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GENDER EQUALITY TOOLBOX

Gender Analysis of Pastoral Systems in Three Sub-Saharan African Countries

EVIDENCE AND PROGRAMMATIC RECOMMENDATIONS

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Executive Summary

Women play a critical role in pastoral systems in sub-Saharan countries and are impacted by market-based interventions aimed at strengthening the long-term resilience of pastoralist communities. However, efforts to promote high value, market-oriented crop and livestock production are unlikely to help women and may in fact harm them, particularly when these efforts focus on larger animals and national markets. Evidence suggests that with greater awareness of social contexts, we can increase high value productivity and also achieve greater gender equity.

In this report, we describe the social context for livestock production and marketing in three sub-Saharan countries, **Ethiopia, Nigeria, and Burkina Faso,** and synthesize the evidence for how different interventions may impact women pastoralists. It should be noted that this report is limited in geographic scope as the gender analysis was commissioned to complement and inform an existing program of work.

In all three countries, we researched social contexts relevant to gender and pastoralism, including key legislation around land use; social demographics and norms that influence women's autonomy; and gender roles in relation to livestock production. In the regions studied, women pastoralists play an important role in livestock production, although their roles differ by location, production system, or ethnic group. We also found a clear gender division between private and public responsibilities, with women more closely tied to the home by household duties. We observed that there are challenges for all pastoralists, including poverty, drought, mobility, and a changing climate, but the challenges specific to women tend to stem from social norms and the separation between public spaces, which men occupy, and private spaces, which women occupy.

We researched the public policy and legal frameworks for pastoralism in all three countries. These frameworks affect women and men differently. In Ethiopia, for example, social and religious norms and customary law are main features of pastoral systems. But positive statutory or formal law can provide important protections for women and create space for change in the deeply entrenched customary systems, and some movement in that direction can be found both nationally and regionally.

In the area of livestock production, an essential gender difference is that men are more likely to be responsible for larger animals, including cattle, while women are more likely to own and control small ruminants, poultry, and dairy products. Women also are usually responsible for pregnant and sick animals and their young, yet in some regions the dissemination of veterinary services and the literacy requirements of modern animal medicine exclude women from accessing information, skills, and knowledge.

The marketing of livestock products is also heavily gendered. Women are less mobile than men in part because of gender norms around women traveling, and also because their roles revolve around household duties such as collecting firewood and water and providing childcare. Additionally, women's lack of access to the media and to the internet can create a barrier to market involvement. As a consequence, they generally trade in local markets rather than the larger national markets, and in some cases are not even allowed to travel to small informal markets. Women frequently engage in farm gate marketing, in which products are directly sold to the customer without a market structure. These constraints impact their ability to negotiate and limit their income.

Taken together, this means that if market interventions focus mainly on cattle production and national markets, women are unlikely to be helped and may in fact be harmed – particularly if such interventions mean women are left behind with more responsibilities on the home front. One study found that increasing commercialization resulted in an overall decline in female control across all farming systems. However, intentionally designed and implemented interventions have the potential to increase women's livestock production and their access to markets, and such investments also can support greater gender equality.

A few other important findings include:

- The level of education of women can significantly influence the extent of participation in livestock production as well as their willingness to engage in livelihood diversification. Challenges to female education include early marriage (including child marriage) and lack of access.
- Because women are more responsible for private space – the home and garden – they have little opportunity to organize and cooperate with one another, which limits their bargaining power in the marketplace.
- Social networks among pastoralists are critical to their survival during drought and other climate disasters. Consequently, it is especially important that development actors do not weaken social networks by heavily supporting one grouping over another (men over women or vice versa, for example), but rather look for investments in the whole community. Each community may have different types of social networks and knowing what these networks are and how they function is critical to appropriate development aid. Understanding the role of both women and men in these networks is also important.

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Introduction

The report was drafted by the Global Center *for* Gender Equality based on a desk review of key pastoral systems in the focus geographies (Ethiopia, Nigeria, and Burkina Faso) in Sub-Saharan Africa to inform internal programming and investments in livestock markets.

Livestock provide income, create employment opportunities, provide food security, and can function as a source of insurance to weather the impacts of drought. Vulnerable groups, particularly women and the landless, frequently engage in livestock production, and livestock provide a safety net, helping keep poor households from falling into poverty. They are often the only asset women can own/control and can be sold to meet emergency and family health needs (Njuki & Sanginga, 2013). Livestock have high expected returns through offspring, sale or consumption of products, and their use in farming systems. Livestock can also be accumulated (bought) in good times and depleted (sold) in bad times for the purpose of consumption smoothing (Njuki & Sanginga, 2013).

As with all other areas of agriculture, women and men have different roles and duties within the social norms of pastoral systems. One clear division in every instance relates to who is the public face of the family – men – and who is responsible for the private space, the home and garden – women. This division generally means that women have less access to information and training, including extension services; less familiarity with government offices; less ability to travel long distances; less access to markets; are less able to organize and cooperate; and their contributions to livestock raising often have less visibility. As well, women's experiences and vulnerability levels vary among pastoralists. Pastoralist women who have opportunities through favorable ecological conditions and proximity to urban centres and markets are better able to diversify their income to absorb shocks and increase herd retention. On the other hand, pastoralist women who are in arid ecological zones and isolated from markets have little opportunity to diversify their sources of income and hence are more vulnerable.

The purpose of this review is to emphasize the importance of gender-intentional interventions in pastoral systems by highlighting the critical role women play within pastoral systems. We also identify where there are gender differences in challenges and opportunities for strengthening long-term resilience. We make programmatic recommendations at the end of the report.

Methodology

This paper is intended to complement work done by the Markets Analysis for Pastoralists (MAP) project, https://livestocklab.ifas.ufl.edu/projects/map/.

Our desk review started with identifying 30 articles related to women and pastoralism from a recent ILRI literature review of gender and livestock (Baltenweck et al., 2022). To cover the three target countries, an additional search was done based on bibliographies from those studies, google scholar searches, searches on Stanford social science databases, legal research, and recommendations from reviewers. Articles were included or excluded based on relevance; thematic area; sample size; timeline; and availability of datasets. In total 131 articles and three datasets were retrieved. After the inclusion and exclusion process, in addition to the initial 30 articles, 96 articles (out of 131) were identified, and one relevant dataset was used to complement existing articles in one of the geographical focuses with limited studies. Peer-reviewed articles were given priority although due to limited studies on pastoralist women, in some cases grey literature has also been included.

The paper starts with a broad overview of gender in pastoralist systems, and then discusses women pastoralists in each of the three target countries (Ethiopia, Nigeria, and Burkina Faso), including the Pastoral System Profile, the Public Policy and Legal Framework, Social Demographics and Norms, Gender and Pastoral Systems, and Barriers and Opportunities for Women. The last section of the paper covers Programming Recommendations.

Gender in Pastoralist Systems

Overview

In the literature, pastoralists are commonly described by their level of mobility. Those who are entirely mobile are called "exclusive pastoralists" or "nomads." Those who move between ecological zones are "transhumants." The semi-settled are "agropastoralists." In some cases, part of the household moves with the animals and part of the household remains settled. The systems often overlap and there are no clear boundaries between them. "Settlement politics, economic development, and changing environments further reduce the differences and are moving the balance more and more towards agropastoralism" (IIRR and CTA, 2013).

For this paper, we use the same definition for pastoralists as the MAP team:

- Pastoralists occupy lands with little vegetation and rainfall, relying on cyclical movements between wet and dry seasons to preserve their livelihoods (though agropastoralism is more common in W. Africa).
- Pastoralists' livelihoods are based on livestock and livestock constitutes a majority of wealth, with significant variation in herd sizes.
- Pastoralists share a common way of life, often living in communities of a single ethnic group and rely on traditional institutions to provide them with social safety services, education and market guidance. Pastoralism is part of the identity of the community.

Land rights and land management vary, with exclusive pastoralists generally having the right of passage and the right to use communal land, while agropastoralists may have the right to use collective grazing land and have private rights to other land, usually the land where they grow crops. Women's role in land management varies depending on whether the land is a common pool resource or whether the land rights are held by the household and the social norms of the community.

Common Challenges for Women

Women pastoralists play an important role in livestock production, although women's roles can differ by location, production system, or ethnic group. In many places, women and girls look after the household while the men and boys are away tending the herd. Women are usually responsible for pregnant and sick animals and their young. They are most often responsible for small ruminants, poultry, and dairy products rather than meat and cattle.

Pastoralist women can face significant challenges in producing and marketing livestock products. In some societies they are prohibited from travelling without their husbands and interacting with men who are not close relatives. They may be tied to the home by household duties: cooking, cleaning, fetching water, and looking after children and the elderly. Men may make the big decisions, sell animals, and control the income. Women may not be able to own or inherit land or livestock (IIRR and CTA, 2013).

Addressing Challenges

There are various ways of overcoming these challenges, and we discuss country-specific examples of potential activities below and make broader programming recommendations at the end of the paper. All three countries have pasture legislation, to varying degrees of specificity, but none of them adequately address gender issues in pastoral systems. In every case, to reach women social norms must be understood and accommodated or intentionally addressed.

Photo: BMGF/Mulugeta Ayene

COUNTRY 1

Ethiopia

Pastoral System Profile

The Ethiopia Livestock Sector developed a 15-year livestock sector strategy for the Government of Ethiopia which provides a broad overview of the pastoral system but does not specifically reference or discuss gender differences. The Livestock Sector Analysis (LSA) developed a typology for the different livestock systems in Ethiopia, consisting of (a) the predominantly grazing or grassland systems of the lowlands (LG), including pastoral and agropastoral systems; (b) highland crop-livestock mixed rainfall deficient (MRD), and highland crop-livestock mixed rainfall sufficient (MRS) (LSA, 2017).

The LSA found that most cattle are in the mixed systems. Sheep are about equally distributed between the highland mixed and lowland grassland systems, whereas goats and camels are predominantly found in the lowlands. The national herd provides all or partial livelihoods of more than 11.3 million rural households, of which 27– 35% of the highland livestock keepers and a large proportion of the lowland herders live below the Government of Ethiopia-established poverty line (LSA, 2017).

The LSA also states that (a) cattle is the dominant species for 70–90% of the livestock-holding households according to livestock system; (b) livestock contribution to total household income is higher for poorer households in the highlands; and (c) village poultry throughout all agro-ecological zones and goats in the lowlands have the highest income per animal. Under a poverty-reduction focus, cattle, goats, and village poultry in all systems and especially the LG and the moisture-sufficient highland (MRS) agro-ecological zones would get priority (LSA, 2017).

Differences in roles or income between men and women were not considered in the LSA. Women are highlighted twice in the report, in both cases related to poultry production. Namely, "poultry is an important source of food and income

for the rural poor in Ethiopia and especially women" (p. 57). The report goes on to say, "traditional family poultry (TFP) which is low input and low output in terms of chicken meat and egg production is the major poultry production system in the country, accounting for 97% of the total chicken population, 92% of the egg production and 93% of the total chicken meat production" (CSA, 2013; LSA, 2017).

In absolute numbers, most of the poor livestock-keeping people are found in the MRD (rainfall deficient) system. LG (grassland) has the largest proportion. Ethiopia's Ministry of Finance and Economic Development in 2012 reported a similar pattern of poverty incidences in the nation and the largest proportion of people below the poverty line were found in the Afar and Somali regions in the LG (LSA, 2017).

And again, women are mentioned in relation to incidence of poverty. In the MRS areas, the incidence of poverty "is relatively high among the households with small ruminant and poultry dominance which was not a surprising finding as it is the poor and the disadvantaged, such as women, who depend on poultry and small ruminants (because they are small capital investments) for their livelihoods" (LSA, 2017; Shapiro et al., 2017).

The three areas of focus in Ethiopia for our review are Borana, Afar, and Ethio-Somali. According to Coppock (1994), the Somali pastoralists constitute 53% of the pastoral population followed by the Afar (29%), the Borana-Guji Oromia (10%), and the remaining 8% are found in Gambella, Benishangul and Tigray regions (Coppock, 1994). Borana is located in the southern lowlands of Ethiopia, bordering northern Kenya and is one of 17 zones within the region of Oromiya. It is a traditional pastoral area. The climate is arid and semi-arid, characterized by erratic and unpredictable rainfall and patchy vegetation.

Afar is organized into five administrative zones and 29 woredas. Land is divided among sub clans with each sub clan possessing primary rights over a particular territory and secondary rights in other sub clans' territory, based on long-term inter sub clan-negotiated reciprocity–called isso rights (Girma & Giovarelli, 2014). Clan land in Afar includes grazing areas, water points, communal graveyards, settlement areas (metaro) and ritual sites managed by village councils consisting of a clan leader, elders, and local wise men. Individual members have rights to use the land subject to the rules of the collective management system of their clan. In Ethio-Somali, clan members have communal access to clan land (Girma & Giovarelli, 2014).

Public Policy and Legal Framework for Pastoralism

While social and religious norms and customary law are main features of pastoral systems in Ethiopia, even if not always enforced, statutory or formal law can create space for change in the deeply entrenched customary system. As members of the community, women are generally secure in their rights to communal land, while their rights to privately held agricultural land are less secure due to the patrilineal system of inheritance. The Constitution and Land Legislation in Ethiopia clearly state that women and men have equal rights to acquire, administer, control, use, and transfer property (Const. Art. 35,7). The Constitution also states that women are entitled to affirmative measures to overcome the historical legacy of inequality and discrimination suffered by women in Ethiopia (Art. 35,3). Pastureland is addressed in the Federal Democratic Republic of Ethiopia Rural Land Administration and Land Use (LALU) Proclamation No 456/2005 law as well in regional LALU laws. The federal LALU Proclamation gives regional states authority to enact detailed laws if they do not contradict the federal law (Art. 16).

Oromia, Afar, and Somali all have their own regional state rural land administration and land use proclamation (LALU), which govern land-related issues, including women's land rights in pastoral and agropastoral areas. All three regional proclamations state that women and men have equal rights to possess, use and administer rural lands (Art. 5) (Abebe and Flintan, 2021). The tables below set out the legal differences between the federal and regional laws governing communal land use and private land.

Communal Land Use

Constitution	Federal LALU	Afar LALU	Somaliland LALU	Family Law
		Right to Communal Land		
Pastoralists have the right to free land for grazing and cultivation and the right not to be displaced from their lands (Art. 40, 5).	"It has become necessary to establish a conducive system of rural land administration that promotes the conservation and management of natural resources, and encourages private investors in pastoralist areas where there is a tribe-based communal landholding system; (Preamble). Defines communal holding as rural land which is given by government to local residents for common grazing, forestry and other social services (Art. 2(12).	Land is held by the community (clan) (Art. 2,16). Certificate of holding for communal land will be issued in the name of the community, not individuals (Art. 6). Pastoralists have priority interest in right to use rural land (Art. 10). Communal pastoral lands shall not be transferred into private holdings (Art. 5,8); or leased to investors (Art. 5,9); government has right to communal holdings if "necessary" and in consultation and agreement of pastoralists. Women whose husbands are out-migrating do not lose their right to use communal land (Art. 9,9).	Establishes land administration and legal framework to "defeat traditional clan-based communal land tenure system and incentivize investment." Land disputes among pastoralists settled under customary dispute system; government will provide assistance to strengthen customary system (Art. 7).	Does not pertain to communal land.

Private Land Use

Constitution	Federal LALU	Afar LALU	Somaliland LALU	Family Law
		Private Land		
Government shall ensure right of private investors to use land, based on payment (Art. 40, 6). Women and men have equal rights to acquire, administer, control, use, and transfer property (Art. 35,7). Women are entitled to affirmative measures to overcome historical legacy of inequality and discrimination (Art. 35,3).	Women and men have equal rights to possess, use and administer rural lands (Art. 5).	Women and youth (Art. 9,(5,6) have a right to privately held land for grazing and growing crops free of charge. Private land should be jointly titled to married couples (Art. 9,7); Female heads of HH have the full right of use to land holdings (Art. 9,8) and to joint holdings communally used by local people for grazing, forestry, and other social services" (Art. 2,17). Women whose husbands are out-migrating have the right to have the private land holding certificate issued in their names and issued to them (Art. 10, 6). Ensuring land ownership and use rights of women is essential to guarantee productivity and social development (Preamble).	Private holdings and communal lands used by pastoralists for grazing and social services shall not be leased to investors (Art. 5 (9,10) (Hailu, 2016). Women and men have equal rights to possess, use and administer rural lands (Art. 5).	All income of spouses shall be common property, and both spouses have the right to manage any household property, including land.

Ethiopia's National Climate Resilient Green Economy Adaptation Plan, Federal Democratic Republic of Ethiopia Addis Ababa, 2019

The Adaptation Plan states that "gender is a key consideration, recognizing that women may be particularly vulnerable to climate change due to socio-economic inequalities that limit their adaptive capacity" (P. 42). The Plan also commits to collecting gender disaggregated data (P. 82) and provides that one of its guiding principles will be gender sensitivity, stating that both women and men will be able to participate in and benefit from adaptation options (P. 50). Agriculture is one of the vulnerable areas covered by the Climate Adaptation Plan.

Social Demographics and Norms

Gender norms play a significant role in the lives of men and women, and they can limit women's options for economic or social agency, and intra-household bargaining power. For example, a lack of education and early marriage are two circumstances that may increase women's vulnerability in marriage. As girls grow up, marriage is favored over education (Greene and Stiefvater, 2019), and marriage is a key factor in school dropout rates among adolescent girls. A survey by the Population Council and the United Nations Population Fund (UNFPA) found that 40% of rural girls (aged 12–24) were not in school because of child marriage (Erulkar et al., 2010). In rural areas, the age considered to be ideal for girls to marry is mid-adolescence. In many communities, gender norms mean that girls who remain unmarried in their late teens are subject to insults and ridicule by their peers and community. Girls also face gender-specific challenges at school, such as a lack of appropriate WASH (Water, Sanitation and Hygiene) facilities during menstruation (Devonald and Yadete, 2021).

Access to education lags in Afar and Somali compared to Ethiopia's other regions, largely because populations are sparse and nomadic, which both complicates the delivery of formal schooling and lowers interest in it. Many remote communities do not have schools, and many of those that do have schools lack teachers, learning materials, and drinking water. The government reports that on a national level, 20% of children aged 7-14 are out of school, but out-of-school rates are approximately three times as high in Somali (54%) and Afar (66%). Gender also matters. Somali's gender gap is especially large. Secondary level net enrollment in that region is 23% for boys and 16% for girls. Afar's enrollment rates are lower, if more gender equitable: 11% and 9% respectively. (Devonald, M., Jones, N., & Yadete, W., 2021). High rates of poverty, a lack of access to clean water, and widespread food insecurity have a large impact on adolescents' ability to stay in school (Devonald, M., Jones, N., & Yadete, W., 2021).

Afar and Somali are unique among Ethiopia's regions in that they have not yet revised their Family Codes to outlaw child marriage. Rates of child marriage are not only high, but also appear to have increased since 2000. The most recent Demographic and Health Survey (DHS) found that of young

women aged 20-24, 67% of those in Afar and 55% of those in Somali had married before the age of 18. Contraception is viewed unfavorably in both regions, primarily because it is thought to encourage sexual promiscuity and damage fertility. Of sexually active young women aged 15-24, the most recent Performance Monitoring for Action survey found that only 12% of those in Afar and 20% of those in Somali were using some form of contraception. The 2016 DHS reports that Afar (23.4%) and Somali (8.7%) have the highest rates of adolescent motherhood in the country. Total fertility rates are also the country's highest (Presler-Marshall, et al., 2022).

Ethiopia has a National Committee on Harmful Traditional Practices (HTP), which has identified more than 25 practices grouped under three categories: those that affect women, those that affect children, and those that affect the general community (Misganaw 2013:1-2; Tadele and Lambebeo, 2019). Pastoral areas in remote parts of the country are the prime targets of the anti-HTP committee. For example, early marriage, abduction, and rape are among practices that are still practiced, particularly in pastoral areas (Tadele & Lambebeo, 2019).

Polygamy, which is commonly practiced in pastoral areas, appears to result in mixed outcomes, depending on the indicators assessed. In one study, polygamy was considered positive in terms of the number of animals that could be kept because labor for livestock care could be divided between wives (Boru et al., 2014). But another study found that the practice of polygamy profoundly affects not only the social status of women but also their livelihoods, as it entails the further division of the most scarce and valuable assets among wives and children. Consequently, the significant diminishing and ultimate shortage of such valuable livelihood resources is common among polygamous communities (Belay, 2018).

Mobile Penetration and Access to Internet

Women's lack of access to the media and to the internet can create a barrier to market involvement. Overall access in Ethiopia is low, but there is also a gender gap. In January of 2021, Ethiopia had a population of 116.4 million people; 78.1% live in rural areas. Of the 116.4 million people, 23.96 million are internet users (20.6%) (We Are Social & Meltwater, 2021). Only 6% of Ethiopians use social media, with the majority accessing it via their mobile phones. Across Ethiopia male digital literacy stands at 60% with female literacy at 45%, one of the lowest-ranked countries in Africa in terms of "equitable access to information technology" (Mehammed, 2022).

A 2022 USAID study documents and describes the gender digital divide, comparing access to or use of digital resources (mobile phone ownership, use of a mobile phone for financial transactions, and internet use) among women and men and across residence, age, and wealth for women and men separately, using evidence from demographic and health Surveys (AS83). The study found that in Ethiopia, 54% of men and 27% of women own mobile phones. Only 5% of urban women (10% for men) and 0% of rural women (3% for men) use mobile phones for financial transactions. For both men and women, the poorest households rarely use the internet weekly (less than 1%) (Croft et al., 2018).

A study of youth business groups in Ethiopia found that male members were 31 percentage points more likely to have a mobile phone than female members, after controlling for education, individual, parent and group characteristics. As well, having a mobile phone had a strong effect on male members becoming group leaders and group board members, while for females having a mobile phone had no significant effect on their likelihood of becoming business group board members or group leaders. The gender gap in mobile phone ownership and the interaction effect between gender and mobile phone ownership were important in explaining why male members dominated group boards and leadership positions. The policy implication is that training campaigns for female group members should not only stimulate mobile phone ownership but such ownership also has to be accompanied with training in the use of mobile phones for business (Holden & Tilahun, 2021).

Gender and Pastoral Systems in Ethiopia

Pastoral women can be among the most vulnerable groups of society in the social, economic, and political spheres (Flintan et al., 2011). So far, we have seen that the formal law related to pastures is positive or neutral for women but that women are likely to have less education than men, to be married young, to be responsible for multiple children, and to have less access to the media or internet. Still, the customary system does support women pastoralists in terms of rights to access and use of communal grazing lands, and women are increasingly part of decision-making processes about communal land management as well, which was unheard of in the past (Abebe & Flintan, 2021).

Gender Roles and Livelihoods

There are similarities in the roles of women and men in livestock production across Ethiopia. In all three regions selling and buying large ruminants remain men's decision (Anbacha et al 2019; Belay, 2019; Abebe 2016; Dahl 1979; Legesse, 1973), and men take the responsibility for protecting large animals such as camels and cattle (Belay, 2018).

Women's roles revolve around collecting firewood and water and providing childcare, and they are generally responsible for small livestock (goats, sheep, and chickens) and calves and sick large animals around the homestead (Abebe & Flintan, 2021; Anbacha et al., 2019; Belay, 2018; Dan & Kim, 2020; Legesse, 1973). They may also work with men during herding, watering, marketing dairy products, and constructing corrals (Belay, 2018). In all three regions women sell milk to supplement their income (FAO and Tufts, 2019; Kemal, 2020; Boru, et al., 2014; Presler-Marshall et al., 2022).

In the Somali region, women do not tend to be involved in decisions about resource use beyond what they use daily (Tefera et al. 2016; Abebe and Flintan, 2021). Generally, men make the major land use decisions, including where and when to take the livestock for grazing.

In the pastoralist areas of Afar and Somali regions, women's access to income is almost exclusively related to livestock and livestock products; in agropastoralist areas, many women also engage in trading (Presler-Marshall et al., 2022). One study indicated that In Afar, women earn money through making handicrafts such as mats and household utensils. Women also play key roles in production and processing of crops, but men still maintain control (FAO and Tufts University, 2019). Presler-Marshall et al. (2022) found that in Somali, all shop owners in all sample kebeles were women. In addition, some women engage in slaughtering and selling meat of small ruminants, especially goats, for extra income generation and women also trade small ruminants such as sheep and goats (Presler-Marshall et al., 2022). Borona livelihood diversification for women includes petty trade, poultry farming, and selling of firewood, which increases women's workload and income but also improves their decision-making power in the household (Anbacha & Kjosavik, 2021). Crop sales featured in Oromia only.

The FAO and Tufts University study (2019) found that wealth status, gender, and age are the overall factors that influence livelihood paths, although factors like access to infrastructure and facilities are also important in influencing the choice of livelihoods. Wealthier households are most likely to engage in commercial pastoral production. The medium-wealthy households combine pastoral production with non-pastoral activities, and poor households are mostly engaged in non-pastoral work.

In analyzing the factors that affect household income level in pastoral and agropastoral areas of southern Ethiopia, Adunga (2013) found that "almost all households have diverse sources of income, and wealth in the study area is highly skewed." The study found family size, distance to market, land size, education level, and diversification status are significant in explaining variations in household income. The study disaggregated by head of household and approximately 34.5% of the sample households were headed by females. There was a strong relationship between gender of the household head and wealth status, with male headed households having more wealth.

A 2012 IFPRI (International Food Policy Research Institute) study found that very few diversification activities return as much cash income as livestock production and still employ a sizable share of the population. Crop farming and livestock production have the largest earnings, while the next largest category (sale of natural products such as firewood and charcoal) earns about half. Food and drink processing and services (including sales of milk, butter, ghee, yogurt, tea, and coffee) are female-dominated occupations that earn *more than livestock rearing* overall (although obviously involving livestock) (Headey et al., 2012). Menelek (2022) found that women who have large amounts of livestock are not willing to participate in off-farm activities unrelated to livestock.

Social Networks in Pastoral Communities

Social networks among pastoralists are critical to their survival during drought and other climate disasters. Flintan et al. (2019) describe pastoral systems in all three target areas—Afar, Borana, and Somali—as "open" in that they, "have their own local terms to describe their family structures and living arrangements, normally based on a core family group and an outer layer of non-core members (normally relatives) with whom they have strong interactions, often on a daily basis." The paper argues that pastoralists' "social units are not discrete bounded, stable and fixed groups" (Flintan et al., 2019). Rather, their structures can vary widely and can change over time and circumstances. A main finding of this study was that pastoral social networks exist and the sharing of food aid and other assistance through this network challenges ideas of targeting food aid only to the poorest (Flintan et, al., 2019).

Lind et al. (2022) argue that with limited statehood, as is the case in Afar and Somali, social norms and values have to be considered. In the context of social assistance programs, they found that "local notions of 'fairness' in these areas is that differences between households are so small that everyone should benefit regardless of wealth, and that targeting a minority of community members can engender tensions" (Lind et al., 2022).

The findings of these two studies indicate that it is especially important that development actors do not weaken social networks by heavily supporting one grouping over another (men over women or vice versa, for example), but rather

look for investments in the whole community, which will strengthen social networks and assist with climate disasters. Each community may have different types of social networks, and knowing what these networks are and how they function is critical to appropriate development aid. Understanding the role of both women and men in these networks is also important.

There are social networks specific to regions in Ethiopia. For example, *marro* is a voluntary social support network in the Borano region between friends, neighbors, and families in which all women participate, regardless of livelihood bases, economic status, and age differences. Most women use *marro* when need arises, while a significant number of poor and elderly women depend on it for daily survival. Women share resources such as food, labor, and cash based on trust and solidarity. The primary aim of the shared resources is to overcome household food shortages that increase during drought (Anbacha and Kjosavik, 2018).

Afar pastoralists rely on social networks for learning about weather. Before any forecasting information is used, it is evaluated through three traditional institutions that collect, share, and analyze the information. These institutions include (1) the Edo or range scouting where traditional rangeland scouts are sent on a mission to assess weather and other spatially and temporally variable attributes on rangelands; (2) the Dagu, a traditional secured and reputable network, where weather information is shared among users; and (3) the Adda or the traditional Afar governance system, which analyzes traditional weather information before community decisions are made (Balehegn and Balehey, 2019).

Women's Participation in Livestock Markets

A study done in Ethiopia, Kenya, and Tanzania found that increasing commercialization–defined as the increasing importance of crop and livestock sales to farm households–resulted in an overall decline in female control across all farming systems and gender-respondent-household typologies. The farming systems considered were: small land-small livestock; small land-large livestock; large land-small livestock; and large land-large livestock. Pastoralists are not mentioned in the study, and it is unclear whether some of the households would be considered agropastoralists. However, the findings are instructive. Using data from the Rural Household Multiple Indicator Survey (RHoMIS) in 2,859 households in three East African countries–Ethiopia, Kenya, and Tanzania–the analyses suggest that as sale of crops and livestock increase, female control over these areas could likely diminish, regardless of specific activity. In contrast, crop and livestock diversification were positively associated with female control across gender-respondent household typologies. The analysis also indicated that women have far greater control over decisions related to consumption than decisions related to sales, although the gap between the two was less pronounced in lesser-valued livestock products (chickens, eggs) (Tavenner et al., (2019).

> "While commercialization tends to weaken women's control by focusing on sales rather than consumption decisions, diversification may allow women to have greater control through the inclusion of more "marginal" crops (e.g., vegetables and legumes) and livestock (chickens, eggs) in the farming system, resulting in a positive relationship with female control. These gendered patterns of crop and livestock control are related to the cultural systems of meaning that ascribe gendered power and importance to different agricultural activities and commodities (Hovorka, 2012). ***From a programmatic perspective, these patterns must be understood within their specific socio-cultural context to inform gender-responsive, individualized interventions, or comprehensive national-level policies***" (Tavenner et al., 2019) (emphasis added).

The authors conclude that "approaches to adapt to or mitigate climate change that rely on increasing market orientation of smallholder production will likely intensify men's control over benefits from production, whereas diversification will likely have a more positive impact on female control" (Tavenner, et al., 2019).

In Ethiopia, the LSA focuses on three key livestock commodity value chains as having potential to contribute to the long-run development of the sector – poultry for chicken meat and eggs, crossbred cattle mainly for milk, and red meat and milk from ruminants (indigenous cattle, sheep, goats, and camels). The LSA comprises two sub-value chains for each commodity value chain: smallholder family and commercial specialized production systems.

A recent study found that male-headed households have a higher probability of participating in the market than female-headed households because male-headed households have better access to productive assets to increase the chances of producing a marketable surplus, which in turn increased the chance of participating in the market (Dube and OZKAN, 2022; Awotide et al., 2016). Female-headed households are more negatively affected by the transaction costs of searching for buyers and enforcing a sale transaction (Jagwe et al., 2010).

Camel milk has the potential for increasing women's income and empowerment, because women are the main buyers and sellers of camel milk. Milk selling is traditionally the role of women in the Afar and Somali region of Ethiopia where it is

marketed by women and their organizations along kinship lines (Seifu, 2007; Lumadede et al., 2010; Gebremichael et al., 2019).

In both Afar and Somali, women are not allowed to milk camels. Men milk the camels two or three times a day, and women market the milk and are able to keep control over the proceeds (Gebremichael et al., 2019). Milk selling is the role of women in the Afar and Somali region of Ethiopia where it was traditionally and dominantly marketed by women and their organizations along kinship lines (Gebremichael et al., 2019). The Gebremichael study found that milk was traded at the herders' farm gates (18.3%), main roadsides (58.5%) and nearest towns (23.2%). Among the three marketing channels, 69.9% of the milk was directly sold to end consumers for a higher price than other marketing channels, but the routes were limited to local markets. The formal milk marketing cooperatives were legally organized, while the informal milk marketing cooperatives were organized into groups of close family or nearby herders who collectively sell their milk at the nearest town. Involving women in these groups gave them more bargaining power over groups where women were absent. Such clan-based organizations of women in milk marketing were also common in pastoral areas of Oromia (Tegegne et al., 2013) and Somali regions (Lumadede et al., 2010) in Ethiopia (Gebremichael et al., 2019).

One innovation to consider supporting is "camel towns" or "milk villages," which are small groups of former pastoralists who keep camels near urban centers and sell camel milk from these "villages" to the increasing number of pastoralists and agropastoralists moving to urban centers. Additional research will be required to better understand the role of women in these villages and whether they are able to sell camel milk and keep the proceeds or whether the proximity to the urban center changes that traditional practice. The advantages to urban camel towns include easier access to markets, veterinary treatment for livestock, and diversification to complement keeping few livestock. Pastoralists in towns also note that they were able to organize themselves more easily than when they lived in the bush to lobby the government to provide treatments for camel diseases, a still neglected issue (Abdullahi and Eid, 2013).

Challenges and Opportunities

Certainly, there are challenges for all pastoralists, including poverty, drought, mobility, and a changing climate. Poverty in Borana is increasing rapidly following the significant livestock losses from recurrent droughts. In the past, most people in Borona were self-sufficient and the poor were supported by local institutions. But an increase in poverty has weakened the social security of mutual support (Anbacha and Kjosavik, 2019). In Afar, poverty is concentrated in rural areas and income inequality is the country's highest (FAO and Tufts University, 2019).

While it is important to deal with pastoralist systems and understand the whole—community, landscape, tribal norms, social norms, etc.—it is equally important to understand the challenges and opportunities that face individuals in the household and community, many of which are unique to women because of their gender and traditional gender roles. The challenges specific to women tend to stem from the separation between public spaces, which men occupy, and private spaces, which women occupy.

"Drawing from a dozen empirical case studies with a range of livestock products, KIT et al. (2012) describe practical strategies, approaches and tools for engendering value chains and improving the performance of value chains to ensure that women can participate in and benefit from upgrading value chains. These include: (i) working with men on typical livestock products controlled by women such as chickens, eggs and milk; (ii) opening up opportunities for women to work on what are considered to be "men's" livestock and livestock products and markets, such as cattle and formal cooperatives; (iii) building women's capacity, organization, sensitization and access to finance and information; (iv) using standards and certification to promote gender equity; and (v) promoting gender responsible business" (Sanginga et al., 2013).

Challenges	Opportunities/solutions
1 **Low or Restricted mobility**	• Increase use of farm gate markets; Encourage collective action through women's groups.
2 **Lack of time and of assets**, such as transport, communication, and bank accounts.	• Women's groups and collective marketing can contribute to increasing women's bargaining position, enable women to access high-value markets, and reduce transaction costs. • Women can pool labor, resources, assets, and marketable products to overcome gender-specific barriers that constrain them from participating in economic activities. Collective action has especially been shown to increase women's access to markets and services.
3 **Social norms in livestock production and marketing** limit women's ability to control or market high-value livestock like cattle.	• Poultry, milk from ruminants, including cattle and camels, are commodities recognized by the government of Ethiopia as having potential to contribute to the long-term development of the sector. • Support food and drink processing and services (including sales of milk, butter, ghee, yogurt, tea, and coffee), which are female-dominated occupations.
4 **As commercialization occurs**, women may lose control over commodities and income.	• Support diversification by including crops like vegetables and legumes and livestock like chickens and eggs in the farming system, rather than focusing solely on sale potential and commercialization.
5 **Lack of knowledge and skills related to formal businesses** lead to informal marketing, limiting income and market reach.	• Recognize informal production and marketing cooperatives and support them to become formally organized camel milk businesses. • Pay attention to women's constraints to marketing by providing skills and training, increasing access to assets and technologies, and applying appropriate legal and institutional mechanisms.
6 **Women's challenges and strengths are often invisible** in the formal marketing sector.	• Understand the determinants of women's participation in markets to help identify intervention areas that will optimize women's participation while optimizing their benefits.

Photo: BMGF/Prashant Panjiar

COUNTRY 2

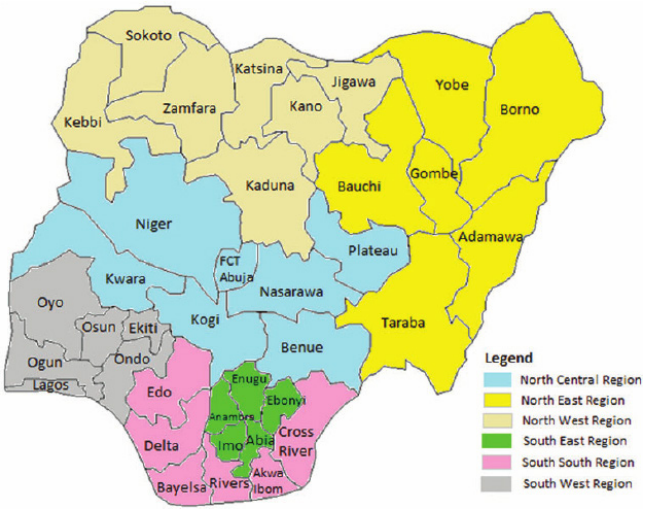
Nigeria

Nigeria is considered a lower-middle-income country with a population of 190 million (102 million are estimated to live under the poverty line) and a GDP per capita of USD 1,968 (NBS, 2020). In 2017, 49.5% of Nigeria's population lived in urban areas, growing substantially from 17.3% in 1968 (Corral et al., 2019). Recent estimates of Nigeria's national herd are 18.4 million cattle, 43.4 million sheep, 76 million goats and 180 million poultry. Livestock contributes to 8.1% of the total agricultural output in the country (FMARD, 2017).

Pastoral System Profile

The Fulani community are the primary pastoral group in Nigeria (Ducrotoy et al., 2016), and there are many sub-groups within the larger group. The Fulani pastoral production system is broadly categorized into i) transhumant pastoralists (~ 7 million) and semi-settled pastoralists (~11 million). Transhumant pastoralists are predominantly found in the northern states where much of the conflict is (Sokoto, Katsina, Jiwaga, Yobe, Borno, Kebbi, Zamfara, Kano, Gombe). The ecological zones in the northern region are Sahelian Savannah, and Sudan Savannah characterized by low crop production and limited forage with livestock often migrating to the southern regions. The settled and semi-settled pastoralists are found in the middle subhumid states (Jos Plateau, Nasarawa, Benue, Kogi, Oyo, Edo, etc.). The southern states are in southern Guinea and Forest ecological zones and mainly practice crop farming with livestock keeping (Lawal-Adebowale, 2012).

Nigerian pastoralists have traditionally practiced open grazing, which now creates conflict with agriculturalists and other settled people. Thousands of people have died in these conflicts, and successive governments have tried different programs to reduce conflict. Most recently, the federal government of Nigeria produced a National Livestock Transformation Plan (NLTP 2018- 2028) that aims to establish 119 ranches by 2028, promote productivity, and quell conflicts in the northern part of the country.



(Gayawan, et al., 2014.)

The NLTP 2018-2028 does not present a clear strategy to protect poor pastoralists, especially women, against exclusion, given that there is significant evidence that large-scale commercialization and national markets tend to erode women's participation in livestock markets (Hodgson, 2000; Flintan, 2008; Njuki and Sanginga, 2013).

Public Policy and Legal Framework for Pastoralism

The Grazing Reserve Act of 1965

While the Federal Government of Nigeria enacted the Grazing Reserve Act of 1965 to protect pastoralism and improve productivity, the Federal Government lacks the authority to compel states to implement the law because the Local Government Area (LGA) authority has had the right to manage state land since 1978. A grazing reserve is a designated area for pastoralists to access fodder for their livestock. The Grazing Reserve Act provides legal backing for establishing grazing reserves in the 21 states of the federation and the federal capital territory (FCT). Of the 141 grazing reserves, 138 are in the north (Chieloka and Awele, 2022).

The National Agricultural Policy of 1998 declared that a minimum of 10% of the national territory, which is equivalent to 9.8 million acres, would be allocated to grazing reserves across the states. This allocation would have created a total of 415 grazing reserves, but was not fully enacted, and to date, only 141 grazing reserves have been formally gazetted by the government. Gazettement means that the occupants of the reserves have a right to government services such as water and infrastructure. As such, most grazing reserves are not gazetted (274) and remain isolated without access to markets and government services, having a negative impact on both men and women (Okello et al., 2014).

The Land Use Act (1978 and revised 2004)

The Land Use Act of 1978 gave the authority to the LGAs to oversee the demarcation and distribution of land in the states, including the allocation of grazing reserves (Section 6). Okello et al. (2014) found that the governance and management of pastures and natural resources within grazing reserves operate in three intertwined spheres: the "formal law" and official state policies; "religious Islamic laws" overseen by the imams; and the "informal or customary laws" under the Fulani community leaders known as *Ardo.* The influence and authority of each sphere varies based on the level of statehood presence, the interaction with other outside communities, or the recent arrival of transhumance migrants.

Some states, especially in the south, have enacted and implemented anti-open grazing laws prohibiting the open grazing of livestock and cattle herding from place to place. In one state, migrating animals are required to use designated grazing routes, even though there is no clarity on what grazing routes mean in Nigeria. This has led to a contentious debate both within the LGA and the Federal Government (Chieloka and Awele, 2022).

Social Demographics and Norms

Human development, particularly education, plays an important role in access and ownership of assets, access to financial institutions, and ability to adopt new livestock technology. In their study in Nafada state, Dan and Kim (2020) found that the level of education of women significantly influenced the extent of participation in livestock production as well as their willingness to engage in livelihood diversification.

Nationally, Nigeria has made significant progress in closing education gaps between men and women.[1] However, there is a notable disparity across states. Southern states, which are primarily populated by crop farmers and some settled agropastoralists, are doing better than northern states dominated by pastoralists – particularly those in the Sahelian and Sudanese ecological zones. Similar trends are observed in fertility rate, child mortality, infant and maternal mortality and nutrition for women and children, suggesting that pastoralist women have been left far behind in Human Development (MICS, 2021; NDHS,2019). Similarities can be observed among pastoral communities in Kenya, Tanzania, and Ethiopia (KDHS, 2014).

Disparity between states

42.5% of women in Osun state in the south have attained secondary education, but only 3.2% have attained the same level of education in Sokoto in the northeast region.

Several studies focusing on northern states such as Bauchi, Kaduna, and Kano found that even though girls' formal education was extremely low – a significant number of women in the Fulani community have attended Qur'anic schools (*almajirai*).[2] *Almajirai* schools follow Islamic doctrine, but do not necessarily equip students with literacy or numeracy skills (Ajala et al., 1998; Dan and Kim, 2020). Nevertheless, some scholars argue that *Almajirai* schools are filling gaps in the absence of state education in the northern part of the country.

Marriage

Women are more likely to marry before their 18th birthday (43%) compared to 4% of men. Polygamy is widespread in the north. For example, in Katsina state 50% of women reported having co-wives. Abia state in the south reported 3% (NDHS, 2019).

Mobile Penetration and Access to the Internet

Digital services provide an important means for reaching pastoralists with information. In Nigeria, mobiles are widely used, even in the northern states, with a national average penetration rate of 78.6% for women. In the northern region, most states have averaged overall above 50%, with Yobe and Kebbi states recording the lowest overall mobile penetration of 39.6% and 40.6%, respectively (MICS, 2021).

1 Recent statistics show that the percentage of women with no education in Nigeria has decreased since 2003, from 42% to 35%. The median number of years of schooling completed for females has increased from 5.0 to 6.5 years and 6.6 to 10.5 years for males. Secondary school or higher-level attainment among women has also increased slightly, from 16% to 23%, while among men, it has increased from 24% to 30%. The Gender Disparity Index (GDI) for primary and secondary school is 0.95 and 0.91, respectively (NDHS, 2019).

2 *Almajirai* refers to a system of Islamic education practiced in northern Nigeria. The male gender seeking Islam knowledge is called **Almajiri**, female gender is **Almajira**, and the plural is **Almajirai**. Almajirai are children, usually from poor rural backgrounds, who leave their hometowns to study Islamic learning.

There is, however, disparity in access to the internet – particularly between men and women in the northern states. Nationally, 30% of women and 31% of men age 15-49 use the internet at least once a week. Among the states, Lagos has the highest proportion of women (60%) and men (74%) using the internet. Women and men in Kebbi (1% and 11%, respectively) and Sokoto (1% and 14%, respectively); both northern states, are least likely to have ever used the internet (NDHS, 2019).

The percentage of women who read a newspaper at least once a week is very low. Urban women are over two times more likely to read a newspaper than rural women (7% and 3%, respectively). The urban-rural gap is more evident in television viewing, with 51% of urban women and only 17% of rural women watching television at least once a week. The percentages of women and men with no access to any of the three media sources are highest in the northeast (73% and 68%, respectively) and lowest in the southwest (28% and 15%, respectively) (NDHS, 2019).

Gender and Pastoral Systems in Nigeria

The position and roles of women and men are rigorously defined for every aspect of life in the Fulani community. Both men and women express strong moral codes, or *Pulaaku* (Hudgson, 2000). *Pulaaku* regulates and restricts social-economic behaviors and interactions. Among Samburu pastoral communities in Northern Kenya, *nkayit* is the term used for the same type of moral code. *Pulaaku* regulates how a girl, or a boy, behaves – as a child, as a youth, and after marriage. In general, it defines the interaction between boys and girls, women and men, young and old. *Pulaaku* is not only applicable within households but also in external spaces such as markets (Hudgson, 2000).

> Both women and men described *a good Fulani woman as "one that never leaves the compound and virtually is never seen in public, while a good Fulani man provides for his family"* (Hudgson, 2000).

Dan and Kim (2020) found that the average household size of the Fulani community was between 6 and 10 members. Due to their transhumant history and patterns, households are fluid in composition and function – seasonal changes affect both the gender roles and division of labor.

Gender Roles and Livelihoods

The workload of women and division of labor in households are influenced by migration patterns, whether the household practices crop farming, the type of livelihood diversification available, livestock mobility, and herd size. Most Fulani women participate regularly in livestock activities and household management but have less involvement in decision-making. Regular household chores for women include cooking, cleaning, caring for children and elders, and fetching water and firewood. The primary livestock care activities include, but are not limited to: cleaning animal sheds, taking care of sick and young animals, fetching water for livestock, milking, processing animal products, and marketing and selling animal products (Dan and Kim, 2020; Aderinoye-Abdulwahab et al., 2015).

Like most pastoral women, Fulani women acquire livestock through inheritance, allocation, markets, gifts, or collective action (Kristjanson et al., 2010). Livestock and livestock products sold by women include dairy products, eggs, poultry and at times small ruminants (Dan and Kim, 2020). Small ruminants and poultry are easier to manage than cattle because they scavenge on smaller pieces of land and can be around all season (Oluwatayo, I. B., and Oluwatayo, T. B., 2012; Dan and Kim, 2020). Fulani women dominate intrahousehold milk allocation, and milk distribution, processing, and marketing – and use simple home-processing methods to add value to milk (sour milk (nono), butter, and ghee). Majekodunmi et al. (2017) found that 88% of women interviewed in Jos Plateau sold milk and milk products as their primary source of income. In the northern Sahelian zones, sheep and goats are the most important sources of income for pastoral women because they require a small initial investment and thus the risk of loss is small as well. Sheep and goats also provide milk and meat and can be sold for ready cash income to meet immediate needs, such as acquiring agricultural inputs and paying school fees (Oluwatayo, I. B. and Oluwatayo, T. B., 2012).

Migration, for transhumant pastoralists, has serious consequences for households. Migration means i) change in household size, often with implication for workload, ii) reduced or complete loss of a main source of food, and iii) reduced or complete loss of family income (Aderinoye-Abdulwahab et al., 2013). Generally, men and boys move with livestock while women and the elderly are left behind.

> During the migratory season, women may lose access to dairy products as herders move with the animals in search of pasture. Women in Jos Plateau reported losing up to 82% of their income from milk as cattle migrate. As an adaptive measure, households with larger herds opt to split the herd in two (a few livestock are left at home while the rest are migrated to better pastures). This practice, however, is limited to wealthier households in better ecological zones (Majekodunmi et al., 2017).

During this period women are left without their main sources of livelihood and are forced to increase sources of income to support the family (Aderinoye-Abdulwahab et al., 2013). In

agropastoral systems, women's workload further increases as they are forced to take up crop farming in the absence of the boys and men who are the primary providers of labor in the field (Aderinoye-Abdulwahab et al., 2013). Women acknowledge taking up household decision-making (such as disciplining children), a role which is mainly performed by men. These expanding decision-making spaces for women are also observed among the Maasai in Kenya (Wangui, 2014) and the Borana in Ethiopia (Anabacha and Kjosavik, 2019).

BOX 1: **The important role of livelihood diversification**

The important role of livelihood diversification is demonstrated in Kachia Grazing Reserve in Kaduna State, where through Self Help Groups women are able to widely diversify their income through selling agroforestry products, handicrafts, and home soap, and other small businesses, which promote vibrant economic activities for women (Badejo et al., 2017). The income earned enabled women to buy food and meet other household expenses. Through consistent regular income, households could safeguard herd growth and retention, contributing to better stock sales. Indirectly by covering day-to-day expenses, women contributed to households building herds and assets. This agrees with the findings from the REAP (Rural Entrepeneur Access Project) project in northern Kenya, which found that women were able to increase their assets and household livestock by having an additional stream of income to meet day-to-day expenses (Arnold and Gammage, 2019).

While Dan and Kim (2020) found that a larger herd size meant an increased workload for women, Majekodunmi et al. (2017) noted that households with very large herd size (average 188 in Jos Plateau state) were able to decrease their workload by hiring paid herders, and in those cases 88% of Fulani women did not participate in the management and production of livestock, although they continued to sell milk once it had been obtained by hired herders.

Apart from processing animal products, Fulani women also historically played a key role in animal health. Unfortunately, dissemination of veterinary services and the literacy requirements of modern animal medicine exclude women from accessing information, skills, and knowledge (Farinde and Ajayi, 2005). In Jos Plateau state women are not allowed to interact with men based on cultural norms, limiting all access to veterinary services if providers are male (Aderinoye-Abdulwahab et al., 2015). One respondent in the study noted that during drought when husbands are away, women lose sick animals due to their limited knowledge of animal health because they can only access veterinary services through their husbands (Aderinoye-Abdulwahab et al., 2013). Aderinoye-Abdulwahab et al. (2013) recommend employing more female extension personnel so as to reach out to pastoralist women, particularly in areas where factors such as culture bar them from benefiting from productive resources and services such as extension. Badejo et al. (2017) suggest that self-help groups such as the one in Kachia reserve could be used as an entry point for training women in veterinary services and new technologies.

Apart from livestock and crop-related income, most pastoral women report engagement in other livelihood-diversifying activities. In most households, livelihood diversification is an essential survival tool. Those households with multiple income streams were much better at absorbing shocks, sustaining herds, and getting better prices for livestock (Majekodunmi et al., 2017; Aderinoye-Abdulwahab et al., 2013).

Social Networks in Pastoral Communities

Social networks provide a safety net in pastoral communities, as they are a main source of information on the state of the pastures, safe routes, and water sources, and a mechanism to redistribute wealth and food as needed. In the Fulani community, we identified two types of social networks. One is the community social norm known as *Zakat*, and the other is the organic organization of women to support and empower each other (Ducrotoy et al., 2016; Badejo et al., 2017).

Zakat is the practice of donating one animal for every 40 heads of livestock in the household, providing a safety net for poorer households in the community. Ducrotoy et al. (2016) found that in Kachia Reserve, 75% of the gift of *Zakat* was donated to non-relatives, while 25% were donations to relatives. In Samburu it is referred to as *Paran*.[3] However, as more pastoral families settle and practice crop farming, the role of *Zakat* and *Paran* as a community safety net has been substantially reduced.

The second form of social network is women's self-help groups. In Kachia Grazing Reserve (see Box 1) women came together to form a SHG to offer economic, social, physical, and psychological support to its members through collective action. It was a prerequisite that all the women in the SHG were married because the group was founded to mentor

3 Paran in Samburu and Maasai communities is an act of borrowing – where the poorer household members can receive support from the wealthier in the form of livestock. This is a way to enable poorer households to rebuild wealth after experiencing a big loss. There is no restriction on the number of Paran, although modesty is encouraged.

newlyweds about marriage and family, as expected in the Fulani culture and customs. However, the group's activities expanded beyond mentorship to economic empowerment of women even in public spaces (Badejo et al., 2017). Eventually, the women's SHG was able to build a school and continuously pay teachers' salaries as members' wealth increased (Badejo et al., 2017). Another example is in northern Kenya, where the NGO BOMA launched a project in 2008 in which women were assigned into groups of three, where consistent mentorship for 2 years was provided to build literacy, numeracy and entrepreneurship skills (Arnold and Gammage, 2019). The project is part of BOMA's Rural Entrepreneur Access Project (REAP), a poverty graduation project that entails evidence-based sequence interventions for a period of 16 to 24 months. (For a description of the project, see Annex 1.)

Women's Participation in Livestock Markets

Livestock markets differ in the northern and southern regions of Nigeria. While selling and buying poultry and small ruminants occurs in the north, for better cattle markets one must travel to the south. The semi-settled and settled pastoralists in the middle and southern states have better access to markets overall (Nagajan, 2019; Ducrotoy et al., 2019; and Majekodunmi et al., 2017).

Women's participation in markets varies by the market product, the level of mobility, the degree of isolation of the reserve, time constraints, security, education level, access to market information and level of distress (Njuki and Sanginga, 2013; Dan and Kim, 2020; Aderinoye-Abdulwahab et al., 2015). Still, there is no indication that Fulani women are participating in large national markets but rather in informal markets, closer to the homestead (Badejo et al., 2017). Women interviewed in Dan and Kim (2020) and Aderinoye-Abdulwahab et al. (2015) noted that their livestock products were commonly sold at i) farm gates ii) periodic markets and iii) small urban centers.

Farm gate marketing is when products are directly sold from the seller to the customer without a market structure. Products can be sold from farm gate to consumer, farm gate to traders, or farm gate to periodic markets (Njuki and Sangiga, 2013). In Aderinoye-Abdulwahab et al. (2015), women noted they were not allowed to travel to the small informal markets. Still, customers would come to the homestead periodically to consolidate poultry and poultry products. The buyers benefit from low market prices of the products while women sellers can bypass mobility restrictions and avoid incurring transport costs. Women's benefits and preferences for farm gates are documented by Njuki and Sangiga (2013), who conducted studies in Kenya, Tanzania and Mozambique. The potential of farm gate outlets in insulating pastoralist women against gender-specific constraints could be explored.

Another market often used by Fulani women both in the northern and southern regions are the periodic markets. Abdulhameed (2022) identifies four types of periodic rural markets that act as exit outlets for livestock products: i) daily markets, ii) two-day markets iii) twice-a-week markets and iv) one-day markets. Periodic markets are often alongside the road or outside of mosques and act as bulking zones where goods and livestock are aggregated and transported to larger urban centers. Periodic markets are outlets for livestock products, small and large ruminants, as well as poultry (Abdulhameed, 2022; Dan and Kim, 2020).

Box 2 **Benefits of social networks in addressing gender-specific constraints**

Bige Weti (We are enlightened) is an umbrella organization of six women SHGs in Kachia Grazing Reserve (KGR) in northern Nigeria. Apart from mentorship from experienced group members, women also receive training in various income-generating activities. Non-livestock-linked diversification enabled them to increase their income, which increased their ability to make decisions within the household. The group also owned rotational sheep where the lambs stayed with members to enable asset ownership and accumulation.

Although KGR was isolated, with bad roads and strong customary authorities, women had more freedom through the SHGs and could travel in and out of the reserve to participate in local markets. As a result, the SHG's agency within the community increased significantly, although it was limited to women-related issues.

Limitations: SHGs reproduced inequalities, as unmarried women and poorer women were excluded from group membership. The committee of the group were required to have literacy skills even though most of the members had no formal education.

Challenges: The SHGs were not formally registered, limiting access to financial services and other benefits from formal institutions.

Opportunities: The SHGs fostered cooperation, self-confidence, and interpersonal skills. The success of Bige Weti illustrates the potential of using the social network of women as an entry point for new technologies and investments targeting livestock (Badejo et al., 2017).

Gender-specific challenges faced by Pastoralist women in Nigeria and SSA

The gender-specific challenges faced by pastoralist women in Nigeria are very similar to those faced by other women in rural areas. However, for pastoralist women these challenges are magnified by the intersection of other factors such as cultural norms dictated by religion and traditional values, marginalisation, isolation of grazing reserves, lack of access to government services, extremely low literacy and numeracy skills, insecurity, and needing to travel long distance to markets, among others. However, pastoralist women are resilient, and this historical exclusion has led them to navigate and create opportunities and social networks to support each other. This ability to self-organize provides an opportunity to expand the economic capabilities for pastoralist women, as discussed below.

Challenges and Opportunities

Challenges	Opportunities
1 **Little to no access and control over main livestock assets**, particularly large ruminants.	• Women have access to livestock products and backyard livestock, i.e small ruminants and poultry. Investment can target women-controlled livestock assets.
2 **Low or Restricted Mobility** • Reserves that are not gazetted lack roads and other government services. • Distance to markets. • Social, cultural norms, time poverty, workload, and insecurity on market routes. • Living in a homogenous environment without markets.	• Expand use of farm gate marketing and decentralized collection centers that feed into bigger markets. • Use technology to get information from pastoralist sellers and aggregate data. • Use women's groups to consolidate products and access markets.
3 **Seasonality of dairy products** contributes to women-controlled asset erosion to meet daily household needs.	• Diversification of livelihood – non-livestock-related income can mitigate the seasonality. of livestock income (e.g. Kachia women's Group and Boma REAP Project). • Existing social networks may help even out incomes.
4 **Low Human Development** Evidence from demographic data across Nigeria and beyond show pastoralist women have extremely low literacy and numeracy skills in comparison to their counter parts in rural areas.	• Use women's groups as an entry point to conduct training, provide veterinary services, and introduce new technology. • Numeracy and literacy skills have been documented to significantly improve women's access to markets and earn income – BOMA REAP projects conduct a two-year mentorship program to build women's numeracy, literacy, and entrepreneurial skills.
5 **Low market information** Final prices for livestock are often determined through negotiation and bargaining, which is reliant on access to market information. Market information is often controlled and accessed by middlemen who may exclude women. Lack of market information makes women weak sellers and vulnerable customers.	• Standardize livestock and livestock prices. • Increase non-livestock-related income to prevent distress sales; use farm gates and smaller markets. • Leverage technology where possible –Cowtribe uses offline USSD technology to send and receive information from customers.
6 **Lack of access to capital and financial services** Low asset ownership, low literacy levels, cultural norms and physical isolation from financial services have severely limited the ability for pastoralist women to access capital and formal financial institutions.	• Invest in country policies that promote women's access to productive assets (e.g. land). • Partner with financial services to increase financial inclusion. • Support use of mobile money and informal social networks such as saving groups as stepping stones to formal financial institutions.

7	**Limited inclusion in access to veterinary services** Most veterinarians and para-vets are male, which can limit women's access to them because of cultural restrictions on male/female interactions.	• Train more women para vets. • Support technology use, for example, Crow tribe, to expand access to women. • Use women's social groups as an entry point for training.
8	**Exclusion from benefits of economies of scale** Women lack capital to sell or buy livestock in bulk hence sell in small quantities, which hinders the benefits from economies of scale (e.g low transport cost or better negotiation in buying and selling).	• Standardize prices to diminish the differences in scale. • Increase use of farm gates and collection centers to eliminate transport costs and give women sellers better prices. • Consolidate goods and products through collective action to bring benefits from economies of scale.
9	**Lack of targeted data to understand women as sellers and buyers** Studies targeting pastoralist are limited and even fewer studies include women pastoralists**.**	• Collect sex disaggregated data in both periodic and ongoing surveys.
10	**Deprivation of opportunities offered by technological and digital developments due to poor targeting** Despite an expanding interest in Agri Tech solutions in Africa, technology targeting pastoralist women is rare.	• Include pastoralist women as viable targets for digital products.

Photo: BMGF/John Ahem

COUNTRY 3

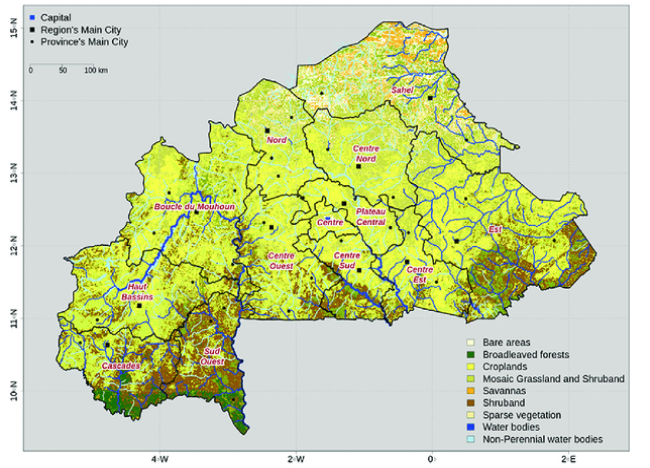
Burkina Faso

Pastoral System Profile

Livestock contribute to the incomes of an estimated 91% of rural households in Burkina Faso, or 18.7 million people (Minot and Elahi, 2020). Minot and Elahi (2020) categorize 7.9% of rural households (~1.6 million) as agropastoralist and 28% (~5.7 million) as pastoralist. Throughout Burkina Faso the zebu, or humped cow, is the most commonly raised animal, but goats and sheep are also present. Men are the primary owners and herders of cattle, but women benefit from selling milk (Vall et al., 2021).

Throughout Burkina Faso, and the Sahel more generally, the Fulani are the largest pastoralist group, but the Mossi (the majority ethnic group in Burkina) and other groups also own livestock, often as agropastoralists (Higazi and Abubakar, 2018). Within the Fulani, there are numerous sub-communities that differ in terms of culture and customs as well as in degree of transhumance.

Community decisions among pastoralists in Burkina Faso are made by community development councils and local chiefs. This includes the allocation of community land and enforcement of customary rules. Land use planning is governed by village development councils, which are dominated by farmers and not pastoralists. As a result, they often fail to establish pastoralist areas in their locality, despite the presence of pastoralists, and discriminate against transhumant pastoralists, women, and young people. Further, open access pasture is being converted to farmland, and pastoralists often lack access to resources (Bisson et al., 2021).



(Tibiri, et al. 2020)

Public Policy and Legal Framework for Pastoralism

Pastoralism in Burkina Faso is governed by the Pastoralism Policy Act (n 034-2002/AN), which defines pastoralism and sets principles for the management of pastoral, agropastoral, and sylvopastoral activities. The Act also defines conditions under which the State or Territorial Collectivities grant pastoralists access to resources, to assure rights to equitable utilization of natural resources and their right to herd mobility (MRA, 2010). However, this act is reportedly not enforced and lacks implementing decrees (Bisson et al., 2021).

The Land Tenure Act of 2009 (Law No. 034-2009/AN) defines a number of important rules that affect pastoralists. It ensures equitable access to rural land for all stakeholders; promotes investments in agriculture, forestry, and pastoralism; promotes sustainable management of natural resources; protects property rights; prevents and manages land conflicts; and builds a framework for ensuring rural land tenure security. Rural land charters at the village level are the institutional mechanism for assuring herders access to grazing resources, considering customary land rights and usage as well as contextual diversity. Charters are facilitated by the state, and should include representative groups of

stakeholders, including women, forest users, pastoralists, and youth (Hughes, 2014). The Agrarian and Land Tenure Reorganization Act (Law No. 034-2012/AN) builds on the Land Tenure Act by providing the legal framework for local land use planning (Kaboré et al., 2014) and reaffirming the principle of gender equality. However, the gender equality provision only ensures that sons and daughters are treated equally under formal inheritance law if the marriage is a recognized civil one, which is rarely the case in rural areas (Hughes, 2014).

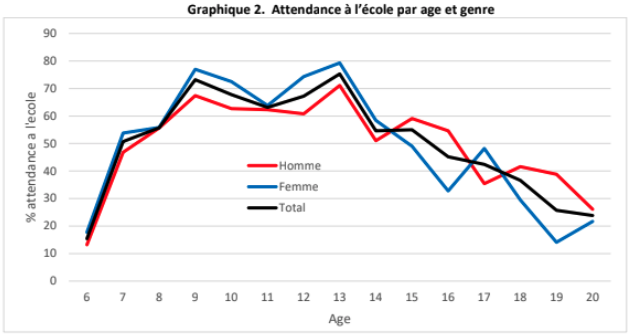
Social Demographics and Norms

The position of Fulani women in Burkina Faso is very similar to their counterparts in Nigeria – which is extensively discussed in the Nigeria profile. The role of women and the role of men are rigorously defined within a robust moral code (*Pulaaku*) and Islamic religion. Women earn status after marriage but are only allowed to socialize in the marketplace and with other women after the birth of the first child. After menopause, women take key roles in the social planning of community activities, such as naming ceremonies and weddings, with much more freedom and flexibility (Hodgson and Hodgson, 2000).

Men in Burkina Faso are legally allowed to marry at 20 and women at 17 (Code of Persons and Family, art. 238 , 1989). However, more than half of the girls in the Sahel region, where most pastoralists live, are reportedly married before that (Amnesty International, 2016). The Ministry of Social Action and National Solidarity released a *National Strategy on the Prevention and Elimination of Child Marriage 2016-2025* (OECD, 2019), which seeks to eliminate child marriage, including both legal marriages and traditional marriages not recognized by law.

Literacy is lower among pastoralist women than men: 78% of adult women and 52% of adult men are illiterate. However, as shown in the figure below, school attendance is quite similar between women and men, suggesting that this inequality may decline in the future. At the same time, for both women and men, school attendance drops off sharply around the beginning of secondary school.

Graphique 2. Attendance à l'école par age et genre



Source : Analyse de l'Enquête auprès des ménages ruraux sur la résilience, 2019.

Mobile Penetration and Access to Internet

Reaching economically poor and remote women with information through mass media or mobile phones may not be possible at this point in Burkina Faso. Glennerster et al., (2021) found that Burkina Faso's media environment is dominated by local-level radio stations that broadcast in the local languages, which is important because only about 20% of the population speaks French. Mobile and internet penetration are increasing (Data Reportal, 2021), but Burkina Faso falls behind other African countries on these measures, and women are less likely than men to own mobile phones. This may be in part due to low levels of access to electricity. Greenleaf et al. (2019) use a nationally representative survey to estimate that 47% of women ages 15-49 own a cell phone in Burkina Faso nationally. However, numbers are likely much lower among pastoralist women, who are generally in lower income and more rural households than the general population.

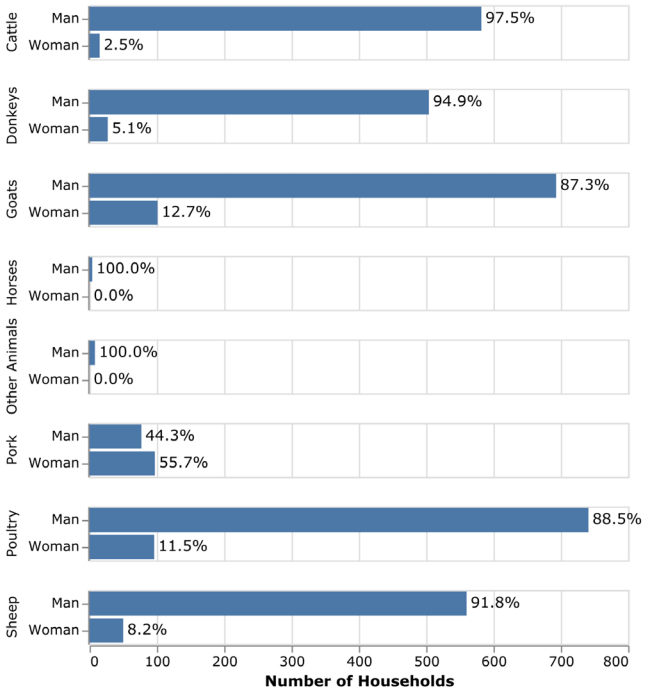
Gender and Pastoral Systems in Burkina Faso

In both transhumant and agropastoralist communities, women are in many cases responsible for milk processing and sales. Transhumant pastoralists rely on pasture for feed, and milk yields are typically low: around 1.4 liters per animal per day (Vall et al,, 2021). Agropastoralist households produce greater quantities of milk than their transhumant counterparts: about 3.1 liters per animal per day, and milk sales are about three times as high as among the transhumant pastoralists. Among the Fulani in the Sahelian zone, women's primary role is in processing and marketing milk, but men are also involved in milk production (Oumou et al., 2022). Most of the money generated from milk production historically went to women. Unfortunately, as dairy activity is becoming a more important source of household income, women are increasingly being excluded (Vall et al., 2021). Among the Fulani, women are also not generally involved in cropping activities (Oumou et al., 2022), but are involved in milking, milk processing and milk sales as well as soap and butter production (Zoma-Traore et al., 2020).

Mothers and daughters, daughter-in-law and mothers-in-law often collaborate in milk selling, particularly butter and sour milk. However, co-wives managed their milk processing and selling independently (Hodgson and Hodgson, 2000).

Gender Roles and Livelihoods

Both women and men are involved with feeding and caring for livestock in Burkina Faso, but most households report that men are primarily responsible for these tasks, even for smaller animals that in other countries are more often managed by women. The graphic below depicts data from a resilience survey of pastoralists conducted as part of the "voix pour la changement" project by SNV (l'Organisation Néerlandaise de Développement.) Respondents were asked to identify the individual who was primarily responsible for caring for each type of animal within the household; the bars below represent the number of households that identified men and women as primarily responsible for a given type of animal. In the majority of cases, men were more often identified as primarily responsible for all animals except pigs. The total number of households with pigs was relatively low, however, and women were only slightly more likely than men to be identified as principally responsible. Women were noticeably more likely to be responsible for smaller animals such as goats, poultry, and sheep than for larger animals.



As with management, livestock ownership in Burkina Faso is concentrated among men, but women do in some cases own livestock. Children (boy or girl) acquire their first livestock from their parents during the naming ceremony, and later, the father might allocate more livestock. However, these adolescents' allocations tend to favor boys compared to girls (Hodgson and Hodgson, 2000).

Bride prices are commonly paid in cows, although cash is increasingly used. In case of a divorce, the woman must return the bride price to the man's family. If the husband dies, the children inherit the livestock, although girls generally receive fewer livestock than boys. When women return to their original families after divorce or death, livestock are transferred to her husband's family (Hodgson and Hodgson, 2000).

Social Networks in Pastoral Communities

Social networks provide important risk-sharing and credit services to households in Burkina Faso. Ellsworth (1998) reports that 28-33% of income is contributed to networks of family, friends, and kin. Money contributed to these networks is then distributed according to need, serving as informal insurance. Rotating savings and credit associations (ROSCAS), known locally as *tontines,* also exist to provide credit (Sommerfeld et al., 2002). Kazianga and Udry (2006), on the other hand, find very little evidence of risk sharing in a sample of agropastoralist households in rural Burkina Faso, finding instead that households rely almost exclusively on self-insurance in the form of adjustments to grain stocks. This suggests that there is a wide range in terms of the degree to which households are able to rely on social networks to support them in times of need.

Women's Participation in Livestock Markets

Few studies mention women's involvement in livestock markets in Burkina Faso, but given that social norms dictate that men are generally responsible for managing livestock and the roles considered appropriate for women outside the house are limited, evidence suggests that as in other countries women are significantly less involved in livestock markets than men.

Although it is not clear whether lessons learned from livestock projects more generally can be applied to pastoralists or agropastoralists, the SELEVER project,[4] which focuses on women's empowerment through increased poultry production, may provide important insights into

4 SELEVER I was a five-year program from 2015-2020 in three villages, and SELEVER II a six-year program in four villages but with expanded reach in the original three villages. The BMGF funded programs were designed to improve the nutritional status of women and children in rural Burkina Faso by strengthening women's economic empowerment through increased poultry production. SELEVER II is aiming for inclusive transformation of the poultry sector in Burkina Faso through improved quality and access to veterinary services and products, increased women's economic empowerment, and increased consumption of nutritious foods by all rather than primarily improving nutritional status.

women's empowerment that can be transferred at least to agropastoralist communities. SELEVER conducted a gender analysis in Burkina Faso to identify gender-specific barriers and opportunities for women to become more involved in poultry production and other entrepreneurship domains. The gender analysis targeted the Boucle du Mouhoun and Centre Ouest regions of Burkina Faso, where the SELEVER project was implemented.

The Lessons Learned report from SELEVER I on women's empowerment found that through a combined livestock/women's empowerment/food and nutrition security project, it was possible to make changes in household/community norms, particularly changes in general self-efficacy, decision-making on off-farm activities, and income. These are changes that livestock projects do not often aspire to, as they are seen as outside their scope/area of expertise, but are necessary if change is to be inclusive. However, the report also found that the interventions could have been more impactful. The light-touch, information-only approach centered on strengthening market/value change linkages, and did not provide any asset transfers in a resource-poor context. The Pro-WEAI diagnostics suggest focusing on: i) access to credit and financial accounts, ii) improving work balance, and iii) membership in influential groups could lead to impacts on women's empowerment (Selever , 2020).

Livelihood Diversification and Income

Sedentarization and crop farming can be effective as a livelihood diversification strategy, but also have the potential to exacerbate conflict between agropastoralists and crop farmers, as documented by Abroulaye et al. (2015). Zampaligré et al. (2014) conducted a series of focus group discussions among agropastoralists to study responses to climate change. The most important adaptation strategies mentioned were crop diversification, combining crop and livestock operations, and use of new water technologies such as half-moons or stone dikes. Pastoralists mentioned changing migration patterns and taking up cereal cropping. Zampaligré et al. (2019) document a long-term trend toward sedentarization, suggesting pastoralism is becoming more difficult in a changing climate.

Nielsen and Rienberg (2010) argue that culture and gender roles have been a barrier to effective climate adaptation among the Fulani in northern Burkina Faso. In particular, they argue that labor migration, working for development projects, gardening, and the engagement of women in economic activities are regarded as inappropriate or slave-like work, which has led the Fulani to adopt these practices to a lesser degree than their neighbors the Rimaibé, another agropastoralist group. Cultural beliefs and tradition may lead some groups to be more reluctant to adopt new livelihood strategies, making them less resilient to a changing climate.

Challenges and Opportunities

Challenges		Opportunities
1	**Low or Restricted mobility**	• Strengthen farm gate markets. • Support collective action through women's groups.
2	**Women are excluded from handling milk-related money when this activity becomes economically important in the household.** Among the Fulani, income from milk goes exclusively to women until the decision is made to sell the milk to a dairy (Val et al., 2021).	• Strengthen farm gate markets. • Gender sensitization for men and women. • Training and education for women who need number literacy.
3	**Men predominate in the milk value chain as milk dealers, animal healthcare agents, AI service providers, and extension staff.**	• Improve women's access to credit and training. • Train women as extension staff and ensure women pastoralists receive extension services.
4	**Lack of knowledge and skills related to formal businesses lead to informal marketing, limiting income and market reach.**	• Recognize informal cooperatives and support them to become formally organized dairies.
5	**Women's challenges and strengths are often invisible in the formal marketing sector.**	• Understand the determinants of women's participation in markets to help identify intervention areas that will optimize women's participation while optimizing their benefits.

Conclusion and Program Recommendations

Gender-specific challenges faced by pastoralist women

Our research indicates that there are clear commonalties across all three countries (and beyond) among women pastoralists. The gender-specific challenges faced by pastoralist women are very similar to those faced by women in rural areas. However, for pastoralist women these challenges are magnified by their isolation and mobility. Nonetheless, pastoralist women are resilient, and historical exclusion has led them to navigate and create opportunities and social networks to support one another. Some examples of gender-specific challenges for pastoralists include:

1. **Little to no access to and control over main livestock assets, particularly large ruminants**. Evidence in Kaduna shows that cattle, controlled by men, contributed to **almost 96% of total household assets**, although 98% of women participate in all livestock management activities. Women often control poultry and small ruminants because little capital is required to purchase and keep them, they can be managed on small tracts of land, and exchanged for cash to meet urgent household needs. Investments intended to close the gender asset gap must **include deliberate efforts toward expanding women-controlled spaces**.
2. **High asset erosion rates make it difficult for women to meet day-to-day households needs**. Pastoralist women depend on dairy products for household consumption and income. Changes in ecological conditions can force men in the household, particularly transhumant families, to migrate away with cattle for an extended period of time, leaving women behind as sole providers **but without their main source of income and food**. This difficult situation may force women to **liquidate their controlled assets to meet household needs**. Two of the project examples in Annex 1, BOMA and Kachia Women's Group, address these challenges by **working with women to diversify their livelihoods through investments in non-livestock**-related activities.
3. **Low or restricted mobility.** Pastoralists often live far from markets. For example, Fulani communities in northern Nigeria may have to travel 200 km or two-to-three days to reach large ruminant markets. Women's access to these markets is limited by time poverty, the cost of transport, and cultural factors, which restrict women's travel from home. **Farm gate and collection centers that** bring markets closer to women may be a good investment.
4. **Exclusion from benefits of economies of scale.** Women often sell and buy in small quantities due to market distance and low capital. **Women's networks** may strengthen their position as buyers and sellers.
5. **Lack of market information.** Evidence from the Nigeria livestock market indicates that final prices for livestock are determined by negotiation and bargaining. Yet market information is often accessed, controlled, and restricted by brokers who are male. Lack of access to market information can contribute to women being vulnerable buyers and weak sellers. **Standardization of livestock prices** can devalue market information, giving women the opportunity for equal competition.
6. **Lack of numeracy and literacy skills inhibit women's access to financial institutions and market information.** The BOMA project has been successful **in using trained mentors to build women's entrepreneurship skills as well as basic numeracy skills**. The mentor assembles business groups of three qualified women and helps them write a business plan. Mentors visit with each business and savings group monthly for two years.
7. **Limited access to veterinary services and information due to lack of accessibility.** Digital technology such as **Crowtribe** in Ghana have been used to reach rural and far to reach areas. Crowtribe is helping farmers to access vaccines and veterinary information through technology and a network of vets.
8. **Limited research and data is available on women pastoralists, including their access to digital services.**

   However, there are also important differences as well, and a gender analysis specific to women's role in the household, community, and livestock value chain for each country will be an important first step in project design. Successful programming for women will require a more hands-on effort than might be expected if the programming were gender unintentional. A holistic approach is needed to address the barriers women face that men do not, many of which are listed above.

Program Recommendations

Activities to Consider as Part of Any Investment

A critical component of "do no harm" for any pastoralist project is to pay close attention to unintended consequences throughout the project through careful monitoring and tracking. While gender unintentional projects create serious risk for unintended consequences for women, projects that support women's traditional activities, especially where

women's income increases, also risk women losing control of the activity to men. When women lose control over resources, then their ability to manage various household essentials decreases, including managing household nutrition, seeking medical care, paying for education, or purchasing household necessities like soap. To be gender intentional, the following activities need to be considered as part of any investment in pastoralists:

- Sensitize men and women to expand their view of acceptable activities for women and men.
- Encourage elders to promote women's interests as valuable to the community as a whole.
- Build on positive traditions, specifically existing social networks and community obligation to take care of one another.
- Ensure that women receive training in specific areas of need, including animal health, business management, resource governance, etc.
- Increase women's access to and use of digital services.
- Budget to hire gender expertise, conduct a gender analysis, and reach women through community conversations, information campaigns, and training specific to their needs.
- Do not weaken social networks by heavily supporting one grouping over another (men over women or vice versa, for example), but rather look for investments in the whole community, which will strengthen social networks and assist with climate disasters. Monitor and track the impact of activities that support one gender over another for unintended consequences.

Suggestions for Investments to Promote Gender Equality

- To include women, set aside a portion of the portfolio for investments specifically focused on species and products that women sell (dairy, poultry, small ruminants) and markets that women have access to (farm gate and local markets). Work with local women's groups or organizations that can organize women around production and marketing cooperatives. Use SHGs as an entry point for training and resource sharing. *Bige Weti* (We are enlightened), an umbrella organization of six women SHGs in Kachia Grazing Reserve (KGR) in northern Nigeria, provides a possible model (Badejo et al., 2017).
- Support food and drink processing and services for women-dominated occupations (i.e., dairy processing—butter, yogurt, sour milk). The IFPRI (2012) study focused on diversification and recommended that one way to diversify was to support women's processing (Headey et al., 2012).
- Support diversified markets that are more inclusive of livestock that women raise. Tavenner et al. (2019) found that supporting diversified markets could limit the unintended consequences of commercialization (women losing control of the resource).
- Support informal cooperatives and markets to formally organize, ensuring that women have the skills to manage a more formal business (training, mentoring, information exchange) to enable women to reach high-value markets. Gebremichael et al. (2019) found that in Ethiopia, women were able to control money earned from participating in cooperative dairies but that informal cooperatives earned less money.
- Train women para-vets and extension workers to work with women pastoralists. Aderinoye-Abdulwahab et al. (2013) recommend employing more female extension personnel to reach pastoralist women, particularly in areas where culture does not allow women to work with men. Note that female para-vets and extension workers may face challenges in obtaining training, being hired, and being able to be mobile enough to serve women in their communities. This is likely to vary from place to place, and considerable time may be required to increase the number of female workers. The IFPRI project described in Annex 1 may provide options for consideration.
- Design programming for women and children who are left behind when men migrate. Identify their specific needs for information and training, and focus on reducing workload and increasing access to extension and veterinary services. The IFPRI project described in Annex 1 may provide options for consideration.
- Provide appropriate credit and training to pastoralist women to help diversify their income and better manage shocks. The BOMA project and the Pastoral Development Project, described in Annex 1, provide examples. Financial management, numeracy, literacy, and business development skills are part of most of the projects described in Annex 1.

ANNEX 1

Project Examples

We have pulled together six examples of projects working with pastoral women. Most of these projects have a component that focuses on women, but women are not the primary target group. BOMA REAP is an exception.

BOMA REAP Project (Kenya)

The BOMA project was started in 2008 in northern Kenya, targeting women pastoralists thorough its Rural Entrepreneur Access Project (REAP). REAP is a poverty graduation project that entails evidence-based sequenced interventions for a period of 16 to 24 months. It is similar to the BRAC Ultra-Poor graduation initiative, which has been shown in peer-reviewed literature to have significant short- and long-term benefits (Bandiera et al. (2017), Bannerjee et al. (2021), Balboni et. al (2022)). Eligible women are put into groups of three and are given a seed capital grant of $200 to launch an enterprise. If the businesses are performing as planned, an additional $100 is provided six months later. Upon launch of the enterprise group, the women are assigned a trained mentor for two years. The role of the mentor is to develop women's entrepreneurial skills, including basic numeracy and literacy skills. After six months women are introduced to savings groups whose members meet monthly to deposit, withdraw, and borrow money. Participants are also equipped with mobile phones to enable access to M-Pesa (mobile money) services.

The BOMA Project reports that on average the participants increase income by 29% and savings by 1400%. Most of the women's assets are concentrated in small ruminants (goats and sheep), and 80% of participants are still in business five years after they exit the program. Third-party academic evaluations are currently being conducted to validate these positive impacts.

BOMA REAP was started in Kenya and has expanded to Uganda, South Sudan, Chad, Ethiopia, and Burkina Faso. Further, REAP is expecting to start working in Nigeria, Niger, Senegal, Mali, Sudan, and Somalia.

Index-Based Livestock Insurance

ILRI created an Index-Based Livestock Insurance (IBLI) program for pastoralists in northern Kenya in 2009 to reduce the negative impact of droughts on pastoralist livelihoods (Chantarat et al., 2009). From the beginning, the program was centered around livestock, which is traditionally considered a male asset. However, droughts affect women's assets as well, directly when they are held in the form of livestock and indirectly when losses to men's herds lead to pressure for women to liquidate assets they have and empty their savings accounts to pay for household expenses.

Based on the observation that women face significant drought risk but often do not own or control decisions around livestock, Hobbs (2022) used a lab-in-the-field experiment to test demand for a hypothetical index-based drought insurance product focused on covering household consumption costs during droughts. The focus on consumption was motivated by the observation that women who have assets and savings are often under pressure to liquidate their assets during droughts, and insurance has the potential to reduce that pressure. The lab-in-the-field experiment showed that this new type of insurance was more popular among women than traditional livestock insurance, and a real-world follow-up currently in progress has shown that the same holds true outside the lab.

One study explores determinants of IBLI demand that may vary by gender, using administrative and household-level panel data from southern Ethiopia informed by a series of qualitative interviews. Building on previous empirical findings, the researchers posit that risk aversion, informal insurance, product education and female-held assets are particularly relevant to women's demand for IBLI. However, the study does not find a robust gender difference in overall demand for IBLI, nor gender-differentiated demand along the four hypothesized dimensions. They did find qualitative evidence of gender influencing IBLI purchase through means not captured in the econometric model, which may indicate women's vulnerability to pressure by sales agents (Bageant and Barrett, 2017).

IFPRI: Butana Integrated Rural Development Project (BIRDP), Sudan

The overall goal of BIRDP was to improve the livelihoods and resilience to drought of the poor rural households living in the Butana area. Its development objectives were: (a) establishing a coherent and cost-effective governance framework that ensures regulated access to land and water resources of the Butana; (b) improving the access and bargaining position of women and men in the marketing of livestock; and (c) developing the capacity of community-based organizations to engage in environmentally sound, socially and gender-equitable development initiatives, and management of natural resources. The main beneficiaries of BIRDP/ICSP were smallholder agropastoralists in the sand dune zone and clay plains, the smallholders in the irrigated

sector, and the smallholder transhumant households. All categories included rural women and youth.

BIRDP responded to the challenges and constraints faced by the target group through: (a) improved water accessibility and range-carrying capacity; (b) improved extension services for livestock and crop husbandry; (c) training on literacy, nutrition, health, and Income Generating Activities (IGA) for women and youth; (d) access to markets through rural infrastructure (roads and crossings and village market places) for livestock and agricultural products; (e) access to knowledge, market information, and rural finance; and (f) empowerment of community-based organizations (CBOs).

The project implementation was largely driven by heavy consultative processes, promotion of community networks, and using young people for community mobilization. In addition, the introduction of Guar as a drought-tolerant fodder plant was highly appreciated by the local herder communities for its suitability to the local environmental conditions.

At the onset of the project, in relatively conservative rural Butana, involving women was complex as they would not be allowed to leave their house, would be too busy with fetching water, were not interested or were unused to participating in any public activity, and men would refuse to allocate land for women's irrigated gardens. Village women now participate in meetings far away from their homes, express themselves confidently, take leadership positions in the Village Development Committee and Networks, and are economically empowered. Men appreciate the newfound empowerment of women and their enhanced role in decision-making at home and outside. The prerequisite set at Mid-Term "to ensure that women have access to water" was successful simply because women save a lot of time when there is a close source of water. Through the project, women have expanded their access to and control over productive assets – savings, common land, knowledge and technologies related to fodder storage, home gardens, water and range management. Women have constituted 64% of beneficiaries in the extension and training programs so far, and 99% of village savings group (VSG) membership. With credit from VSGs, women run petty trade in bakery, vegetables, hay bales, goat milk cheese, etc. Source: IFAD (2019) Butana Integrated Rural Development Project, Supervision report.

World Bank: Regional Sahel Pastoralism Support Project (Projet Régional d'Appui au Pastoralisme au Sahel-PRAPS)

The main beneficiaries of PRAPS I were pastoralists and agropastoralists in the six participating countries (Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal). Specific trans-boundary geographic areas and transhumance axes were prioritized in each of these six countries. The project was expected to directly benefit 2,070,000 people whose livelihoods relied mainly on pastoral and agropastoral activities. Target groups included women and youth. Secondary beneficiaries included service providers (both public and private), as well as national and regional institutions.

Project components included:

1. **Animal Health Improvement.** PRAPS supported the National Veterinary Services (NVSs), as well as conducted surveillance and control campaigns for major diseases affecting large and small ruminants.
2. **Natural Resource Management (NRM) Enhancement.** Enhanced pastoral and agropastoral communities' sustainable management of and secure access to natural resources, with a focus on water and rangeland resources.
3. **Market Access Facilitation**. Increased pastoralists' access to competitive, inclusive markets and increased trade in pastoral products (especially live animals).
4. **Pastoral Crisis Management.** Improved crisis preparedness, prevention, and response at the national and regional levels.
5. **Project Management.** Training courses and financial assistance were focused on both women and men.

The project conducted surveys of households to identify the economic activities that women and youth wanted to develop and the skills needed to take up those activities. The project targets young people and women and supports them until they begin to produce high-quality products and become independent. Activities include leather and hide tanning, animal fattening operations, milk processing, and the manufacture of milk products—all income-generating activities that are rooted in the pastoral world but also respond to collective needs, like plumbing and electricity or the processing of agri-food products.

The project is being implemented by the Ministries of Livestock and Employment and Professional Training and is coordinated by the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS). PRAPS directly supports more than two million people in six countries through parallel activities that aim to protect natural

resources, promote animal health, and facilitate the marketing of livestock. It has provided 517 skills-training courses for people living in rural areas and has provided equipment and seed capital to more than 20,000 individuals, 88% of whom are women.

PRAPS-2 (Projet regional d'appui au pastoralisme au Sahel-Phase 2)

PRAPS-2 will pursue investments to establish more robust animal health systems, increase access and governance of natural resources (including new grazing areas and more water infrastructure), support pastoralists' peaceful mobility along the local and cross-border mobility routes, and increase income. It will also support national and regional institutions as well as stakeholders' capacity to govern the sector. PRAPS-2 will improve pastoral livestock value chains, facilitate livestock trade, support regional market integration, and will further fill gaps in strategic market infrastructure along regional trade corridors. It is estimated that the project's activities will directly benefit about 13 million people (including youth), of which at least 30% are women.

PRAPS-2 will step up interventions towards vulnerable women and youth from pastoral households by increasing their access to training, including functional, digital and financial literacy, as well as business skills. It will finance income-generating activities to support their self-employment initiatives and will improve access to social and civil registries, a strong demand of pastoralists' organizations in the Sahel region (World Bank, 2021).

The Laiterie du Berger factory (Senegal)

The Laiterie du Berger (LDB) factory in Senegal exemplifies both positive outcomes from an intervention and negative outcomes from unintended consequences. In 2005, nearly 90% of the milk consumed in Senegal was imported in powder form, whereas nearly four million people, mainly Fulani, traditionally live from livestock farming and could produce milk. The Laiterie du Berger factory started production in 2007 to offer products made from locally collected milk and help to improve the living conditions of breeders. La Laiterie du Berger contributes to developing a local dairy industry by obtaining supplies from local breeders and facilitating their access to various services. (supply of livestock feed, credit, etc.).

The funding for LDB came from the Bagoré Bathily family and Investisseurs & Partenaires pour le Développement , a private investment company whose mission is to finance and support Small and Medium Enterprises (SMEs) in Africa. In 2008, La Laiterie du Berger joined forces with danone communities, a socially responsible investment fund. La Laiterie du Berger benefits from skills support from the danone group, and La Laiterie du Berger benefits from the involvement as a shareholder of the Grameen Crédit Agricole Foundation and of PhiTrust Partenaires .

The LDB factory invested in developing the capacities of its own staff, collectors, and suppliers, which benefited from training on milking hygiene and dairy herd nutrition. They also received veterinary advice and learned how to protect areas for grazing and water wells from itinerant livestock to sustain their forage and water resources. To reach the women who are the traditional dairy livestock keepers, LDB first delivered trainings to men, who then allowed the trainers' access to the communities' women to replicate the training.

The LDB had to modify its accountancy and milk supply chain to accommodate the practices and customs of its local pastoralist suppliers. For example, in polygamous households, which are common, several wives produced milk under the same household supplier contract. However, each wife had access to and control over her own animals and did not want to pool the milk from her cows with the milk from the other wives' cows. So, the male heads of households who had signed the supply contract with the dairy asked for individual buckets for each of their wives. To accommodate these special requests from its suppliers, the LDB was issuing many individual buckets with a capacity of 10 liters to individual women producers within the same household, thus increasing its own transaction costs to process all these containers and making the collectors travel with buckets containing only a few liters of milk. These inefficiencies were nonetheless judged a prerequisite to develop their suppliers' trust in the LDB and encourage sales of milk.

However, a cautionary note about unintended consequences. While the LDB raw milk supply chain in the northern Senegal model allowed the dairy to increase its number of pastoralist suppliers, and the quantity and quality of the milk they sold to the processing plant, 15% of LDB suppliers report a fall in market sales, and LDB suppliers may be more cash-strapped than they used to be when they marketed some milk surplus on the informal market. In the traditional pastoral cattle production system of the Ferlo, only 0.5% of milk produced was sold because of the lack of viable markets (Wane et al., 2009). The LDB changed the milk-use habits for 75% of its suppliers. Personal consumption was reduced for 51% of suppliers during the entire year and for 33% of households in the dry season to increase the share of milk that is marketed. In comparison, personal consumption remains widespread among non-suppliers, who continue to drink or process for their own use 74% of the milk they produce. Before the arrival of the LDB, herders sold their dairy products on the main road (informal market). Now the LDB is the sole outlet of the milk produced for 75% of the dairy's suppliers. Due to a lack of monetary resources, 77% of the LDB suppliers deprive themselves of the staple

foods they usually consume. Although 33% report that this situation rarely occurs, more than half (55%) experience this occasionally and 12% often. Another strategy to cope with the lack of money to buy food is to forego a meal. Nearly half (49%) of LDB suppliers interviewed had to reduce the number of meals per day during the four weeks prior to the surveys. The majority (64%) of the LDB's milk suppliers needed to reduce the quantity of food consumed. Of these, 13% encountered this situation often, whereas 57% did so occasionally and 30% rarely (Wayne et al., 2017).

Microenterprise Development, FARM-Africa, Pastoralist Development Project, Kenya

The Pastoralist Development Project (PDP) program fostered the formation of community-based organizations such as camel improvement groups (CIGs), women's groups, and youth groups among the livestock owners; later the work was extended to pastoralists who had no livestock, and the vulnerable poor. The project worked closely with 42 organized groups –13 CIGs, 13 women's groups, four youth groups and 12 adult functional literacy groups – each with about 20 to 40 members. The total membership was about 1,640, of which 40% were women. These groups were initially the entry point for delivering extension services and increasing the skills of the nomadic pastoralists. The groups undertook a range of activities on livestock production and enterprise development and increasingly provided services directly.

At first, the program provided group leadership training to enable the groups to run smoothly. However, program staff soon realized that illiteracy and the low level of capital hampered the growth of group enterprises. Limited access to financial capital and inadequate business management skills were major drawbacks, either to start up a business or to move from a microenterprise to larger enterprises. To address these constraints, the project introduced adult functional literacy classes, training participants in microenterprise management and financial support to promote locally suitable enterprises and to sustain group enterprises selling veterinary drugs or marketing livestock. The microfinance support operated under two major components: training and credit services.

Cowtribe (Ghana)

Cowtribe started in 2016 in northern Ghana to address constraints faced by women farmers in accessing veterinary services and vaccines. While not focused on pastoralists, the model could be successful with agropastoralists, where women remain with small animals while men migrate with cattle. However, given the digital divide, discussed above, the project design will need to consider the low incidence of phone ownership and internet use. The Cowtribe platform uses a cloud-based logistics management system to deliver vaccines to pastoralists when and where needed. Cowtribe collects data from its registered customers, then uses the information to aggregate orders from agro vets and finally uses the network of trained village agents to deliver vaccines to livestock keepers at their doorstep. Cowtribe also sends SMS alerts to users about disease outbreaks and offers practical advice. Studies showed an increase in vaccine usage from 18 per cent to 65 per cent among Cowtribe users, many of whom were women (Panel, 2020).

Taking note of the existing gender gaps in accessing vaccines, Cowtribe focused heavily on women-controlled livestock, especially poultry and small ruminants. Evidence had shown that despite vaccines being offered free by the government, women were not accessing them due to lack of awareness and limited mobility. In 2019, Cowtribe partnered with CARE Ghana, the International Livestock Research Institute (ILRI), and other local partners (District Departments of Agriculture) on the Women Rear Project (ILRI, 2019). This project will test two innovative approaches for vaccine delivery – one gender intentional and one gender transformative – by adapting CARE's Gender Transformative Farmer Field and Business School approach to facilitating women's sustained involvement in livestock vaccination. Both approaches address the practical barriers to access and the gender-based barriers, such as gender norms on decision-making and women's mobility. Preliminary studies from the project show that women's access to vaccines directly correlated to women's empowerment and was significantly represented by asset ownership and input into decisions (Omondi et al., 2022).

But project experience with microfinance showed that the demand for micro credit far exceeds the supply. To meet the increasing demand for substantial credit to micro entrepreneurs in pastoral areas, it is necessary to plan a special project suitable for these areas. Specifically designed credit models can provide a vital means of reaching remotely located pastoralists and building the capacity of communities to manage credit.

The lack of finance in pastoral areas affects both men and women, but differently, because of factors related to gender. For women, lack of collateral security is much more serious than it is for men, as women rarely own livestock or have other tangible resources. Therefore, microfinance for women is limited. To address this issue, PDP gave more individual credit without collateral to women. Four out of the six groups supported were women's groups. Another factor affecting women in enterprise development in the pastoral areas was their low level of literacy and numeracy, both of which are necessary for good enterprise performance. Enterprises run by literate, numerate persons tend to perform better as record-keeping and bookkeeping are easier. PDP supported adult functional literacy to improve the levels of literacy, particularly for women.

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