

The Role Of Gendered Livelihoods In Shaping Cattle Management In Smallholder Farming Households In Nusa Tenggara Barat

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ABSTRACT

This study explored how gender roles influenced the management of cattle farming in smallholder households in Nusa Tenggara Barat (NTB), Indonesia. In this setting, cattle were not only a key source of income but also held cultural value. However, traditional social norms still tended to limit women's involvement in cattle-related activities. Guided by Livelihoods Theory, this research examined how gendered roles shaped labor roles, access to resources, and decision-making within household cattle management. Using a qualitative case study approach, the study drew on semi-structured interviews with 25 men and women from cattle-farming households in NTB. The data were analyzed thematically to identify patterns in gender roles, control over resources, and access to support systems, which shaped decisions on cattle. The findings suggested that patriarchal norms continued to restrict women's access to productive assets, limiting their participation in cattle management. While cattle served as a form of household savings, women often relied on them for investment, especially when they lacked access to credit due to limited ownership of collateral. Meanwhile, men were often seen as more mobile and capable of managing cattle, particularly bulls, while women were more involved with small livestock such as poultry and goats. Women were also commonly excluded from livestock farmer groups, which served as key gateways to government livestock support and grants. This exclusion reinforced gender gaps in cattle ownership, economic opportunities, and access to public agricultural resources. The study highlighted the need for more inclusive approaches to support women's roles in cattle farming and rural livelihoods.

Keywords: *cattle farming, gender norms, livelihoods*

BACKGROUND

Gender roles are deeply embedded in local cultural norms, with men typically associated with public and productive responsibilities, while women are often confined to domestic spheres (Spangler & Christie, 2020). These normative expectations significantly shape the livelihood strategies adopted by rural households, including the organization of agricultural enterprises such as cattle farming (Agarwal, 2018; Doss et al., 2018). According to Livelihoods Theory, sustainable livelihoods are shaped by the interaction between people's assets, the formal or informal institutions, and the

strategies to make a living (Scoones, 2015). However, an important yet frequently overlooked dimension within this framework is the influence of social norms, particularly those related to gender.

Gender norms often determine how labor, resources, and decision-making authority are distributed between men and women. This leads to unequal access to opportunities, shaping not only individual behavior but also livelihood outcomes at the household and community levels (Petesch and Badstue, 2020). In rural contexts, where traditional norms remain dominant, women's involvement in livelihood activities may be constrained by expectations regarding appropriate gender behavior (Lawless et al., 2019). Markel et al. (2016) noted that gender norms refer to the distinct expectations placed on men and women, particularly regarding economic engagement, which often result in differential treatment and outcomes. These norms are often deeply rooted in social institutions that no one are not openly questioned or challenged, even by women themselves (Mersha & Laerhoven, 2016). Women are frequently expected to accept the constraints, including limitations on mobility, labor contributions, and access to productive resources. Several studies have illustrated how these norms create structural barriers for women in agriculture. For example, (Mersha & Laerhoven (2016) observed that in Ethiopia, female-headed households were often excluded from labor-sharing arrangements in farming due to cultural expectations that women should not engage in physically demanding tasks. Such exclusion directly impacts agricultural productivity and household resilience.

In patriarchal societies, gender norms also influence ownership and access to productive assets. Women often have limited access to land ownership, credits, and training opportunities, which in turn limits the types of income-generating activities they have (Kristjanson et al., 2014; Quisumbing & Baulch, 2013). In smallholder households, women tend to manage less valuable or productive assets than men, which restricts their access to formal credit. This is largely because collateral, such as land or livestock, is usually registered in men's names (Quisumbing & Baulch, 2013; Doss et al., 2018). As a result, women have fewer opportunities to expand their operations or engage with markets.

Institutional dynamics also reinforce gender disparities. Women are frequently excluded from rural development programs or marginalized within them due to societal norms that associate men with productive roles and women with reproductive and caregiving responsibilities (Markel, et al., 2016). These patterns of exclusion hinder women from participating fully in livestock value chains, acquiring new skills, or influencing agricultural decision-making processes.

In the Indonesian context, these issues are particularly relevant in Nusa Tenggara Barat (NTB) Province, one of the country's most prominent cattle-producing regions as the fifth biggest beef cattle producers (Badan Pusat Statistik, 2025). Cattle are a key livelihood asset for rural households in NTB, functioning both as a form of savings and a primary source of income (Yanuartati, 2021). However, according to research in NTB, only 3.6% woman farmers were empowered in livestock production including in cattle production compared to 33,34% men in Agriculture (Villano et al., 2024).

Previous studies have been conducted around gender roles, assets, institutions, and livelihood strategies around the world. Research on gendered livestock ownership focuses on Sub-Saharan Africa conducted by Lubungu and Birner (2021) identified that cultural norms and unequal access to resources significantly shape gender disparities in cattle ownership. Regarding development initiative, scholars such as Galie et al. (2015) and (Kabeer, 2020) emphasize the need to move beyond gender-neutral policy approaches and understand local meanings of ownership, which are deeply embedded in structural and institutional inequalities. In the Indonesian context, Wijers (2019) reveals how formal institutions and social norms within dairy cooperatives often reinforce gendered roles and

limit women's involvement in livestock development initiatives. Despite this, little research has examined gendered patterns of beef cattle ownership and management in smallholder farming systems in Indonesia, particularly in regions such as NTB Province.

The novelty of this research lies in its contribution to the livestock literature by addressing this gap. It explores how gendered livelihoods influence beef cattle management practices, including how women access cattle, ownership of livestock and other assets within households, and how institutional and other aspects play out in shaping decisions on cattle management. This localized and gender-sensitive focus offers new insights into cattle ownership that are largely missing from existing studies in the Southeast Asian context.

A second key novelty is the application of the Sustainable Livelihoods Framework (SLF) to this gendered analysis. Traditionally, the SLF has been used to understand how people combine assets and strategies to sustain their livelihoods (Chambers & Gordon, 1992; Matiwane, 2016; Yanuartati, 2023; Conway, 2022). However, critiques of the framework note its limitations in addressing broader structural, spatial, and ecological dynamics. In response, Natarajan et al. (2022) offers a reformulated SLF that better reflects 21st-century challenges, including climate change, globalization, and power inequalities. This study adopts Natarajan's updated framework, making a novel theoretical contribution by using it to examine how gender, social norms, and institutional dynamics intersect in rural cattle livelihoods. By integrating a gender lens with a structurally informed SLF, this research provides context-specific knowledge that can inform more inclusive and effective rural development and livestock policies.

RESEARCH METHODS

This study employed a qualitative research design using a case study approach to explore the livelihoods of small cattle farmers in NTB Province, Indonesia. NTB is one of the top five beef cattle-producing regions in the country (Badan Pusat Statistik, 2024), providing a relevant and rich context for investigating gendered cattle management. The qualitative case study method was chosen because it allows for an in-depth, contextualized understanding of complex social phenomena, such as the intersection of gender, livestock ownership, and household dynamics, which are difficult to capture through purely quantitative methods. This approach aligns with constructivist and interpretivist theoretical foundations, which emphasize understanding individuals' lived experiences and the meanings they assign to social realities (Glesne, 2016). A qualitative case study design enables the exploration of these embedded processes through rich, detailed data collected from informants. This also provides insights into how women navigate and negotiate cattle ownership in their households, which is particularly effective in uncovering context-specific meanings and practices related to resource access and gender roles as done by several scholars (Must & Hovorka, 2019; Keahey, 2018).

Data were collected through in-depth, semi-structured interviews with 25 male and female cattle farmers, focusing on gender roles within household livelihoods and cattle management practices. Prior to participation, all informants were informed about the purpose of the study and provided written consent. The data were analyzed using a within-case analysis method, which involved transcribing the interview recordings, interpreting the content, identifying emergent themes, and systematically documenting key findings for each informant (Miles & Saldana, 2014). The names of the informants in the results and discussions are pseudonymous.

RESULT AND DISCUSSION

Characteristics of NTB Province

NTB is a province in eastern Indonesia, located between Bali to the west and Nusa Tenggara Timur to the east. The province consisted of numerous islands, the largest of which were Lombok and Sumbawa. NTB spanned approximately 20,153.15 km², with Sumbawa accounting for 15,414.5 km² (76.49% of the province's total land area). While Sumbawa was geographically dominant, Lombok, despite its smaller size, served as the provincial capital and hosted the majority of NTB's population. This study focused on two case studies from Sumbawa Island. The region experienced a tropical climate marked by distinct wet (September to February) and dry (March to August) seasons, which significantly influenced agricultural and pastoral activities (Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2024)

In terms of livestock production, NTB was a significant contributor of cattle, buffaloes, goats, and other animals. In 2016, cattle and other livestock were exported to destinations such as Lombok, Java, East Kalimantan, and Papua. NTB's livestock sector was competitive at the national level, reflected in its higher cattle-to-population ratio, which is approximately 1:6, compared to the national average of 1:17, and a higher calving percentage of 66%, in contrast to the national average of 40.72%. Furthermore, NTB maintained a surplus in meat production, which played a vital role in supporting the region's economic vitality (Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2024)

The A Million Cattle Land (*Bumi Sejuta Sapi*, or BSS) Program, which aimed to enhance the cattle value chain, improve cattle quality, and ensure production self-sufficiency, was central to NTB's livestock development initiatives in an NTB regime in the past three periods. The program also focused on developing feed factories, increasing labor absorption, and strengthening the capacity of farmers (Direktorat Jenderal Peternakan dan Kesehatan Hewan, 2009). Alongside the PIJAR program, which sought to improve agricultural production and enhance smallholder well-being, these market-driven rural development strategies were key to improving the livelihoods of farmers and shaping the broader agricultural landscape in NTB.

Characteristics of the Research Informants

This case study described a smallholder farming community whose livelihoods revolved around crop and cattle farming. While the households varied in cultural background and land ownership history, they shared majority in religion, education levels, and household size. Although nuclear families were the norm, some households included extended members, such as parents and in-laws. Farming served as the primary source of livelihood, with cattle playing a significant role in both household economics and social life.

According to Table 1, the woman informants were more than man informants, with 15 out of 25 informants identifying as women. In terms the household status of woman informants, 7 informants were from man-headed households (MHH) and 8 informants were from women-headed households (WHH). In terms of ethnicity, the group was nearly evenly divided between Sasak (12 people) and Bima/Dompu (13), with no informants from other ethnic backgrounds.

The largest age group was those aged 36 to 50 years, totaling 14 individuals. This was followed by five informants aged 51 to 65, four aged 20 to 35, and two aged over 65. Most households consisted of 3 to 4 family members (20 households), while two households had 1 to 2 members, and three had more than five members.

Paddy fields were the most reported land type managed by the informants' households, with 15 households involved. House gardens were mentioned by 8 households, and plantations by 4.

Several households reported owning or managing more than one type of land. Most informants (16) managed their own land. A few leased lands in (3), one leased land out, and five had no farmland.

Table 1. Characteristics of the research informants

No	Characteritics	Number	Total
1.	Sex		25
	Male	10	
	Female	15	
2.	Ethnic group		25
	Sasak	12	
	Bima/Dompu	13	
	Others	0	
3.	Age		25
	20 – 35	4	
	>35-50	14	
	>50 – 65	5	
	> 65	2	
4.	Number of family members		25
	1-2	2	
	3-4	20	
	>5	3	
5.	Type of land		25
	House garden	8	
	Plantation	4	
	Paddy field	15	
6.	Type of Land management		25
	Own land	16	
	Lease in land	3	
	Lease out land	1	
	No farm land	5	
7.	Number of managed cattle		25
	Own cattle	23	
	Kadas-in (looking after others cattle; shared income)	4	
	Kadas-out (owned cattle under others care; shared income)	0	
	No longer have cattle	2	
8.	Other Source of income	19	25
	Crop farming (corn, rice, others)	6	
	Micro enterprise/business	3	
	none		

Source: Processed data (2025)

In terms of cattle ownership, there were 23 households reported that they owned cattle. Four households reported involvement in *kadas-in* (taking care of others' cattle for shared benefits), while none of the households reported practicing *kadas-out* (having others take care of others' cattle). There were two WHH were no longer kept cattle. As for income sources beyond livestock, 19 households

engaged in crop farming, 6 were involved in micro or small-scale businesses, and 3 reported no other sources of income.

Farmers operated within a vulnerability context shaped by a distinct wet and dry season. These seasons influenced the timing of crop planting and harvesting as well as when cattle could graze. The community also had to adapt to development trends, particularly government-led corn cultivation programs that intensified land use and limited access to grazing areas during the wet season. These shifts had a direct impact on how farmers managed cattle alongside other livelihood activities. The men would send their cattle far away to the main grazing land, while women could not do the same. This led to women's decision to limit the number of cattle.

A wide range of livelihood assets supported the farmers' household. Access to land was crucial for food production and forage, with most households either owning or accessing farmland through inheritance, leasing, or purchase. However, women tended to own less inherited assets than men because of the religious and cultural norms of inheritance.

Infrastructure such as veterinary services, irrigation systems, communication networks, and roads facilitated both crop and livestock farming. Mobile phones and private vehicles became vital tools for communication and transportation. Financially, farmers relied on both formal credit, such as bank loans, and informal sources, including relatives or moneylenders. Cattle, gold, poultry, and stored crops were often used as forms of savings, with cattle particularly reserved for major expenses like weddings or school fees.

Social capital played an important role in cooperative farming practices. This is illustrated as follows:

"Sometimes a lot of us go [to the common grazing land], sometimes just two or three. We take turns and usually stay overnight for one night. For example, when it's my turn to go today, when I get back, the others usually come over to my house to ask how the cows are doing. If we notice something like a cow's eyes watering, we immediately let the owner know so they can treat it right away." (Mr. Iska, a cattle farmer, MHH).

This illustrates how farmers leverage social capital to manage cattle grazing in remote areas. Through informal rotational systems and mutual visits, community members maintain regular oversight of livestock, share information, and support one another in responding to animal health concerns. Such practices reflect the role of social capital, wherein close relationships and trust among people facilitate cooperation and resource sharing will help them to improve livelihood performance (Irwan et.al., 2021).

The cattle farmers also had farmer associations, which provided access to grants, assistance, and information, although participation in these associations could be influenced by government control. These types of associations were usually dominated by male farmers due to patriarchal role of men in public affairs.

Human capital, particularly labor, was essential for farming activities. Labor shortages were common, particularly in households with migrant members or in woman-headed households. These woman-headed households faced distinct challenges due to limited access to labor, which directly affected their capacity to manage cattle. Furthermore, in this patriarchal society, gender norms limited women's involvement in public decision-making and restricted their roles in livestock management.

Both formal and informal institutions shaped cattle management practices. Formal institutions like Government policies in this study that supported corn production that led to restrictions on cattle grazing, altered land use and livestock practices. Other formal systems such as cattle registration, were in place, although the perceived importance of cattle identification cards varied locally. Informal institutions, such as the *kadas* system, played a key role, providing a shared cattle farming arrangement that allowed wealth accumulation for those without their own herds. Cultural traditions,

such as weddings, influenced cattle decisions, with cattle often used as dowries or slaughtered for celebrations. Social norms also governed cattle sales and delayed payment agreements. Gender roles continued to shape these interactions, with men typically handling cattle transactions and management, while women, despite contributing labor, had limited decision-making authority.

Cattle farmers in the study area employed a mix of crop and livestock farming strategies. Rice was a staple food crop, often grown on irrigated or rain-fed land, while corn was cultivated as a cash crop to supplement income. However, land constraints and water scarcity meant that not all farmers were able to grow rice, necessitating market purchases. Cattle served as a vital form of savings and investment for these farmers. Livestock management was typically undertaken by family members, with formal labor hiring being rare. The division of labor within households was often influenced by gender roles, with women typically responsible for smaller livestock or household tasks, while men oversaw cattle management and fieldwork.

The absence of land or capital necessitated the adoption of alternative livelihood activities among households. These households engaged in various income-generating pursuits, including agricultural labor, brickmaking, food vending, and small-scale entrepreneurship. Notably, women from poorer households frequently participated in petty trade or daily wage labor to supplement family income, whereas wealthier households tended to pursue more stable or entrepreneurial ventures. The timing and nature of these activities were often dictated by seasonal conditions and financial necessity, thereby conferring flexibility and resilience upon these households.

In short, this subsection provides a comprehensive description of the complex and interdependent characteristics of cattle farmers' livelihoods within the context of this research. This portrayal serves as a foundation for understanding how these complexities influence livelihood strategies, including decision-making processes related to cattle farming.

Gendered Inheritance and Asset Access

Patriarchal inheritance patterns in NTB significantly restricted women's access to productive assets, limiting their engagement in cattle farming and income generation. In many cases, sons inherited farmland and livestock, while daughters were allocated less productive assets, such as residential plots. As illustrated by Mrs. Maya Sukma's experience:

"... after the death of my parents, I received 2,5 are¹ yard.... Two of my brothers received 3,75 are each." (Mrs. Maya Sukma, WHH, line 64-73)

Despite this unequal distribution, she continued farming using land accessed through her late husband, supplemented her livelihood through labor, and managed to save through cattle ownership.

The ability to navigate livelihood constraints by utilizing pawned land, managing small crop plots, and working as a laborer reflected adaptive strategies often employed by women under restricted resource conditions. These diversified efforts not only provided subsistence but also allowed her to accumulate livestock, reinforcing long-term household security. This pattern aligns with Doss et al. (2018), who argued that women, due to restricted land access, frequently turned to diversified informal labor as both a survival and investment strategy.

¹ 1 are equals to 1000m²

Gender and Livelihood Diversification

Farm labor, especially during the wet season, served as a major income source for WHHs, who often lacked alternative employment.

"...I had a small shop... a very small one. My brother asked me to run it, but I couldn't rely on it for daily income. It's better for me to take on daily paid jobs, especially during the rainy season when there's a lot of work to be done on the farms. I'd rather work on farming tasks like planting rice. Followed by planting corn, and then weeding, followed by fertilizing, and harvesting. Sometimes we'd harvest peanuts first, then rice or corn, depending on which one needs to be done first. After that, we'd plant mung beans or soybeans. Then I'd be asked to pick cashew nuts or harvest tamarind fruits and clean them." (Mrs. Hartina, WHH, line 63-73).

Income from this work supported daily needs and was occasionally invested in farming inputs or informal savings such as poultry, gold, or cattle. Women also engaged in micro-enterprises, like home-based kiosks selling snacks and household items, allowing income generation compatible with domestic roles. These ventures, while vital, were constrained by limited financial capital, impeding women's ability to scale operations or invest significantly in cattle. Such economic activities highlight how gender norms restrict mobility and access to broader markets (Meinzen-Dick et al., 2017)

Gender Norms, Forage Access, Mobility Constraints, and Land Use Conflict

Gender norms such as restricted mobility played out in influencing women's access to forage and shaped the decision on cattle. Access to forage, particularly during the wet season when communal grazing areas were used for corn cultivation, which posed a significant challenge for cattle farmers to keep their herds in the village. To deal with the challenge, male farmers were able to transport their cattle to remote grazing areas, benefiting from mobility and logistical support through male-dominated networks. In contrast, this practice was socially sanctioned for women, who faced gender-based restrictions on mobility and participation in collective herding arrangements. An informant explained:

"...On the other hand, some others did not go to the grazing land because they were women (especially the women-headed households). In this society, it was socially unacceptable or inappropriate for women to travel large distances from their homes. This was a social norm related to gender and women who violated this norm were sanctioned..." (Mrs. Kartika, WHH, Line 100-104).

Such gendered restrictions on mobility further increased the labor burdens WHHs, who were often required to gather forage manually while simultaneously managing domestic responsibilities. These dynamics align with the findings of Spangler and Christie (2020), who emphasized that gendered divisions of labor and limited mobility not only shaped agricultural roles but also intensified women's participation in production in the absence of male household members engaged in migrant labor.

Land use conflicts also emerged, particularly when cattle encroached on cultivated fields. These disputes were typically addressed through *musyawarah* (community dialogue), a customary conflict resolution mechanism described by Mr. Syaiful Yusuf, which emphasized consensus-building and social cohesion over formal legal adjudication.:

“I contacted the cattle owners and asked them to pay for the damage caused by their cattle to the crop owners... However, we have musyawarah among us here so that both parties will be reconciled...” (Mr. Syaiful Yusuf, MHH, lines 200-210).

This approach emphasizes consensus-building and social cohesion over formal legal adjudication (Waridin, 2018). Although *musyawarah* was deemed effective for dispute resolution, women often hesitated to engage in conflict resolution, fearing social repercussions and negative public opinion about women being involved in disputes with others. They decided to scale back their cattle numbers to a size they could handle. This in line with Kanter (2017) that women in management often lack power due to being relegated to routine or behind-the-scenes roles, and those in less powerful positions may compensate by becoming overly protective of their work area.

Gendered Labor and Livestock Types

Findings from this study reveal that cultural norms in NTB Province, continue to shape a gendered division of labor in livestock management. Male farmers predominantly control economically valuable livestock such as cattle and bulls, while female farmers are largely responsible for managing small ruminants and poultry. This gendered labor pattern also extends to access to agricultural support: men had greater exposure to public spaces and participation in state-supported cattle programs, whereas women were often excluded or had only indirect access through male relatives. These findings align with previous research across multiple contexts, which shows that men typically manage high-value livestock due to cultural associations of masculinity with economic control, while women are relegated to small livestock perceived as less prestigious (Kristjanson et al., 2014; Njuki & Sanginga, 2013).

Small livestock provided women with flexible, short-term financial options, which was often sold to cover immediate needs like food or healthcare. However, this study found that such liquidity also limited women’s ability to build long-term wealth through ownership of cattle or land. This echoes findings from other studies showing that while poultry and small ruminants are critical to women’s livelihoods, they do not offer the same asset-building potential as large livestock, thus reinforcing structural gender inequalities (Njuki et al., 2011; Farnworth et al., 2015).

In addition, many female farmers expressed fear of male cattle, believing they could not handle the bulls' strength, particularly when the bulls were hungry. As one woman explained:

“[Actually] I wanted to [have male cattle again] but it needed a male laborer. Honestly, I was scared because they were so strong. They may hit you. I sold my male cattle beast some time ago although the price was low. I was scared because the bull stared at me. If I did not feed him soon, he would go berserk. But cows were calmer.” (Mrs. Dita Pujiani, WHH, lines 958–961)

This perception of physical risk, combined with limited access to male labor, discouraged women from managing male cattle, despite their higher economic value.

Moreover, women frequently lacked access to male-dominated social networks that enabled collective cattle transport, information exchange, and labor sharing. As Doss et al. (2018) noted, the systematic exclusion of women from agricultural institutions and decision-making processes diminished their resilience to economic and environmental shocks and curtailed their livelihood opportunities. An informant described how this exclusion affected her:

"The men have their own group to transport cattle during the corn growing season in the village. We are all men and impossible for women to join us because we travel far away to send the cattle.... We also have many meetings in the night." (Mr Maman, Cattle farmers' group leader, lines 102-105).

Furthermore, societal expectations that women prioritize caregiving responsibilities restricted their time and mobility. One interviewee stated:

"I never help collect cattle forage when my husband is busy because my family doesn't allow it." (Mrs. Sul, wife, lines 535–536).

"...because I believe women should focus on the household." (Mr. Sul, Mrs. Sul's husband, Cattle Farmers' case, line 536).

This domestic–public divide, which is well documented in gender and development literature (Markel et al., 2016), was a persistent structural barrier to women's full participation in cattle farming. This study contributes to livestock-specific literature by demonstrating how such gender norms shape labor roles, access to forage, and livestock type.

Institutional Access, Networks and Supports for Cattle Farming

Access to cattle-related development programs in the study area was largely mediated through male-dominated farmer groups. These groups-controlled participation in government cattle grant schemes, often limiting women's involvement to nominal inclusion. In practice, women, particularly WHHs, were typically excluded from decision-making processes and the material benefits associated with such programs. Even when permitted to attend meetings, women's roles were frequently relegated to serving refreshments, and they were rarely encouraged to speak or contribute substantively.

Grant proposal processes further reinforced this exclusion, often bypassing women's input entirely. As a result, many female farmers received minimal support from government programs that claimed to be gender-neutral but functioned within institutional structures that, in practice, discriminated based on gender. These dynamics mirrored global patterns, as highlighted by Meinzen-Dick et al. (2017), who emphasized the systemic exclusion of women from agricultural resources and services due to gender-blind institutional design.

Despite these constraints, some women demonstrated notable agency in managing livestock health and accessing support services. Mrs. Dita Pujiani, for example, actively engaged veterinary services to care for her herd:

"I always called the vet officer when I had problems with the cattle's health... I paid IDR 25 thousand for each shot. Once, the vet gave three shots... I paid IDR 75 thousand... I was grateful for their services... cattle health was very important... The officers came to the village regularly... I got their numbers from my friends." (Mrs. Dita Pujiani, Lines 726–744)

This account illustrates the importance of informal social networks in facilitating access to veterinary services and highlights that, when granted direct access to resources, women demonstrate active, responsible, and knowledgeable livestock management (Bain et al., 2018).

Women-Headed Households' Livelihood Constraints and Cattle Management

The findings of this study highlight the critical role that cattle played in the livelihoods of WHHs, particularly those who had become sole breadwinners due to widowhood, divorce, or

husbands' migration for income. With limited or irregular remittances, these women relied heavily on cattle as a form of savings and a buffer against financial shocks. As noted by an informant,

"I sold the cattle that are in my kadas and I shared the money with the owner. Even, I sold one of them when it was still young because I needed to pay off debt. I also once sold one to buy a motorcycle so my son could commute to school" (Mrs. Khadija, WHH, 289-290).

In this study, cattle were not only a source of economic security but also an integral part of long-term livelihood strategies, such as financing dowries or wedding ceremonies. To manage their cattle, some women entered *kadas* practices or involved their children in cattle care, underscoring the intergenerational importance of livestock. However, their ability to manage and grow cattle herds was constrained by structural and gendered barriers, including limited mobility to collect forage that led to forage shortage, labor constraints in the households, and caregiving responsibilities.

These findings are consistent with existing literature, which emphasizes the challenges women face in livestock production due to limited access to resources, social norms, and caregiving responsibilities (Hillenbrand et al., 2019; Kristjanson et al., 2014). The study highlights the need for policies and interventions that address these structural barriers and support women's livestock management, enabling them to scale their operations and improve their livelihoods.

CONCLUSION AND SUGGESTION

This study highlights the complex challenges faced by women in livestock management in NTB, particularly in cattle farming. Patriarchal inheritance patterns restrict women's access to productive assets, while gender norms limit their mobility and affect their access to resources. Despite their involvement in farm labor and micro-enterprises, women encounter significant constraints, including limited financial capital, which hinders their ability to scale up operations or invest in cattle. Cultural norms also reinforce a gendered division of labor, with men controlling high-value livestock and women managing smaller animals. Furthermore, men's greater mobility and dominant role in public affairs allow them to transport cattle over long distances and access broader grazing areas, creating opportunities to own more cattle. In contrast, women are expected to remain within the domestic sphere due to household responsibilities. Lastly, women's exclusion from male-dominated farmer groups limits their access to government support and grants, further exacerbating their marginalization. Addressing these structural barriers is essential for advancing women's empowerment and promoting a more equitable livestock production system through various targeted interventions. For example, expanding access to microcredit and financial services tailored for women in agriculture would help overcome capital constraints. Gender-sensitive training and extension services, delivered in formats and locations accessible to women, could strengthen their skills and confidence in cattle management. Encouraging the formation of or support for women-led farmer groups could also enhance access to resources and advocacy. These measures are essential for advancing women's empowerment and building a more inclusive and equitable livestock production system.

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