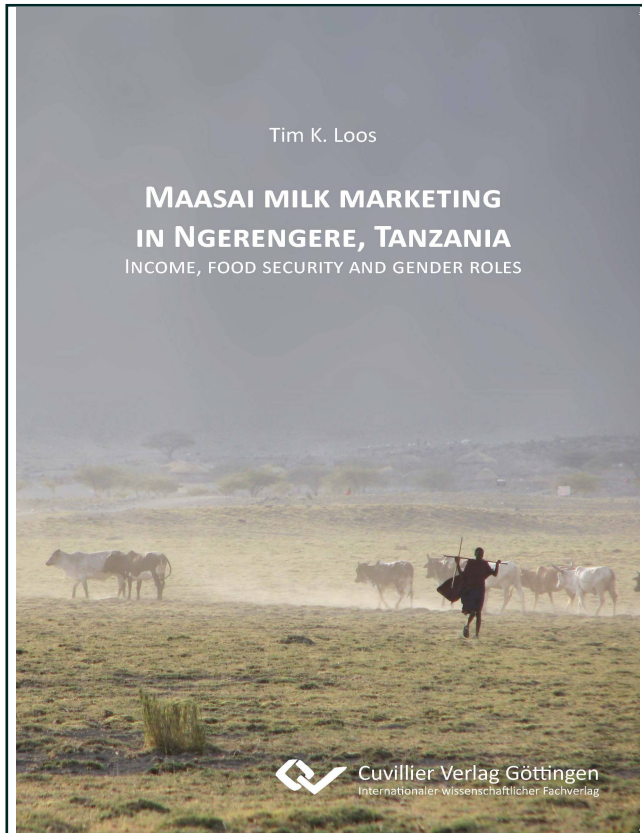




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Maasai milk marketing in Ngerengere, Tanzania
Income, food security and gender roles



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Chapter 1

1. Introduction

1.1 General introduction

Pastoralism is the livelihood strategy of choice for many people worldwide. The production system is based on utilising grassland areas for rearing livestock and is estimated to be practiced globally by about 120 million households. Most of those families (50 million) live in the vast Sub-Saharan rangelands of Africa, particularly in East Africa. They represent about 12% of the rural population (Rass, 2006, based on Thornton et al., 2002). Depending on countries and sub-national regions the importance of livestock and pastoralism varies.

In Tanzania, livestock is one of the major agricultural sub-sectors and generates 4.7% of the national gross domestic product (URT, 2012a). Although about one third of agricultural households keep livestock, the share of pastoralists and agro-pastoralists is only 3% and 7%, respectively (URT, 2013). Yet, they are the group making use of the marginal rangeland (ca. 40% of the country's land cover) not suitable for cropping, and hence sensibly contribute to the national economy.

In addition, livestock plays an important role for welfare at the household level by providing services (transport, draught power, dung used for construction) and animal products (meat, milk, eggs) for home consumption. However, despite the general recognition of such non-monetary benefits and their importance for food security, there are only few in-depth studies based on quantitative data that address pastoral diets and nutrition. A clear and current, yet superficial insight into the dietary spectrum of Tanzania's Maasai pastoralists could only be found in Oiye et al. (2009) and Hansen et al. (2010). Other literature either addresses caloric terms of trade (Degen et al., 1998; Dietz et al., 2003; Zaal, 1999) or compares different wealth groups (e.g. Brockington, 2001; Grandin, 1988), concluding that milk is either sold out of necessity (poor households) or by choice (rich households). Nevertheless, no study explicitly investigates the effect of milk sales on home consumption and dietary diversity.



Pastoralists often reside in areas of high incidence of poverty which highlights the importance of poverty-livelihood-livestock linkages (Haggmann and Speranza, 2010; Little et al., 2008;). Although Tanzania does not set an official national poverty line, the government website refers to 1 US\$ per capita per day. The average daily net income of the pastoral households in the research area studied in this dissertation is exactly this 1 US\$ per person. However, 67% of all households fall below this 1 dollar a day poverty line. While there is substantial value stored and saved in form of livestock, the poor infrastructure and limited market availability in large parts of the rural area may hinder converting this value if need be. Also day to day cash requirements are mostly too small to justify the sale of large ruminants. Milk sales may provide a viable way to generate constant and sufficient money.

The largest ethnic group associated with pastoralism in East Africa are the Maasai people. Often referred to as “people of cattle”, they are a typical example for pastoral societies and inhabit the dry Maasai steppe covering southern Kenya and northern Tanzania. Over centuries, they have developed suitable and sustainable strategies for rearing cattle, goats and sheep in a heterogeneous environment with risks, climatic uncertainty and unstable forage production. According to theories on pastoral land use, the key to their success is a system that pro-actively manages risk, i.e. they “accept the variability of productive inputs and modify their herding and social systems appropriately” (IUCN, 2011, p.7; Roe et al., 1998; Vetter, 2005). In practice this includes strategic mobility in form of transhumance and an elaborate social organisation with strong social bonds and clearly defined responsibilities for gender and age groups (see section 1.3). Considering that the division of labour between men and women as well as their activities in different socio-economic spheres (domestic, livestock, milk, etc.) is crucial to Maasai livelihoods, it is rather surprising that most recent gender literature deal with one side of the coin, usually the women’s side, only. A more comprehensive study looks at labour allocation of men and women and identifies substantial gender role shifts (Wangui, 2008); another article focuses on intra-household decision making power and states that husbands may choose the location of the homestead so as to influence the ability of their wives to sell milk (McPeak and Doss, 2006).

Since colonial times the traditional way of Maasai life faces various challenges. As the Kenyan and Tanzanian governments considered, and still consider, pastoralism as an inefficient and unsustainable land use system, policies targeted at curbing mobility, settling the Maasai families and fostering commercialisation of livestock and livestock products (Homewood et al., 2009; Ndagala, 1982). Privatisation of land and sedentary households are seen as prerequisites for rural development as



it eases national efforts and investments in infrastructure, market access and social services. At the same time, the access to natural resources critical for livestock production, i.e. water and pasture, is reduced e.g. due to newly established national parks or to hunting concessions handed out to foreign companies (hunting company from the United Arab Emirates, Loliondo district). Further, the steadily growing population, both of Maasai and non-Maasai, increases the pressure on land and resource requirements. In incidences of severe climatic shocks, like the extreme drought of 2009, this intense situation may easily lead to conflict between pastoralists and crop farmers (grazing livestock on crop fields) or the government (entering national parks).

In view of the increased pressure due to the changing environment, most research focuses on the response of the Maasai to these challenges. The studies show that pastoral households adapt their livelihood strategies by diversifying income sources (Brockington, 2001; Coast, 2002; Homewood et al., 2009; McCabe, 2003; McCabe et al.; Radeny et al., 2007; 2010; Yanda and William, 2010), or by intensifying livestock production and commercialisation (Dietz et al., 2003; Ndagala, 1982; Zaal, 1999). However, the centre of attention is on the cross-border area between Kenya and Tanzania where alternative income sources are available (mining, tourism, markets, education and off-farm jobs, employment as guards). Areas with limited options, like the southern part of Maasailand, lack attention. Although gender roles are an important component of Maasai society, only few articles explicitly consider those. For example, milk marketing is of particular importance for women as it is often the only possibility to earn income they may directly control.

This dissertation looks at Maasai pastoralists in Morogoro Rural district, an under-researched southern part of Maasailand where income alternatives are scarce. Drawing on a conceptual framework describing the pastoral setting and resulting livelihood strategies, the research addresses the identified knowledge gaps by investigating and analysing the effects of milk sales on household income and food security indicators. Further, it specifically considers gender roles reflecting in separated socio-economic spheres of men and women, and estimates the income contribution of both (semi-)autonomous actors to whole family income, thereby also evaluating potential gender role shifts among Maasai.

The remainder of this introduction includes a detailed description of the underlying conceptual framework that guided this dissertation, the research questions addressed and hypotheses tested, and the outline of the thesis.

1.2 Conceptual framework – pastoral livelihood strategies

The theoretical framework that guided this dissertation research combines aspects of three different concepts. The underlying context relevant for pastoralism is derived from the “policy framework for pastoralism in Africa” (African Union, 2010) which conceptualises pastoralism regarding the diverse rangeland ecologies, policies and societies of the continent. This general context was then connected to the “sustainable livelihood approach” (SLA) (Carney, 1998; Scoones, 1998, Farrington et al. 1999). In principle, the SLA describes that a household determines and pursues suitable and sustainable livelihood strategies based on its asset endowment and the overall setting. However, this unitary model does not capture the role of individuals within a household and neglects gender issues. Since intra-household dynamics along gender lines are an important feature of Maasai culture, it is necessary to consider these in this study on Maasai livelihoods. Therefore, we borrow from the “gender, assets, and agricultural programs” (GAAP) framework and recognise that gender relations may influence (individual) asset endowment, decision making processes, activity choices, consumption strategies, and others (Meinzen-Dick et al., 2011).

1.2.1 Pastoral setting and livelihoods

Geographical and ecological context: Pastoral production systems use natural rangelands as pasture for rearing livestock under extensive conditions. These areas are often located in regions with high rainfall variability both spatially and temporally. In order to cope with seasonality and climatic shocks, and to sustainably utilise scarce grazing and water resources in uncertain environments, pastoral livestock keepers often resort to some type of strategic mobility. In the case of the Maasai, the grazing areas are used in a transhumant fashion locally referred to as *ronjo*. Depending on local resources, i.e. mainly access to water, two basic mobility strategies are observed. Movement of stock takes place either in the dry season when local pasture gets scarce, or in the wet season so as to save local pasture as hay.

Economic context: In many regions the livestock sector, including pastoralism, contributes substantially to national economies. In Tanzania, it is estimated to generate about 4.7% of the national gross domestic product (URT, 2012a). Yet, the economic benefits of home consumption (milk, meat) or animal services (e.g. transport, draught power) are often overlooked. In addition, pastoral households may need to make use of the (caloric) terms of trade between livestock product and cereals (Degen et al., 1998; Dietz et al., 2003; Zaai, 1999) so as to ensure their food



security. Therefore, access to markets and price stability are often especially important for pastoralists.

Social and cultural context: Communal resources, strong social organisations and leadership are characteristic for pastoral societies and for Maasai in particular. The social structures allow the well-organised collective action required to adequately manage livestock in an environment prone to risks and uncertainties, and provide indigenous social support mechanisms (obligations through family ties or age-sets) to help poorer members of the community. The culture also influences gender relations and intra-household decision making processes (see 1.3.2).

Political context: The influence of policies on pastoralism is manifold. Historically important in East Africa are the demarcation of country borders cutting across Maasailand and the sedentarisation programmes. Both disturbed the traditional land use and livestock management system by hindering seasonal mobility. While early livestock programmes focused on increasing meat production, local strategies rather focused on e.g. breeding for higher milk performance and draught tolerance (Hodgson, 2001). Although most of the area inhabited by the Maasai is still communal or government owned land, there are regions where the demographic trend, i.e. population growth, increasingly puts pressure on land requirements. The coexistence of formal or informal rights to land, water and pasture and their adaptation to changing environmental and socio-economic conditions can pose a potential source for conflict.

The pastoral context explains the various facets of vulnerability that a household may face, and influences structures and processes like social organisation, markets and institutions relevant for the pastoral setting. The platform for household decision making and basis for the choice of livelihood activities and strategies is the asset endowment of a household. Five types of assets or capital are differentiated: natural, physical, social, human and financial capital¹. Natural capital includes pasture, trees, salt and minerals, water and rangeland biodiversity, and forms the resource base for livestock production. Physical capital mainly refers to available infrastructure. Particularly important are access to (livestock and milk) markets, functioning and well placed watering points and telecommunication networks. Mobile phone services are increasingly used to exchange information on pasture situation and market prices or to transfer money (“m-pesa” in Tanzania/Kenya). Markets are also needed to trade animals or livestock products for cash or cereals, often at advantageous (caloric) terms of trade, or grains. Somewhat neglected in many areas are credit, insurance schemes and remittances. Critical to pastoralism

¹ Some studies add political capital as a sixth capital type (see, for example, Baumann, 2005)



is human and social capital. It requires knowledge (gained through formal or informal education) and skills to successfully work with animals. Health status and labour availability are further aspects which are closely interlinked with social structures featuring networks of shared livestock management and solidarity.

1.2.2 Maasai social organisation

Maasai society is shaped by two major types of social organisation including (1) a socio-spatial and (2) a socio-political component (see Mitzlaff, 1988; Talle, 1988; Grandin, 1991; Coast, 2001).

The **socio-spatial organisation** is based on proximity and classifies six productive units (Figure 1.1): sub-household (*enkaji*, plural: *enkajjik*), household (*olmarei*), homestead or compound (*enkang/boma*), neighbourhood, section and Maasai society. Each level comprises different social or economic spheres with different characteristics, rights and responsibilities.

It is frequently observed that a Maasai man of high social status or economic position is married to several wives. Each wife usually lives together with her children and dependents in her own separate house, is independent regarding food and nutritional decisions and is partly autonomous regarding certain economic decisions and activities like milk sales, handicraft work, petty trade and producing hides or small livestock products (see e.g. Homewood, 2009; McPeak and Doss, 2006; Ndagala, 1982; Wangui, 2008; Zaal, 1999). Therefore, we consider this the smallest productive family unit. This is in line with Forstater (2002) and McCabe et al. (2010) and ideally reflects the Maasai understanding of the *enkaji*, translated as house, being the foundation of the socio-spatial institution.

All *enkajjik* together and the husband form a Maasai family or household, called *olmarei*. Usually animal ownership is at this level. Also main household decisions concerning livestock management and marketing, mobility or settlement are made here (see e.g. Grandin, 1991; Hodgson, 2001; McPeak and Doss, 2006; Talle, 1988). In addition, various degrees of cooperation like income pooling, sharing food (granary) or joint decision making within an *olmarei* may occur, i.e. husband-wife or wife-wife interactions. Yet, the institutional setting leaves us to differentiate between men (husband, family, household or *olmarei* head) and women (wife, sub-household or *enkaji* head) as separate, individual economic actors.

Several *olmarei* may form a residential unit referred to as a *boma* (Kiswahili) or an *enkang* (Maa) (Figure 1.1). A typical layout includes a fenced outer boundary with gates for each household, one central kraal for adult cattle, some smaller pens for sheep, goats and calves (lambs, kids and very young calves overnight inside the

houses), houses for each *enkaji*² and sometimes additional houses for household heads or young warriors. Usually the families living together are either related (e.g. father and married sons³, brothers) or good friends from the same age-set. While livestock ownership is at the *olmarei* level, livestock management, herding and watering is often organised jointly by a *boma* (Grandin, 1991). This increases security when animals are moved away for longer periods (*ronjo*) and allows more flexibility regarding labour allocation. However, over the last decades the average size of a *boma* has decreased which is related to the Maasai becoming increasingly sedentary, a development that is politically fostered (Grandin, 1991; Ndagala, 1982).

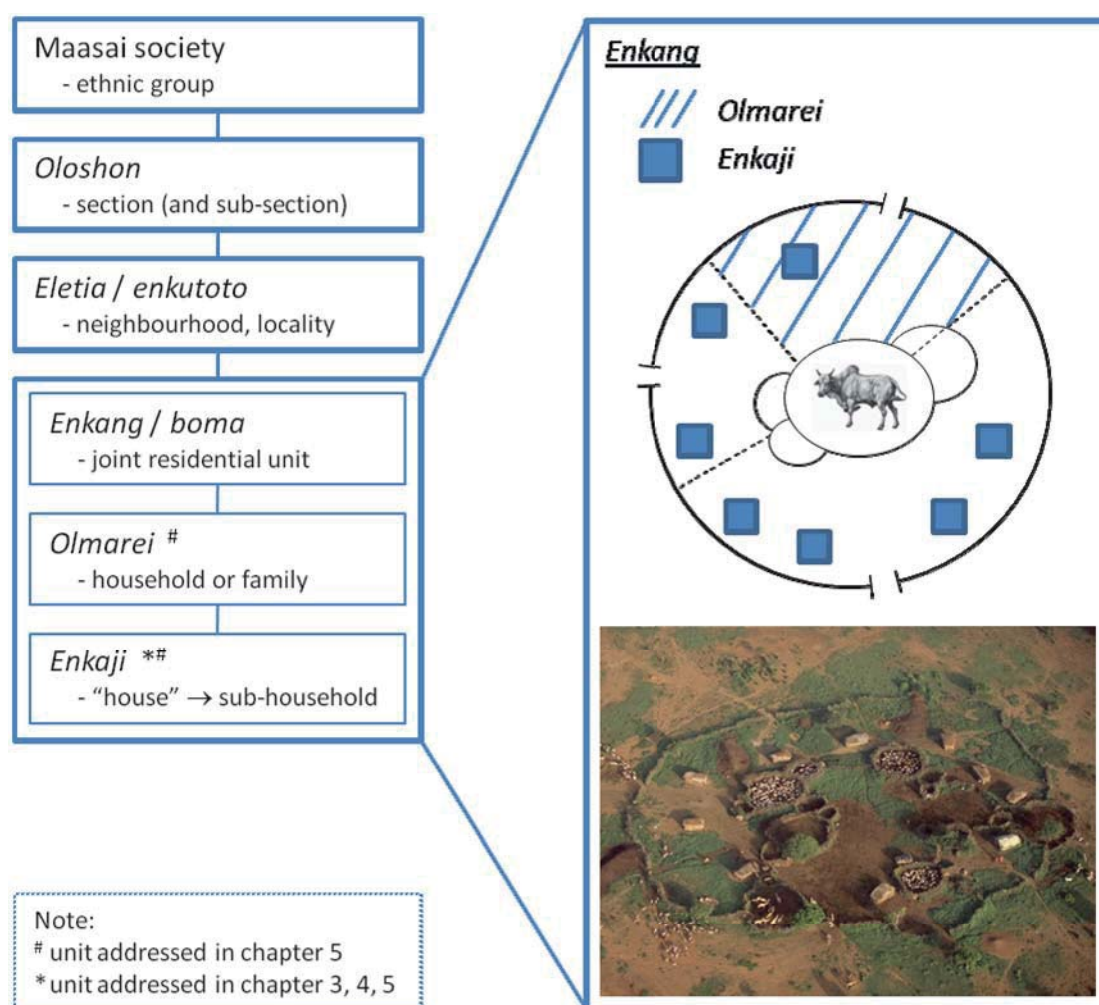


Figure 1.1: Maasai socio-spatial organisation and identification of research units

Source: Own illustration.

Picture source: <http://jameswarwick.co.uk>

² The positions of the *enkajjik* alternate – 1st wife: right of gate, 2nd wife left, 3rd wife right, etc.

³ Traditionally a Maasai man may establish his own *olmarei* after marriage.



Clusters of *bomas* are grouped into a neighbourhood or locality (*elatia/enkutoto*) which shares the control over local grazing and water resources, and exchanges information. Most Maasai consider this their home area. The largest unit with a specified grazing and administrative structure is the section (*oloshon*) followed by the Maasai as an ethnic group with a common language, culture and belief.

The **socio-political organisation** is linked to an age-set system. Every few years (7-15) every boy past puberty may participate in a circumcision ceremony through which he and his cohorts inaugurate a new generation of warriors (*morani*) with a unique name. Over time they will continue to be junior elders, senior elders and retired elders. The age-set principle determines power relations between elder and younger generations as well as between men and women by defining their respective duties, rights and responsibilities (Hodgson, 2001; Talle, 1998/2003). For example, traditionally *morani* are supposed to protect the community and to take care of the livestock herds; junior elders are expected to marry and form their own *olmarei*; and senior elders are responsible for the political and traditional leadership (Sonnen-Wilke, 1981). Women are not explicitly part of the age-set system, but usually “dance” with the age-sets closest to their own age (Solluntsch, 2003; Sonnen-Wilke, 1981; Talle, 1988).

1.2.3 Concept – summary

Figure 1.2 illustrates and summarises the theoretical framework that guided this dissertation research. The underlying pastoral context comprises a geographical and ecological, a social and cultural, an economic and a political component. It influences the vulnerability context (seasonality, climate shocks, etc.), the intra-household dynamics, the processes and structures (policies, market access), and hence determines the setting. Based on the setting and the household’s asset endowment, the two household units (*olmarei*, *enkaji*) pursue different livelihood activities including livestock production (*olmarei* head) and milk production (*enkaji* head) that lead to livelihood outcomes (total family income, food security, gender equity). Livelihood outcomes like increased income or better health status also feed back to the household’s asset endowment.

The articles presented here as chapters 3, 4 and 5 focus on specific parts of this underlying concept. Chapter 3 provides a basic household model for Maasai families and investigates the income effect of milk sale on *enkaji* income; chapter 4 looks at the effect of commercialisation on food security; and chapter 5 focuses on gender roles and contributions of men and women to family income.

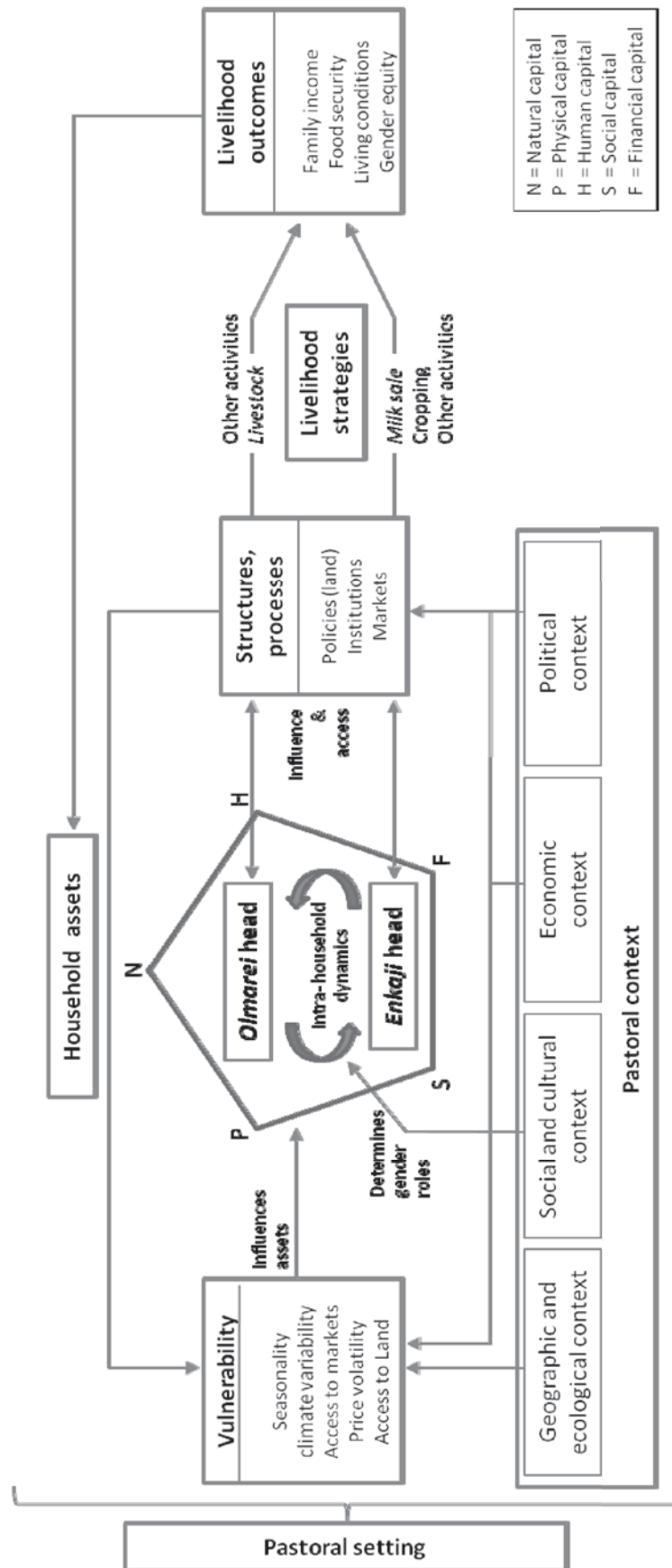


Figure 1.2: Conceptual framework

Source: Own illustration.

1.3 Objective, research questions and hypotheses

Based on the conceptual framework underlying this thesis, the review of literature and background information (see section 1.1) revealed a number of issues deserving closer attention. First, most literature focuses either on the anthropologic and ethnographic view, or on the implications of development interventions, i.e. the change in livelihood strategies. Second, these studies were carried out in the northern part of Maasailand, i.e. the cross-border area between Tanzania and Kenya. Third, despite the special symbolic and potential economic value of milk, only few studies take an econometric approach to investigate effects of milk marketing. Fourth, the importance of gender roles is usually ignored or considered one-sided, most often the women's side.

Therefore, the main objective of this dissertation research is to investigate the effects of milk sales on income and food security as well as the current gender roles and intra-household dynamics between Maasai men and women. Further, the results and findings shall lead to policy recommendations suitable for improving pastoral livelihoods.

This dissertation is organised around three main research topics related to milk sales of Maasai women as (semi-)autonomous economic actors of their *enkajjik* (sub-households), including (1) the effect of milk sales on *enkaji* income, (2) the effect of milk sales on food security, and (3) gender roles and the contribution of men and women to family income. Below, we list the three topics, their respective research questions and hypotheses.

Research topic 1: *The effect of milk sales on enkaji (sub-household) income*

This topic is addressed in chapter 3 of the dissertation and includes the following research questions and hypothesis:

- a) What are underlying principles for milk sale decisions?
- b) Which factors are critical for the decision whether to sell milk?
- c) What is the effect of milk sales on *enkaji* income?
- d) How does milk sale to different buyers alter income effects?

→ **Hypothesis 1:** Income sources in the research area are limited to marketing livestock, milk or crops. While livestock has always contributed to household (cash) income, milk and crops were primarily used for home consumption. We hy-