



An Assessment of Commercial development in Merino Sheep Farming Among small scale Farmers in Lesotho

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Abstract

Original Research Article

A crucial aspect of encouraging comprehensive economic and agricultural broadening for low-income communities is the commercialisation of emerging Merino sheep breeders. The Merino sheep industry significantly impacts Lesotho's GDP, yet declining agricultural production hampers rural economic development. Meanwhile, the Basotho migrant labour force has seen diminished income opportunities due to changing political dynamics, primarily in mining, leading to increased rural poverty. Low agricultural productivity in Lesotho is linked to widespread rural poverty and food insecurity.

Sheep, particularly Merinos, are crucial to the nation's livestock industry. Despite challenges in a competitive market, efficiency is vital for Merino sheep farming. However, market participation by new producers in Lesotho is limited, with a small number contributing to overall sales. Emerging farmers face environmental constraints, though the Merino market holds potential. Government development initiatives in Lesotho have not been impactful. The recent agricultural initiatives aimed at promoting Commercialised Merino sheep production has shown encouraging outcomes, yet there is insufficient empirical data on its effects on the livelihoods of producers in Lesotho.

To facilitate a successful transition to commercial Merino sheep farming in Lesotho, it is crucial to identify the key determinants and obstacles for emerging farmers. The primary themes affecting commercialisation include social status, income, culture, asset holding, education, agricultural support services, funding, resources, markets, information access, transaction costs, technology, policy environment, and infrastructure. A proposed support framework addresses these themes, although various factors may hinder the process of commercialisation.

The proposed support framework for fostering commercialization and inclusive agricultural growth in Lesotho benefits new Merino producers and includes policy, practice, and theoretical recommendations. To enhance market participation and promote inclusive economic and agricultural growth, existing research limitations must be addressed.

Keywords: Merino sheep, Commercialisation, small scale farmers, agricultural growth, antecedents, Resources-based theory, Innovation diffusion theory, constraints and determinants.

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Introduction and background to the study

The transition to commercial agriculture is vital for the economic development of low-income countries, including Lesotho, where the agricultural sector significantly contributes to GDP. However, emerging farmers face challenges due to the precarious nature of farming. Merino sheep are particularly important in Lesotho's livestock industry for their versatility.

They are prevalent in various agro-ecological zones of Lesotho, providing income, poverty alleviation, and food security (Rantšo, 2016a). Sheep are valued as a delicacy, reserved for special occasions such as weddings and funerals, and are used in sacrificial offerings to honour ancestors and spirits (Mvinjelwa et al., 2014).

Sheep are valuable for their primary products: meat, wool, leather, milk, and various by-products like dung. Their economic significance varies with production system, breed, rangeland type, and socio-economic factors. Merino sheep provide families not only the joy of raising them but also an additional income source.

In Lesotho's mountainous regions, sheep can thrive on coarse feed where other domestic animals cannot, presenting a profitable opportunity for new Merino farmers. Despite government support for the commercialisation of Merino sheep farming, there is a lack of recent studies aimed at developing programmes facilitating successful transitions in this context. This gap complicates the design and implementation of community-based development programmes that could aid emerging farmers.

Understanding the status of emerging Merino sheep farmers in Lesotho is pivotal, particularly regarding the constraints they face. Market-driven Merino sheep farming could sustainably enhance the socio-economic ranking of these resource-limited farmers. Research indicates that improved farming practices may lead to increased household income and overall betterment of rural households' socio-economic conditions, highlighting the importance of this study.

Literature

The current challenges presented by population growth, urbanisation, and climate change necessitate a transformation in agriculture, achievable through commercialisation. This approach aims to shift production practices from subsistence to market-orientated methods, contributing to development and economic growth in less developed nations. However, while commercialisation is vital for rural socio-economic advancement, Lesotho has lagged, primarily due to its reliance on marginal Merino sheep farmers. Thus, promoting Merino sheep farming could foster inclusive agricultural growth in the country.

The chapter discusses the welfare gains from market-orientated agricultural production, emphasising the benefits of specialisation that foster competitive advantages and large-scale production. It highlights how dynamic changes in technology and institutions arise from the exchange of ideas. The commercialisation of agriculture is promoted through adding value to commodities like wool and red meat, specifically for Merino sheep in Lesotho, which enhances agribusiness and market connections for farmers. The chapter also examines the circumstances of agricultural commercialisation, focusing on Merino sheep farmers, the wool production value chain in Lesotho, the rationale and significance of commercialising these farmers, critics' perspectives, and an assessment of observed literature.

Theoretical foundation of commercialisation agriculture

Lesotho, similar to other developing countries, has a predominantly rural population reliant on subsistence agriculture. Transitioning to market-orientated farming can enhance productivity, income, and employment, ultimately aiding in poverty alleviation. Research indicates that commercialised agriculture results in higher household incomes compared to subsistence farming. Studies confirm that this transition benefits emerging African farmers by promoting poverty alleviation (IFAD, 2014; Kingdom of Lesotho, 2014).

Commercialisation of agriculture is a complex, multifaceted issue within social sciences research, with various definitions and forms. According to Rantso (2016d), Mango et al. (2018), and Yin (2017), the lack of clarity in defining commercialisation can lead to misconceptions and hinder the translation of policy into practice. This study emphasises the output perspective of commercialisation, focusing on increased market surplus rather than input use.

Drivers of agricultural commercialisation

In recent years, agriculture in developing countries has experienced significant growth, becoming an economic growth, essential driver of development, and poverty alleviation. Literature indicates that welfare gains from market-orientated production arise not only from trade effects but also from larger-scale production opportunities. Tibesigwa & Visser and (2016) identify three scales of agricultural commercialisation drivers: global, country, and local/household levels, which will be further explored in subsequent sections.

Global-scale driving forces

Globalisation and trade liberalisation have significantly transformed the global economy, leading to expeditious growth in world trade, product internationalisation, and reduced transport and communication costs. These changes have also impacted the textile industry and are driven by international trade and increasing per capita income, altering the demand for food and agricultural products (IFAD, 2014; Kingdom of Lesotho, 2014).

Country-scale drivers

Economic development fosters structural transformation characterised by increased per capita income, labour migration from agriculture to urbanisation, manufacturing and services, and a decrease in agriculture's contribution to the economy (IFAD, 2014; Kingdom of Lesotho, 2014). Population growth and demographic changes amplify the demand for agricultural products, making agricultural growth and commercialisation essential to satisfy this demand. Consequently, farm production evolves to become more commercialised and specialised.

Local and household-scale drivers

Commercialisation at local and household levels is influenced by various factors, including agro-ecological conditions, market access, infrastructure, value chain integration, household resources and community, local commodity development, agricultural input access, and socio-cultural consumption preferences (IFAD, 2014; Kingdom of Lesotho, 2014). Additionally, demographic changes, urbanisation, technological advancements, market creation, and macroeconomic policies further impact these dynamics. Commercialisation is influenced by several driving forces, including extension services, access to credit, market information, technological advancement, productive land, and supportive infrastructure such as storage and processing facilities. (IFAD, 2014; Kingdom of Lesotho, 2014)

The concept of emerging farmers

Academics like MacLeod, McDonald, and Van Oudtshoorn (2008) highlight that a consistent definition of an emerging farmer remains elusive in the Lesotho agricultural context. Despite abundant literature, Scott (2016) notes significant confusion regarding the characterisation of emerging farmers. Key criteria often considered for classification include land size and production purpose.

The capacity of emerging farmers in the agricultural sub-sector

Agriculture serves as a crucial buffer against poverty for some households in Lesotho and as a wealth creation strategy for wealthier ones. The sector substantial contribution capacity in employment, human welfare, and political stability, contributing a midpoint of 7.0 per cent to Lesotho's GDP between 2010 and 2015 (IFAD, 2017). With high unemployment rates, development models highlight the rural population's potential as a growth engine. Research indicates that emerging farming operations can create employment and income, with competitive advantages in certain activities if supported by proactive policies, potentially leading to viable niches in the agricultural sector.

Review of the value chain for wool production in Lesotho

Lesotho Wool export is a primary commodity in Lesotho, significantly contributing to the country's GDP and accounting for 58.3% of agricultural exports. Annually, Lesotho produces approximately 4,380 tonnes of Merino-type greasy wool, which represents 0.2% of the global production as of 2011 (IFAD, 2014). The production is mainly managed by emerging farmers in rural areas. Recent increases in wool prices are driven by a rising demand for natural fibres, making wool a crucial income source for

rural households and providing employment opportunities, especially for herd boys.

Lesotho's Merino sheep population has surged by 94% since the national abattoir's closure in 2003, contrasting with a 16% drop from 1983/84 to 2003/04 (IFAD, 2017). This growth is driven by farmers responding to rising wool prices and limited commercial livestock sales options. The mountain region is home to the most Merino sheep, followed by the Senqu River valley, lowlands, and foothills. Wool production costs are heavily impacted by feeding expenses, which constitute 82-86% of total production costs.

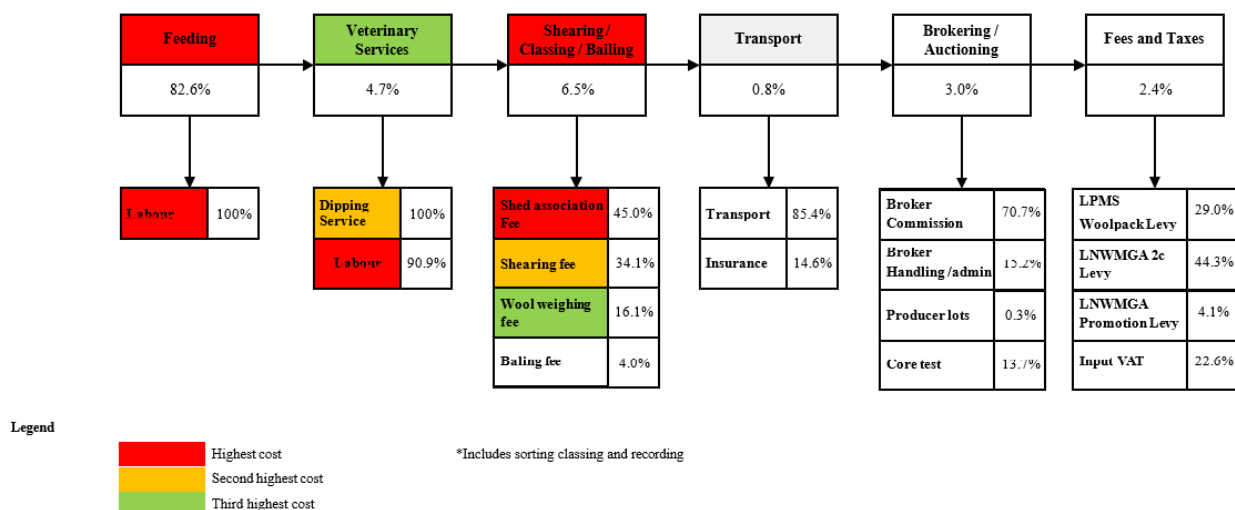


Figure 2.1: Value Chain for Wool Production in Lesotho: Traditional Farm

Source: (IFAD, 2014)

Local Merino sheep farmers struggle with profitability due to inadequate understanding, poor recordkeeping, and limited access to credit. Slow payments for wool sales, compounded by bottlenecks in the shearing-to-auction cycle, impact financial performance. Research indicates that start-up farms with high-yielding

breeds can generate higher annual cash flows (M40,8581 or US\$2,800.29) and profits (M817 or US\$55.99 per head) with proper investment in breeding and care. An enhanced value chain for wool production and marketing exists (IFAD, 2014; Kingdom of Lesotho, 2014).

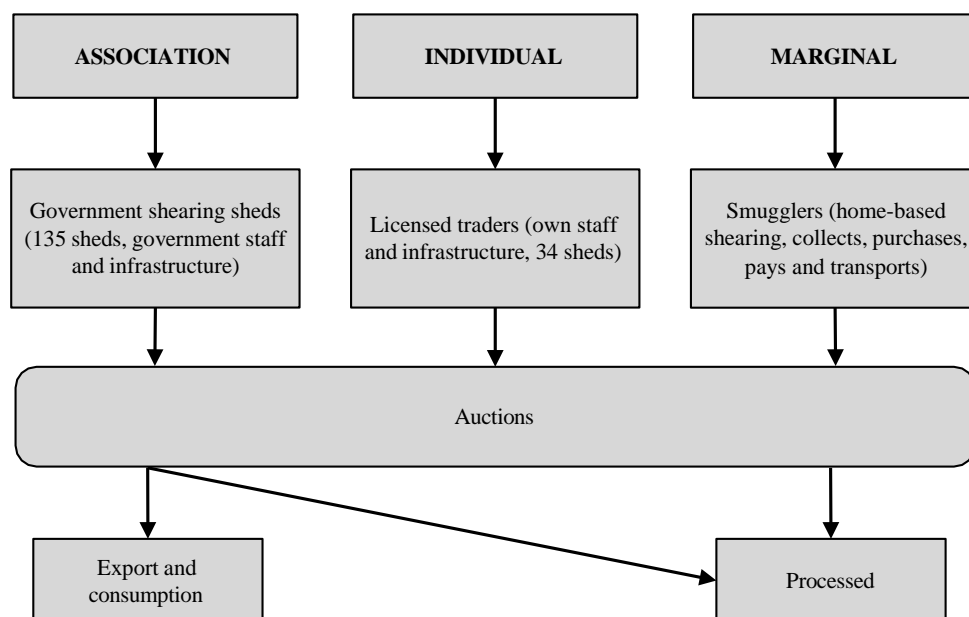


Figure 2.2: Lesotho wool and mohair value chain. Source: (Mokhethi, 2015)

Marketing Lesotho's wool involves various platforms connecting emanating Merino sheep farmers to the major auction markets in Port Elizabeth and Durban, South Africa, primarily managed by the marketing agent BKB. According to Mokhethi (2015) and IFAD (2017), BKB and a few smaller brokers work on commission, providing farmers with payments approximately six weeks after sale. BKB offers detailed analyses regarding wool quality, quantities, and auction outcomes, contributing to a competitive local market with several players, including small traders and itinerant hawkers, all of which are further discussed alongside the policy environment.

Government woolsheds

The woolsheds in Lesotho, overseen by the Department of Livestock Services (DoLSL) and operated by shearing associations, number around 130, with a supplemental of 22 planned for construction between late 2019 and late 2020 to enhance market opportunities for wool producers (Ogutu & Qaim, 2020). While government-owned, staffing is a mix of government and private, leading to variable farmer costs and quality control. Most woolsheds suffer from poor management, including limited

skills, misaligned incentives, and inadequate record-keeping.

Private traders

At the moment, over 40 private traders are licensed to buy wool from local Merino sheep farmers, a number reduced to lower than one-third since the government's involvement in marketing (IFAD, 2014; Kingdom of Lesotho, 2014). Privatised shearing sheds shear about one-third of the animals owned by one-third of the stock keepers, averaging 66 Merinos per flock, which is smaller compared to the government woolshacks. Private traders also acquire wool or mohair directly at the producers' premises.

Unofficial traders

Emerging Merino sheep farmers in Lesotho often sell their wool to smugglers due to various reasons, such as avoiding transportation costs and needing immediate cash. Smugglers fulfil roles once held by hawkers and provide a quick sales outlet, particularly beneficial for small flock owners in remote areas (IFAD, 2014; Kingdom of Lesotho, 2014). However, smuggling is linked to illegal activities like

purchasing wool from stolen animals and inherently carries risks such as unreliability and low payments. Current estimates suggest that less than 5 per cent of wool produced may be smuggled, but rising wool prices are likely increasing this activity, as smugglers respond to market conditions and official trade efficiency (IFAD, 2014; Kingdom of Lesotho, 2014).

Policy environment

The sub-sections below discussed the policy environment in Lesotho.

Government policy

Lesotho, as a signatory to the CAADP Compact, aims to boost agricultural productiveness by 6% annually and allocate 10% of its national budget to agriculture. The government is committed to subsidising agriculture until local farmers are sufficiently developed and food reserves are adequate (IFAD, 2014; Kingdom of Lesotho, 2014). Current efforts focus on sustainable commercialism, diversification, developing integrated value chains, and improving marketing infrastructure, alongside strengthening agricultural support institutions and risk management. The subsidy programme is expanding across all subsectors, with an emphasis on conservation agriculture to improve food security.

Trade policies

Trade policies in Lesotho serve as a vital strategy for enhancing global competitiveness and poverty reduction. The country focuses on overcoming trade and industrial constraints while aligning with various trade agreements, including those with the EU, South Africa, and SACU, which impacts tariff policies (IFAD, 2014; Kingdom of Lesotho, 2014). Membership in these agreements allows Lesotho to engage in regional and international markets, fostering trade diversification and expanded access to goods and services. As a member of the WTO and a part of the Least Developed Countries (LDC) bloc, Lesotho aims to promote trade liberalization and engage in multi-lateral trading systems, particularly advocating for landlocked LDCs seeking to improve their export capabilities.

Rationale for commercialising emerging Merino sheep farmers

In most LDCs, including Lesotho, where Merino sheep breeding is the primary source of income, agriculture remains a crucial sector for development (IFAD, 2014; Kingdom of Lesotho, 2014). According to Rantso (2016d) and Yin (2017), households in Lesotho with Merinos make more money than those without. Despite the fact that Merino sheep farming has ameliorate household livelihoods over the past 30 years, emerging farmers have found it challenging to participate in the commercialisation process due to unsuitable policies, limited access to technology, institutional barriers, poor infrastructure, and unfavourable connections to markets (Rantso, 2016d).

Household effects

It is anticipated that commercialised Merino sheep production will boost yields, increase household income from emerging farms, ameliorate food security, and strengthen farmers' ability to withstand shocks. According to Mango et al. (2018), the commercialisation of up-and-coming Merino sheep breeders directly and favourably impacts value chain and supply chain development. The economies of scale brought about by increasing supply and demand, which typically result in lower average costs per unit of operation, are responsible for the positive effect. Improved household wellbeing is anticipated to follow from increased income and savings brought about by commercialisation; for instance, higher household income has been connected to better living conditions, healthcare, and children's nutritional status (IFAD, 2017).

Socio-economic effects

The commercialisation of Merino sheep production can enhance employment in rural areas, drive growth in non-agricultural sectors, and mitigate the rural-urban income gap (IFAD, 2017). Cash-related production presents labour-intensive opportunities, absorbing excess labour and decreasing rural-urban migration. Additionally, processing activities like Merino shearing before sale create extra jobs for community members (IFAD, 2014, 2017).

The literature indicates that commercial Merino production can enhance rural non-farm economies by providing increased employment opportunities for non-agricultural households. Enhanced production and market participation positively affect stakeholders across value chain, including input suppliers, traders, transporters, processors, and financiers. This is attributed to economies of scale from rising demand and supply, which typically lower average operational costs (IFAD, 2014, 2017).

Environmental effects

Commercialised Merino production can lead to significant environmental issues if proper policies and legal frameworks are not implemented. Expanding grazing areas may cause severe land erosion (Yin, 2017; Ingabire et al., 2017). Agricultural intensification typically increases the use of agrochemicals, resulting in water degradation and land, biodiversity loss, and heightened health costs from chemical use. The overall environmental impact of agricultural commercialisation depends on the specific context of its implementation (Yin, 2017).

Significance of agricultural commercialisation for inclusive growth

The significance of inclusive economic growth is widely acknowledged, defined as a growth pattern that provides equal access to economic opportunities for all societal groups (Ochieng et al., 2016; Mango et al., 2018). Agricultural growth is emphasised as crucial for the economic development of low-income countries (Yin, 2017).

Commercialised Merino sheep farming significantly influences agricultural sector growth, enhancing farmer welfare, creating rural jobs, and reducing poverty. However, it is a complex process that can yield benefits for some while harming others. To ensure that agricultural commercialisation promotes inclusive growth, challenges such as volatile prices, technological adaptation, mortality risk, indebtedness, bureaucratic hurdles, and equitable contracts must be addressed (Murray et al., 2016; Yin, 2017; Mango et al., 2018). An enabling

environment is essential for emerging farmers to transition to profitable Merino sheep farming while minimising social and environmental costs and protecting vulnerable farmers.

Consequence of commercialising emerging Merino sheep farmers

The transition from low-productivity agriculture to high-productivity, market-orientated agriculture, termed "agricultural transformation" by IFAD (2014), highlights a shift that not only enhances productivity but also leads to economic diversification and reduced agricultural employment. According to Fredalette (2017), Yin (2017), and the Kingdom of Lesotho (2014), a paradox exists where increased market participation in Merino sheep farming requires the migration of farmers from agriculture, suggesting that the goals of retaining agricultural populations and stimulating transformation may conflict due to fixed costs associated with modern agricultural operations.

Market-orientated agricultural production, particularly the process of managing Merino sheep in Lesotho, is vital for enhancing the probabilities of emerging farmers at the base of the pyramid (BoP). Research indicates that this approach can significantly reduce rural poverty and food insecurity by increasing income, generating employment, and improving agricultural productivity (Creswell & Creswell, 2017; Yin, 2017). Enhanced rural livelihoods and nutritional status are also potential outcomes of this strategy, supporting the notion that market-orientated farming is crucial for economic development in rural areas.

Some researchers suggest that the outcomes of agricultural commercialisation are contingent upon the presence of efficient markets. When such markets exist, commercialisation can enhance food diversity and household stability (Kingdom of Lesotho, 2014; Yin, 2017), as well as improve allocative efficiency and food security at a macro level (Mango et al., 2018). Conversely, if markets are inefficient and transaction costs are high, emerging Merino

sheep farmers may struggle to benefit from commercialisation

Critics perspective of commercialising emerging Merino sheep farmers

According to Mango et al. (2018), there is increasing agreement that different socioeconomic groups are affected differently by emergent agricultural commercialisation in diverse institutional, policy, and socioeconomic contexts. Numerous academics, including Carletto, Corral, and Guelfi (2017); Mango et al. (2018), have acknowledged that the overall effects of commercialisation are not always favourable.

According to Yin (2017) and Njuki et al. (2018), many experts still mistakenly believe that commercial farming is the best way to achieve agricultural development. In this case, non-commercial agriculture is frequently associated with subsistence farming and is thought to have little connection to markets and, therefore, no possibilities for the future. Although commercialisation is frequently linked to failure, also is promoted as a comprehensive option for reversing de-agrarianisation (Ingabire et al. (2017). Ingabire et al. (2017) found evidence of the attempt to "modernise" agriculture in the former homelands area, with fairly poor results, based on observations in Ethiopia of the enormous food crop production plans funded by the government.

Household income risk and food insecurity

Emerging farmers producing non-traditional outputs like wool face several risks, including wool quality and poor lambing, weather shocks, and the volatility of wool market prices, leading to potential food insecurity. Compared to the steady food income and cash from semi-subsistence production, the lump-sum payments from cash or non-cash crops are quickly spent, often on non-food items. This issue is worsened by inadequate financial systems that hinder savings (Mango et al., 2018; Creswell & Creswell, 2017).

Employment and health effects

Commercialisation of emanating farmers, driven by labour-saving technologies like

mechanisation, may negatively impact agricultural employment. While it enhances connections between rural and urban populations, this may also elevate disease transmission rates to rural communities (Mango et al., 2018; Creswell & Creswell, 2017). Furthermore, disease prevalence adversely affects the active labour force, yet literature linking emerging agricultural commercialisation to disease transmission remains limited

Environmental and human risks

Commercialisation in intensive production systems increases the use of external inputs like pesticides and herbicides, along with inorganic fertilizers, which adversely impacts the environment and natural resources. Economic growth leads to higher labor costs and excessive agricultural chemical usage, raising environmental and human risks. Additionally, improper water resource management related to irrigation can cause significant issues such as waterlogging and salinity, as well as downstream water quality degradation from toxic agrochemicals (Creswell & Creswell (2017). However, Ingabire et al. (2017), were cautious in the overall impact of agricultural commercialisation on the environment may vary based on specific circumstances, as indicated by researchers.

Theoretical Framework

This research utilises a multidimensional approach to develop a conceptual framework that integrates related concepts to understand or predict specific events or research problems. According to Creswell & Creswell (2017), this framework arises through an inductive process, linking distinct concepts to illustrate broader relationships. Positioned in the social sciences, the study encompasses a limited scope and is informed by multiple concepts, including Resource Based Theory (RBT), Diffusion of Innovation (DOI), inclusive innovation, and inclusive growth, asserting that no single theory adequately explains the commercialisation process (Yin, 2017).The s t u d y enquiry – hence a t h e o r e t i c a l model

is suitable. The theoretical framework presented

in Figure 1.1 below.

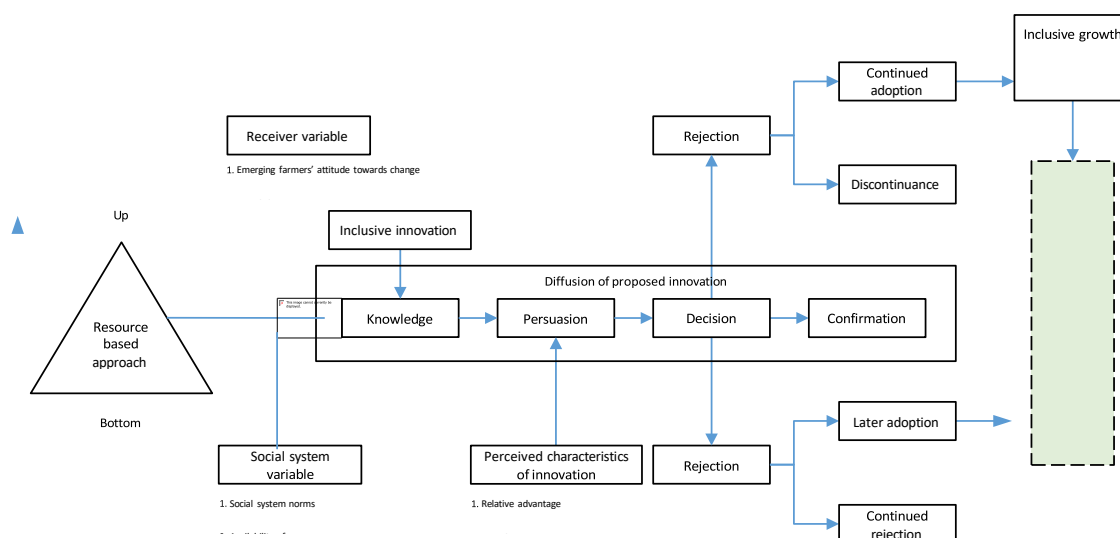


Figure 1.1: Theoretical framework

Source: Wetsi Nkholise, (2020)

The study aims to explore the main elements that contribute to the successful shift from sustenance to commercial Merino sheep farming among emerging farmers in a landlocked country, ultimately developing a methodological framework to support this transition within all-inclusive innovation context.

Research design and Methodology

The research focuses on identifying critical factors for the victorious transition to commercial Merino sheep farming among emerging farmers in a landlocked country, specifically Lesotho. It advocates using qualitative case studies as the preferred methodology to gain in-depth insights into the determinants of this transition. The approach aligns with the theoretical framework of qualitative research, which emphasises understanding the meanings constructed by individuals in their natural settings (Creswell & Creswell, 2017). Employing a critical realism paradigm and an exploratory case design, the study also incorporates a cross-sectional survey study design to guide data collection through questionnaires or structured interviews.

Design and methodological approach

In Yin (2017), the summary case study design, which incorporates multiple elements within cases, is deemed essential for fulfilling the necessities of a Doctor of Philosophy degree, with the research sample sourced from three districts in Lesotho. This design is preferred as it allows for a deeper exploration beyond merely identifying factors for successful transitions to commercial Merino sheep farming among emerging farmers, aiming instead to create a supportive programme for such transitions. IFAD (2017) points out that case studies are particularly effective when there is uncertainty regarding the information being sought. This sentiment is further echoed by Yin (2017), supporting the use of case study methodologies within the realism paradigm to address real-world problems effectively, thus reinforcing the choice of this methodology for the research.

The population of Lesotho is approximately 2,007,201, with over 80% residing in rural areas and around 70% relying on agriculture, of which 51% engage in subsistence farming. The research employed purposive sampling across

three districts— Qacha's Nek, Quthing and Mokhotlong—focusing on emerging Merino sheep farmers (Creswell & Creswell, 2017; Yin, 2017). The selection was based on geographic accessibility and the willingness of participants, following recommendations for manageable research areas. Aiming for a sample size that

balances breadth with the depth of qualitative analysis, the study utilised the Lesotho National Wool and Mohair Growers Association database to identify potential participants (Creswell and Creswell, 2017; Yin, 2017). A detailed table outlines the target sample and its selection rationale.

Table 1.1: Target sample and rationale for selection

Target sample	Sample size	Rationale for selection
Delegations from the LNWMGA	5	Entry to the database of emerging Merino sheep farmers was provided, along with information on their farming output and challenges faced.
Commercial Merino farming experts	5	Expert opinions were provided regarding pre-eminent practices in commercial Merino farming.
DoLSL delegations	7	This sample group provided insights into the challenges and dynamics facing emerging Merino farmers.
Department of Trade and Export Lesotho representatives	4	This sample group furnished statistics focused on the characteristics of wool produced and exported.
Local chiefs from the selected districts	8	They maintain databases for merino sheep flocks in their control areas.
Emerging Merino farmers	29	They contributed practical experiences to the research inquiry and supplied essential demographic information about the farmer sample group, including socio-economic attributes and farming practices.
Overall target sample	58	

Source: The author illustration

Three focus groups will be conducted in each district, comprising representatives from commercial Merino farming experts, LNWMGA, the Department of Livestock Services Lesotho (DoLSL), local chiefs, the Department of Trade and Export Lesotho (DoTEL), and three emerging Merino farmers per district.

Data Collection

To enhance the robustness of the study design, multiple data-collection methods were employed due to the lack of clear theoretical definitions of the phenomena under study. Initial data were gathered through an extensive review of secondary literature, which informed the development of an interview guide for primary

data collection (Fusch & Ness, 2015; Yin, 2017). Primary methods included observations, semi-structured interviews, and focus groups, resulting in rich data. Approximately fifty-two interviews were planned to achieve data saturation, with the interview schedule finalized

after thorough literature review. Eight-step process was used for data analysis, and the inclusion of multiple respondents within each case aimed to bolster the research's trustworthiness.

The structure of data collection during the study

This research took place in four phases, as outlined in Table 1.2.

Phase	Approach	Outcome
Phase 1	Review of secondary literature from the LNWMGA, the DoLSL, and the DoTEL.	Construction of a semi-structured interview guide.
Phase 2	Primary data collection from Qacha's Nek, Quthing, and Mokhotlong.	Comparability of results from Phases 1 and 2. The compilation of the interview guide was based on results from Phases 1 and 2.
Phase 3	Interview delegations from the LNWMGA, the DoTEL, and the DoLSL.	Comparability of results from Phases 1, 2, and 3 in order to compile an interview guide for focus groups and possible dialogue.
Phase 4	Focus groups comprised of delegations from the LNWMGA, the DoTEL, and the DoLSL, including emerging Merino sheep farmers from selected districts (Quthing, Qacha's Nek, Quthing, and Mokhotlong).	Construct a substructure based on the results from the four phases.

Source: Author's own illustration

In Phase 1, the researcher reviewed secondary information from LNWMGA, DoLSL, and DoTEL to create an interview guide aimed at exploring the economic viability of Merino sheep farming in Lesotho. Phase 2 involved semi-structured interviews with emerging

farmers to investigate factors affecting their transition to commercial farming and explore options for inclusive agricultural growth. Phase 3 utilised insights from these interviews to analyse livelihood pathways for farmers moving from subsistence to commercial operations.

Finally, Phase 4 compiled results to evolve a programme promoting successful transitions in the context of inclusive innovation. Data analysis was performed using Atlas.ti™ employing within-case and cross-case analysis to enhance the trustworthiness of the results (Creswell & Creswell, 2017).

Findings and Analysis

Presentation of research findings from the data

A network diagram exemplifying the relations among codes to codes to represent themes or families is shown in Figure 6.1 below.

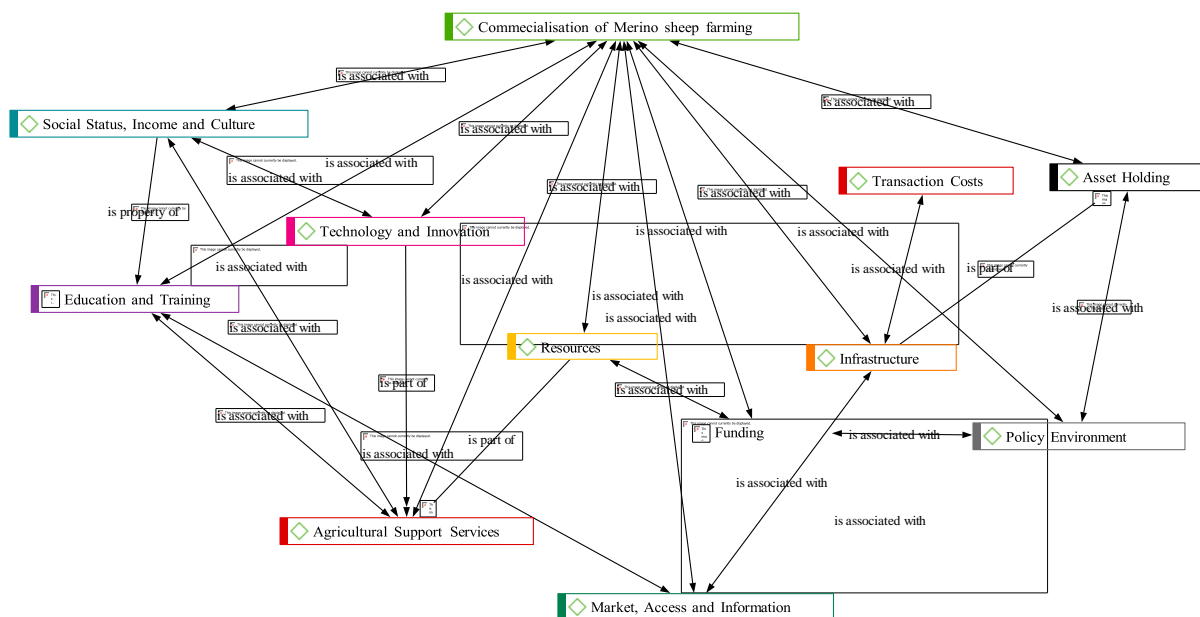


Figure 6.1: Relationship diagram of Commercialisation of Merino sheep network diagram

Source: Nkholise (2020)

The ATLAS.ti™ network diagrams allow for a holistic representation of qualitative data analysis, emphasising the relationships within data rather than isolated fragments. These diagrams aid in illustrating and comprehending themes relevant to the thesis on the commercialisation of merino sheep farming in Lesotho, aimed at promoting inclusive agricultural and rural economic growth for emanating farmers. Themes, codes, and categories derived from the data were developed to articulate meanings through thorough analysis and comparison, revealing emerging patterns. Direct quotations from transcripts support theme identification, sometimes appearing in multiple themes due to their relevance. The demographics of the sampled respondents are provided in the following section.

Demographics of the sampled participants

The discussion of the demographics of the sampled respondents includes age and gender, literacy and educational qualifications and marital status.

Age and Gender

The study analyses the demographics of Merino sheep farmers, highlighting that the mean age of respondents is crucial for tailoring support to elderly farmers, many of whom are illiterate. The sample consisted of 19 men and 5 women, primarily middle-aged (21-80 years). Youth participation in Merino farming is low, with the majority of younger respondents being male. Scholarly literature, including works by Njuki et al. (2015) and Tibesigwa and Visser (2016), emphasises that gender significantly impacts

agricultural development, noting that women in rural areas often have lower education levels. Effective commercialisation strategies for Merino farmers should therefore consider these gender dynamics.

Literacy and educational qualifications

Pant and Singh (2016) highlight that a farmer's education level, whether literate or not, influences their response to new agricultural technologies. Illiterate farmers may struggle to understand these innovations, making it crucial to assess their literacy to determine their ability to tackle agricultural issues and implement solutions. The respondents sampled all had primary education, while educational qualifications varied from primary to postgraduate levels. The literature indicates that literacy significantly aids farmers in transitioning to commercialised operations, particularly in Merino sheep farming, suggesting that emerging farmers can succeed in this sector when equipped with new technologies and innovations.

Marital status

In rural Lesotho, marital status significantly influences household problem management, particularly for married women (Gebremedhin,

Murray, Brychkova and Spillane, 2016; Tibesigwa and Visser, 2016). Research indicates that married women often lose decision-making power regarding farming and market access, as their husbands typically assume control over these decisions. For agricultural advisors, understanding the marital status of farmers is crucial, especially when engaging with female farmers. The analysed data shows that most respondents are married, with only a few being single or widowed. Further insights from semi-structured interviews will be discussed in subsequent sections.

Theme-1 Social status, income and culture

Merino sheep farming in Lesotho is vital for income, food provision, and fulfilling cultural needs, contributing to household livelihood, poverty alleviation, and food security. A study explored the motivations of Merino sheep farmers by asking them about their farming purposes, duration of farming, and reasons for choosing Merino over other livestock. The respondents provided varied perspectives that align with existing literature on the subject. Figure 6.2 below illustrates the relation diagram of sub-themes of the social status and culture theme that emerged during the focus group discussions and the interviews.

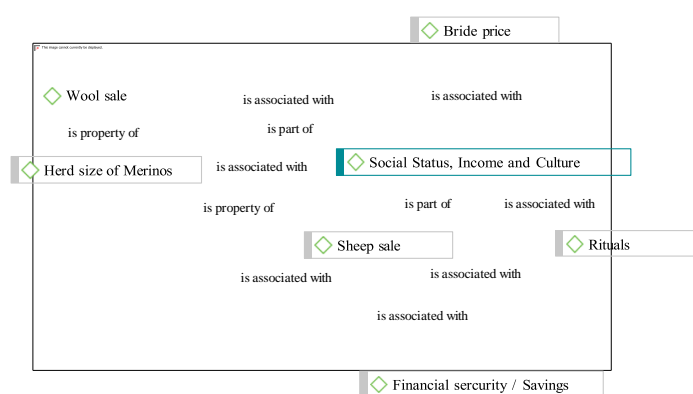


Figure 6.2: Relation network diagram of Social Status, Income and Culture theme

Source: Nkholise (2020)

Theme – 2: Asset Holding

Asset holding, enhanced by farming experience,

is crucial for Merino sheep farming in Lesotho, aiding emerging farmers in commercialisation

by reducing risks. Sufficient assets motivate farmers to participate in markets actively. Key questions posed to assess the asset holding of farmers included enquiries about herd size,

acquisition of sheep stock, and ownership of shearing facilities, as illustrated in a relationship diagram of sub-themes from interviews and discussions

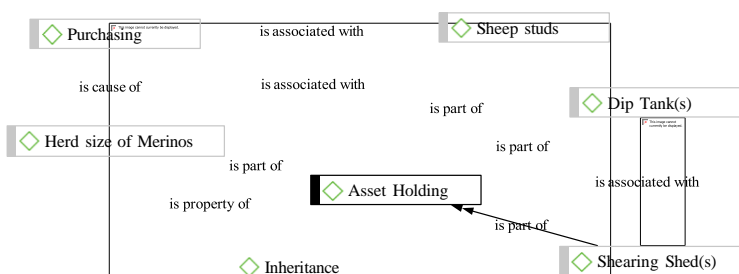


Figure 6.3: Relation network diagram of Asset Holding theme
Source: Nkholise (2020)

Theme – 3: Education and Training

The review highlights that successful farmers, as theorized by Khan and Damalas (2015) and Mehar (2016), often possess higher education or training in best practices. It emphasizes that education enhances natural skills and aids in informed decision-making. Supporting this, Kilelu et al. (2014) argue that education and

training should be integrated, with education acting as a key motivator. The review also mentions a survey question aimed at assessing the training and education levels of respondents in Merino sheep farming. Figure 6.4 below illustrates the relation diagram of sub-themes including the education and training theme, which emerged during the focus group discussions and the interviews.

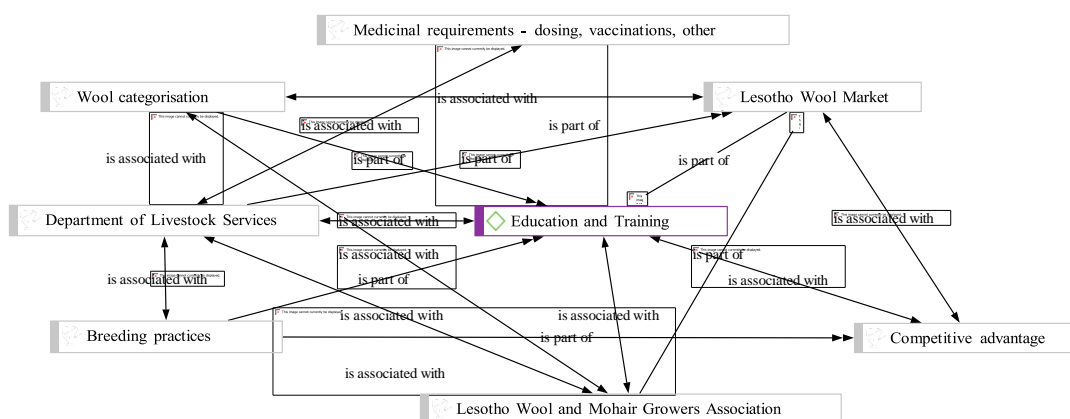


Figure 6.4: Relationship network diagram of Agricultural support services theme
Source: Nkholise (2020)

Consolidated analysis

The study utilised Resource-Based Theory (RBT) and a bottom-up approach to identify factors influencing the victorious transition to

commercialised Merino sheep farming. Findings indicated that the sampled group could shift from subsistence to commercialised operations by adopting best practices, including modern

technologies such as artificial insemination and hydroponic fodder systems. According to Ochieng et al. (2016), the study emphasised leveraging local resources and culture while highlighting challenges like limited access to credit and quality inputs, inadequate knowledge of best practices, and weak support systems. The development of a support framework aimed at enhancing commercialisation through education and innovation is discussed, acknowledging that literacy impacts farmers' receptiveness to new technologies.

Validity and truthfulness

This study employed various techniques at different research phases to ensure validity and truthfulness. Before data collection, the researcher engaged with key informants in the field, refining data collection instruments as a participant observer. During data collection and analysis, triangulation was employed, using findings from in-depth interviews alongside archival data and prolonged field exposure until saturation was achieved. Analysis involved comparing initial text and observation notes with interview results using ATLAS.ti™. Post-analysis, preliminary findings were further validated through focus group discussions, reinforcing the overall conclusions.

Conclusion

In this chapter, the results of a qualitative analysis are presented, featuring network diagrams from ATLAS.ti™ that illustrate the relationships among emergent themes from participant responses. The diagrams highlight significant associations between dominant themes and sub-themes, indicating that success in commercialization relies on addressing findings from the qualitative data analysis (QDA) and effectively sharing information with emerging farmers. The themes validate prior findings in the literature review and lay the groundwork for an uphold conceptual framework that addresses the primary research question. The chapter concludes with a summary of the study process conducted.

Implications of the study

Women in Lesotho are increasingly influential, particularly in the agricultural sector, yet they

face significant resource access disparities compared to men. The emerging Merino sheep industry presents an opportunity to address this gender gap, with a focus on commercializing female farmers. Evidence suggests that as commercialization increases, female farmers may lose decision-making power; however, this can be mitigated through gender-sensitive approaches. To achieve sustainable agricultural growth, it's crucial for women's voices to be heard in policy discussions, and for the government, private sector, and civil society to support women's inclusion in commercial farming endeavors.

Recommendations for further research

Research on commercialisation of Merino sheep farming in Lesotho aims to explore how to facilitate a successful transition to this model. It contributes to the discussion on whether such commercialisation can reduce poverty and enhance livelihoods for emerging farmers. Future studies are encouraged to quantitatively validate the proposed framework for commercialisation and its applicability to other livestock sectors in developing countries, assessing if commercialised Merino sheep yield the expected benefits.

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