kenya : Poverty, Gender, and Institutional Arrangements*. Frankfurt am Main: Peter Lang AG.

National Council for Law Reporting. 2010. *The Constitution of Kenya.*

Quisumbing, A. R, & R. Meinzen- Dick, T. L. Raney, A. Croppenstedt, J. A. Behrman, A. Peterman. 2014. Chapter 1: Closing the Knowledge Gap. In *Gender in Agriculture,* 3-27. Edited by Agnes R. Quisumbing. Dordrecht 2014: The Food and Agriculture Organization of the United Nations, Springer Science & Business Media B.V.

Veuthey S. & Gerber J.F. 2010. Logging conflicts in Southern Cameroon: A feminist ecological economics perspective. *Ecological Economics* 70:170-177.

Walsh, Janet. 2005. Women's Property Rights Violations in Kenya. In *Human Rights and Development: Towards Mutual Reinforcement.* Edited by Alston, Philip & Robinson, Mary. New York: Center for Human Rights and Global Justice, New York University.