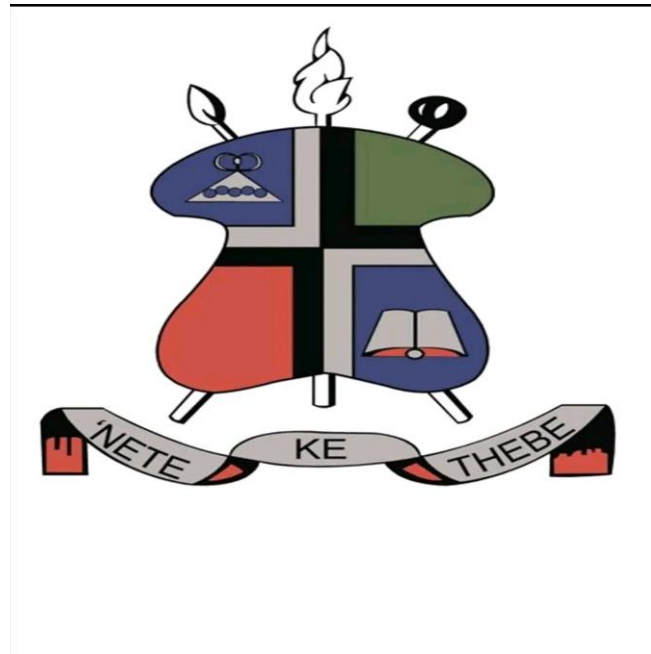


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DAIRY FARMING AS A STRATEGY FOR COMMUNITY DEVELOPMENT IN MAFETENG



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Abstract

Agricultural practices are one of the strategies that can enhance growth in every country in the world. Dairy farming as one of the branches in agriculture is not an exception. The aim of the study was to explore the extent to which dairy farming is a strategy for community development in Mafeteng, Lesotho. The study's specific objectives were to investigate why dairy farming was failing to improve the standard of living in the communities of Mafeteng; to examine challenges faced by dairy farmers in Mafeteng; to assess the viability of the Akofang Makaota Dairy Farmers Association in improving dairy farmers' standard of living in Mafeteng; and to suggest possible strategies to improve dairy farming for community development in Mafeteng. The study used both qualitative and quantitative research approaches. Fifty respondents were sampled through snowball sampling which enabled the researcher to find successive participants with ease. The questionnaire and unstructured interviews helped the researcher to receive data from the participants. One of the findings of this study was that AMDFA proved ineffective in raising dairy farmers' standard of living in Mafeteng. The results also showed that the dairy sector is not growing in Mafeteng. In addition, it is recommended that the Lesotho government should implement development policies that would not benefit not only dairy producers but the entire farm sector. It is also recommended that the customary laws that are governing farming should be amended. Again, dairy farmers should access funds from the banks and/or government to enhance the smooth running of their farms.

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CHAPTER ONE

THE PROBLEM AND ITS SETTING

1.0 Introduction

This chapter encompasses the study's background; statement of the problem; the purpose of the study; specific research objectives as well as research questions; hypothesis; significance of the study and the scope of the study.

1.1 Background

Dairy farming is a class of agriculture for long-term production of milk, which is processed either on the farm or at a dairy plant, either of which may be called dairy, for eventual sale of a dairy product. Hirst (2019), shows that dairy farming has a history that dates back to the early Neolithic era, around the seventeenth millennium BC in many regions of Europe and Africa. Milk production has a long history in several developing nations, and milk and its products have an important role in the diet (FAO 2019). According to Peden (2008), the production of milk is a home activity in about 150 million families around the world. Smallholders in most developing countries produce milk, and milk production contributes to household livelihoods, food security and nutrition. For small-scale farmers, milk offers relatively quick returns and is a significant source of income.

IDF (2021), shows that the dairy sector is crucial in helping to nourish the world. Dairy farming and processing are integral to national economies and individual livelihoods. It is a powerful part of the livelihoods of individuals, families and communities all over the world. One billion people rely on the dairy sector to support their livelihoods and to sustain communities in all corners of the world (Global Dairy Platform, 2018).

By 2004, dairy production in Africa was only expanding at a 3.1% annual rate, compared to a 4.0% annual increase in demand for milk and dairy products. Population growth drove demand increase, which in turn led to an increase in milk imports between 1990 and 2004. In Africa milk outputs increased by 1.1 percent from 2017, mainly contributed by growth in Kenya, South Africa and Morocco's production (World Dairy Industry, 2018).

According to Urassa and Raphael (2004), farmers must have knowledge that they can use to effectively integrate all available resources in order to produce milk that is of acceptable

quality before they can begin to produce milk, while maximizing profit. Due to modernization, technology is changing and more efficient methods of combining resources are evolving. African dairy farmers are in most cases of low educational background and need to acquire this knowledge through a simple and understandable approach.

In Lesotho, the dairy sector supports the development of methodologies for assessing the social and economic impact of the dairy farming and how it can help deliver outcomes within the Sustainable Development Goals (SDGs) framework. The SDGs provide a global stage to encourage the appropriate intake of nutrient-rich dairy foods and to present evidence-based research on how dairy products help specific populations such as children, young women and the elderly. There is no milk that comes from outside the country to be processed since Lesotho is now able to produce its own milk and process it (Global Dairy Platform, 2018; Mashale, 2020).

In Mafeteng most dairy farmers are under different associations that are under the umbrella association called Akofang Makaota Dairy Farmers Association. Nonetheless, there are those farmers that are not members of any association. Both association members and none association members market their milk at the local residents and to Mafeteng Milk Collection Centre. However farmers in Mafeteng have never made enough money to improve their livelihoods (World Bank, 2016).

1.2 Statement of the problem

Most people in Mafeteng are dairy farmers and also belong to Akofang Makaota Dairy Farmers Association with the intention of improving their livelihoods and develop their community. Nevertheless, people are still very poor and there are no signs of development taking place in the community. This state of affairs calls for a study to establish what could be a problem. This study therefore seeks to cover the gap.

1.3 Statement of purpose

The purpose of this study is to explore the extent to which dairy farming is a strategy for community development in Mafeteng.

1.4 Research objectives

Specific objectives for this study are as follows;

- to investigate why dairy farming is failing to improve the standard of living in the communities of Mafeteng;
- to examine challenges faced by dairy farmers in Mafeteng;
- to assess the viability of the Akofang Makaota Dairy Farmers Association in improving dairy farmers standard of living in Mafeteng; and
- to suggest possible strategies to improve dairy farming for community development in Mafeteng.

1.5 Research questions

- Why is dairy farming failing to improve the standard of living in the communities of Mafeteng?
- What challenges are faced by dairy farmers in Mafeteng?
- How viable is the Akofang Makaota Dairy Farmers Association in improving dairy farmers' standard of living in Mafeteng?
- How can dairy farming be improved for community development in Mafeteng?

1.6 Hypothesis

Null hypothesis: dairy farming is not a strategy for community development in Mafeteng.

Alternative hypothesis: dairy farming is a strategy for community development in Mafeteng.

1.7 Significance of the study

Literature on advanced inputs and technology is limited in Lesotho. Most farmers still use the primitive way of milking and storing milk, and due to the world and technology that is moving so fast, primitive way does not benefit Basotho. Conducting this study may help in adding to the gap in literature, so that the farmers can be more advanced.

Most people still do not see the importance of dairy farming because they are not engaged in farming; they analyse it at a distant and make their own conclusions that it is not beneficial. As a result, the study may also have significant impact on Mafeteng communities by enlightening them about the importance of dairy farming as well as going big on the market for the betterment of their communities.

Smallholder dairy farmers in Lesotho's rural areas lack adequate market information, contractual agreements, legal lobbying and are not easily receptive to change. These factors hinder farmers to participate in the formal market, as a result farmers prefer marketing strategies like selling from their farms. For this matter, dairy farmers have trouble accessing formal markets because of institutional factors, so conducting this study will make policy makers formulate policies that are in favor of all stakeholders in dairy farming.

1.8 Statement of assumption

- Dairy farmers are failing to contribute towards the development of their communities in Mafeteng.
- Dairy farmers attend workshops regularly for the improvement of their skills and knowledge.

1.9 Delimitations of the study

The aim of the study is to explore how dairy farming is a strategy for community development in Mafeteng district. The study will cover the areas of Matelile, Kolo, Ts'akholo, Thabana Morena and Likhoele as well as selected villages in Mafeteng town, in which dairy farmers association members and none members are found. The researcher wishes to interview 50 respondents on the period of two months that are characterized by men, women and youths aged from 18 years to 65 years.

1.10 Limitations of the study

Some of the areas in the study cannot be reached easily, and this will require the researcher to seek accommodation for few weeks while conducting the research. The researcher will definitely look for accommodation or hire a private car for everyday transportation.

The study seems to be expensive due to those areas that will require extra costs for accommodation or private car, but the researcher is willing to take all measures to make sure the study is a success regardless of the barriers.

1.11 Definition of terms

Dairy farming

According to Webb (2022), dairy farming is a branch of agriculture that encompasses the breeding, raising, and utilization of dairy animals, primarily cows, for the production of milk and the various dairy products processed from it for sale purposes.

This definition by Webb is most applicable for this study.

Community development

UN (2014) defines community development as a process where community members come together to take collective action and generate solutions to common problems. This definition provided by UN (2014) applies correctly to this study hence it will be used for the purposes of the study.

Strategy

Toolshero (n;d) defines strategy as a plan of action to achieve short, middle and long term desired goals; and this definition will be used for the purposes of this study.

1.12 Summary

This chapter discussed the problem and its setting; background to the study that includes the history of dairy farming; statement of the problem that indicates that although most people are dairy farmers, development in the community is not seen; the purpose of the study; what the study intends to achieve that is specific research objectives as well as research questions; hypothesis; significance of the study that states why it is important to conduct the study and the scope of the study. Next chapter discusses related literature to contextualize the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter discusses the importance of theory underpinning this study; as well as the review of related literature on concepts that are used in this study. Empirical evidence to what other scholars have on said research study is also provided. Empirical evidence is also provided for the insights of how the problem was perceived of this study.

2.1 Theoretical framework

This study is guided by empowerment theory. Ani (2018) explains that empowerment theory is a critical strategy to boost power and potential of community development. Empowerment is an active approach that can be used to improve life's quality at all levels; at the personal, organizational, and even communal levels; rather than just from a theoretical and philosophical perspective.

As explained by deVeer (2010), empowerment theory can be used in community development by including community members in organisational planning processes. Most of the time, farmers lack the resources and training necessary to maintain and expand their dairy farms. As a matter of fact, they need to be empowered as they develop their small dairy farming businesses and communities. When properly and collectively applied, this theory has the potential to alter the appearance of business centres and the ways in which powerful individuals interact with weaker individuals in the business world (Ledwith 2005).

Maple (2010) asserts that by applying this theory in groups, participants can become more conscious by reflecting critically on their emotions, actions, and thoughts. Groups can be effective because group members support one another by motivating them to confront the more difficult challenges in their lives. As a result using this theory in the associations that dairy farmers are members of will not only benefit the association and the individual farmers but the entire community. Coming up with collective solutions also benefits the communities in which the farmers come from because the solutions that they brainstormed together they will share with the other farmers that are not association members.

Community members must be capacitated through empowerment in order to raise their standard of living. Communities can actively take part in development when they are

empowered. Communities can speak out about socioeconomic challenges when they are empowered. (Kahika and Karyeija, 2017).

2.2 Conceptual Discussion

2.2.1 Community development

Community development is helping a community to empower itself by setting its own agenda, developing its own priorities for action, and strengthening the capacity of its citizens to address social, economic, environmental, and geographic issues (Spindel 2021:85). The community development approaches as Buye (2021) states are basic need approach, problem solving approach, participatory approach, asset-based approach, the power-conflict approach, welfare approach and rights-based approach. All of which are aimed to address imbalances in the community as well as bringing positive changes.

There are also community development workers that try to improve the situation in their local communities in order to continue community development. They attempt to actively engage communities in understanding the issues that influence their lives (AGCAS 2022). A community development worker's job is entirely integrated into the field in which they are interested; for instance if the community worker is interest with infrastructure development, his work as a community development worker focuses on improving infrastructure. According to CDYU (2021), a community development worker's role is to always think about and seek to improve the lives of people in their neighbourhood. In order to get funds that can help building the community, community development workers must go to community organizations and local businesses that are prepared to contribute in their cause and explain their intentions and project ideas. One example given by University of Boston (2021) is that working with the local government to secure funding for projects that will assist the local community with specific concerns. Other times, though, going to community groups and local businesses is required.

Zippia (n:d) and AGCAS editors (2022) both demonstrate that community builders support communities in need of change. Community developers work with struggling members of the community to encourage and support them. The developers offer opportunities for the beginning of social change as well as community guidance. They also build their local communities.

2.2.2 Community development and farming

Community development activities can boost farm work initiatives in nations that rely heavily on agriculture, such as educating farmers on best methods for raising crop yields, animal husbandry, and rearing. It may entail providing farmers with improved equipment, as well as training and enabling them to contribute to the economy and their society as a whole (Vienayoko 2020).

According to Jakes (2019), in the United States, the Farmworker Program was established in 2014 on the belief that everyone involved in the agriculture industry, including farmers/producers, farmworkers, and their families, is exposed to risk factors and stress; thus, an education program that recognizes and includes all of them is required.

Rainforestproject (2017), asserts that Organisation of Islamic cooperation (OIC) runs a community development initiative that encourages the formation of communities that serve as models of conservation-oriented living. This initiative aims to improve the livelihood of the local population by implementing sustainable agricultural practices while also lowering the environmental effect of unsustainable practices such as encroachment due to land expansion needs and the excessive use of chemical fertilizer.

Yalahabootleggingco (2023) demonstrates that supporting local farmers implies supporting the local economy, which is critical for any city. Money spent with local farmers and growers stays in the community and is reinvested in local businesses and services. It develops a local support network. This community development initiative is carried out by conducting trainings in order to improve their sustainable agriculture practices through agroforestry, organic farming, and permaculture trainings.

According to Deekor (2019), one of the challenges is that women rural farmers' participation in some community activities is limited due to socio-cultural practices; poor flow of information, timing and duration of community development activities, type of occupation of participants, cultural and social norms are some of the challenges faced by rural farmers in community development participation.

Family farming is currently a topic of considerable relevance for the sustainable development of rural communities and the promotion of a healthy lifestyle (Toader and Roman 2015). Propelled by Robson's farm, which was impacted by climate change Shargal (n.d.) worked in Zambia for five months (2019-2020) as part of a community-wide evaluation and mapping

project aimed at creating and sustaining long-term, self-supporting collective farming in the Chanyanya region. The project offered villagers agency, a vested stake in the success of their work, by allowing them to lead the project and exert authority over all choices impacting the farm and the group's management. To increase participation, all community members were urged to speak up and engage in group meetings and activities. NSAC has collaborated with Congress, the US Department of Agriculture (USDA), and farmers and ranchers to develop, improve, and promote programs such as the Rural Micro-entrepreneurship Assistance Program. Every few years, as Congress prepares to reauthorize the federal farm bill, legislative is informed about decisions regarding rural development programs.

2.2.3 Strategies for community development within Mafeteng

There are strategies that are aimed at enhancing the development of the community. These strategies include among others ensuring to help implement activities in the Gender Equality (THP 2012). Other strategies include rural saving schemes and stokvels in which (1life 2020) asserts that members of the stokvel have a shared financial objective, such as saving for Christmas groceries, a wedding, buying real estate, or investing in the stock market. For instance, a group of young professionals might decide to pool their resources in a stokvel in order to buy rental homes.

Some of the initiatives that Mafeteng community in the area of Sekameng took to encourage community development were through the proposed Layers Enterprise Project and Vegetable Production under shade-net. According to UN (2021:18) layers project and vegetable production are established to provide the necessary job opportunities for the people in the area. Layers project also provides the means of income for the community, whilst increasing access to a necessary nutritive product such as eggs.

Dairy farming also acts as a strategy for community development as we see farmers engaging themselves in groups and associations such as Akofang Makaota Dairy Farmers Association. These, they do to improve their financial situation as well as overall welfare statuses. Also Morgan (n.d), suggests that dairy farming also supports the creation of a favourable macroeconomic environment and regional knowledge management collaboration through a smallholder dairy network.

2.2.4 Dairy farming

It is a class of agricultural, or animal husbandry, enterprise, for long-term production of milk, usually from dairy cows but also from goats, sheep and camels, which may be either processed on-site or transported to a dairy factory for processing and eventual retail sale (ATMA n.d). The dairy sector is very important in its contribution to the economies of the world. Even so, there are big variations in the production systems and productivity between the two. In the developed countries, the production is mostly by large scale enterprises with competitive management systems and high uptake of technology and big capital outlay while in the developing countries it is largely by small scale farmers with minimum management and technical skills, limited access to capital and low access information (Muriithi,Huka and Njati 2014)

Due to the population increase and consumption of milk tremendously increasing day by day, dairy farming in Botswana is growing fast. Smallholder dairy production is important in supporting rural livelihoods, for dairying generates income and contributes to food and nutrition security. Smallholder dairying contributes more than income to rural livelihoods. ((skymartbw.com), Chande et al., 2015, Banda et al. 2021).

Dairy farming in Lesotho as Rantlo (2020) views, milk is in great demand for consumption and processing in Lesotho's commercial agricultural economy, particularly in the formal economy. Additionally, the country has a large number of dairy farmers that are actively producing milk, but this demand is not being addressed because farmers continue to sell their products in the less lucrative and milk-demanding informal marketplaces. According to Statista (2023), the milk market in Lesotho consists of revenue, volume, average revenue per capita, price per unit, and sales channels. The market only includes consumption that is consumed at home; outside-of-home consumption is excluded. As farmers voluntarily market their milk with one buyer Lesotho Dairy Product (LDP), the milk marketing systems in Lesotho are less active. Additionally, the purchase does not publicize the goods it intends to purchase, which prevents it from gathering the necessary additional milk. The farmers can only sell their milk formally through LDP, where they can maintain a steady income.

2.2.5 Contribution of Dairy Farming to Sustainable Development Goals

Dairy farming has its importance in its contribution to the Sustainable Development Goals that were adopted in 2015 to help states better their economies. Dairy Industries (2019), states

that dairy farming helps people escape poverty. The majority of farmers are small and live in poor nations. Here, two or three cows owned by small family-run farms serve as the foundation for a steady income. Every day, the cows produce milk, some of which is sold to the nearby dairies. Milk sales revenue goes toward providing food for rural residents in underdeveloped nations (Danish Dairy Board n.d). Throughout the whole global supply chain, from cow care to finished goods at the supermarket's chilled counter, the dairy business ensures employment for a large number of people.

With a few cows, many rural communities in the third world can prevent hunger. Consequently, the family's usual source of food is the milk. Milk, cheese, and yogurt are dairy products that provide nutrients like calcium and protein that aid in human nutrition. Additionally, calcium, vitamin D, and potassium are all nutrients of concern in the diets of both adults and children over the age of two in the United States, and milk is the number one food source of all three (Brown 2019). According to (Danish Dairy Board n.d),the population of the world benefits from milk and its products in terms of health. Numerous nutrients are crucial for children's development as well as for the growth and maintenance of essential body parts like the bones, muscles, and brain.

Dairy farming also plays important role in gender equality because not only men but also women are also involved therein. Agriculture in general Mokati, Ncube and Bahta (2022) show that women contribute more in Lesotho (FAO.org) indicates that in rural communities- such as Lesotho, women have an important role in milk production, especially milking and feeding, and are also involved in the collection, processing and marketing of dairy products. As Danish Dairy Board shows the extra milk is also sold by the women at the nearby dairy or market. Women are able to purchase the most essential items for the family thanks to this money.

2.2.6 Dairy farming products and their importance

Small-scale dairy farmers can make more money from processing dairy products than from selling raw milk, and they have better access to local and metropolitan markets. The seasonal variations in milk supply can also be managed with the aid of milk processing. Whole communities can gain from the conversion of raw milk into processed milk and products since it creates jobs off-farm for milk collection, transportation, processing, and marketing.

The dairy product that is consumed, processed, and marketed the most is liquid milk. Pasteurized milk, skim milk, standardized milk, reconstituted milk, ultra-high-temperature (UHT) milk, and fortified milk are all examples of products that fall under the category of liquid milk (FAO.org).

Other milk products are frequently produced using fermented milks. They are produced by fermenting milk with the right microorganisms to get the correct level of acidity. Yogurt, koumiss, dahi, labneh, ergo, tarag, kurut, and kefir are examples of fermented foods (FAO.org).

Fatty milk products include butter and ghee. In many poor nations, traditional butter is made by churning sour whole milk. Butter is made by churning milk or cream. Ghee, which is produced by draining the water from butter, is particularly well-liked in South Asia (FAO.org). As (healthline.com) views the importance of butter is a leavening agent in baking, which means it adds air to baked foods to make them light and fluffy. It also contributes to the rich, delicious flavour of baked items as well as their flaky, moist texture.

Some of the benefits of cheese are definitely health benefits as cheese is a great source of calcium, fat and protein. It can also be used to make cheeses sauce and be included in the variety of foods (Bhavya 2021). Milk protein (casein), which is extracted from the milk's whey, is coagulated to create cheese. There are hundreds of different types of cheese manufactured, many of which are regionally specific. However, wealthy nations are where the majority of cheese is made. Cheese can be soft, firm, semi-hard, ripened or unripened, or it might be hard.

2.2.7 Dairy Farming and Covid-19

In 2020, the coronavirus pandemic had an impact on every industry, from warehouses and meat processing plants to movie theatres and nail salons. Stang (2021) posits that many companies across the nations experienced disruptions in their supply chains, a reduction in demand for their goods and services, shortages of supplies and inputs, and closures that were ordered by the government.

Covid-19 has contributed both positively and negatively towards dairy farming. Hambardzumyan and Gevorgyan (2022) find changes in the customer behaviour, customers' purchasing patterns for milk and dairy products during the restricted period changed, and

their incentives were increased as a result most consumers move to purchase more retail cheese and butter products (Dansko 2021) .

Dairy sector has faced many challenges including Covid-19 pandemic. The pandemic has had as Wang and Han (2020) declare a significant impact on the dairy industries in China and the United States through a variety of mechanisms, including decreased farm gate milk prices, disruptions and challenges moving milk through the supply chain, a lack of workers, higher production costs, and a lack of operating capital. Other contributing factors include transportation issues brought on by widespread road closures, a major drop in holiday dairy product sales in China, and the closure of numerous dairy processors in the US as a result of the closure of schools, restaurants, and hotels.

In Lesotho the agricultural sector of which dairy is not exception, as LENAFU (2020) claims covid-19 impacted negatively given that not only extension support services as well as markets for agricultural commodities were affected but also some changes on normal agriculture protocols.

2.2.8 Challenges of dairy industry

Dairy sector is faced with some setbacks all around the globe. Canada is one country that is engaged in dairy farming. The diversity and high quality of Canadian milk and dairy products are recognized around the world in addition to their excellence (AAFC n.d.). Dairy production is undoubtedly significant to Canada in this regard, but as Edwards (2018) notes, Canadian producers expected losses of more than \$1 billion and are seeking compensation. The need to adjust to shifting societal needs is a concern for the Canadian dairy business (Ritter, Mills, et al., 2020). Canada's dairy producers are having trouble coping with how the coronavirus has changed both their supply and demand. To maintain steady pricing and avoid an excess, dairy producers in Ontario, Canada, have advised farmers to get rid of their raw milk. Due to the closure of restaurants and other large consumers like schools as a result of COVID-19, demand has fallen dramatically (Anon 2020).

U.S is one of the biggest countries that have engaged massively into the production of milk and products. According to AAFC (n.d) US is producing more than Canada; however just like any other countries that face challenges in dairy industry, U.S is not an exception also. Elsevier (2018:n.p) points that U.S is faced with increasing population and “with increased population density comes increased urbanization, which has typically led to greater personal

income and greater demand for dairy production”. According to Baker (2018), the U.S. dairy industry lost between \$750000 and \$900000 in 2018 as a result of higher milk prices and production expenses. Farmers who are experiencing financial hardships may feel hopeless and depressed, which is perilous in an industry with the highest suicide rate in the nation.

Dairy production in New Zealand has significantly increased during the last 20 years. Due to this rise in intensity, more external inputs, specifically water; feed, and fertilizer, have been needed. Therefore, intensified dairy production has significant environmental externalities, or effects that are not directly covered by the dairy farmer. The whole New Zealand population is left to deal with these externalities, both economically and environmentally (Foote, Joy and Death 2015)

The dairy sector contributes significantly to the New Zealand economy, accounting for 7% of GDP. The lack of affordable, highly nutritious feed for cows with high genetic merit for milk yield, the poorer reproductive ability of this high merit Holstein–Friesian cows, the quantity and skill of farm labour, and the environmental effects of intensive dairy farming are the major issues facing the industry today (Clark, Caradus et al 2007).

Like in any other country Ethiopia which is in Sub-Saharan Africa is faced with many challenges regarding dairy farming. Ethiopia is believed to be one of the countries that produce more milk and is ranked high internationally. The study that is conducted by Didanna, Wossen and Berhanu (2019) shows that decreasing order, lack of concentrate feed and water, lack of sustainable breeding and milk marketing, dairy animal health, and waste disposal are the most problems dairy producers faced in Ethiopia.

Mpo (2018), postulates that the fifth-largest agricultural sector in South Africa is the dairy business, which supports thousands of small- and large-scale farmers nationwide with a sustainable means of subsistence. Although dairy industry ranks that high in South Africa Mpo (2018) declares that nearly every small-scale dairy farmer that someone encounters is irritated by how challenging it is to obtain financing for his operation. A large sum of money is required to purchase or lease land in a suitable location. The sector is greatly impacted by the inconsistent availability of sophisticated electrical equipment used by many farmers to refrigerate milk as well as the associated expenditures. Small scale farmers lack the generators that the majority of dairy farmers use to maintain the dairy cooling system. They are the ones who are most in pain.

Among the challenges that Lesotho faces on dairy farming according to Tsenoli (2014) is because of the M3.68 per litre producer-price yoke, paid by Lesotho Dairy Products (LDP) to the unfortunate dairy farmers, dairy farmers have become marginalized, which accounts for the low milk production. This price does not permit them to be kinetic enough to produce more as they are not able to see profits with that less amount.

2.2.9 Dairy farming and urbanization

The population transfer from rural to urban regions, the concomitant decline in the number of people living in rural areas, and the methods in which societies adjust to this transition are all referred to as urbanization (National Library of Medicine 2014). Bengaluru, an Indian megacity, has a high demand for dairy products and is experiencing fast urbanization (Reichenbach 2021a). Some of this need is met by urban and peri-urban dairy producers. For dairy production to be sustainable, resource management must be effective. However, urbanization puts a strain on the availability of resources and, consequently, the feeding strategy of dairy farmers who live in urbanizing surroundings (Reichenbach 2021b). The demand for milk in the sub-Saharan Africa is rising as a result of population increase and urbanization, but the region's 65.9 million dairy cows' production capacity is not being completely utilized to fulfil this need (Roessler, Mpouam and Schlecht 2019).

According to World Bank (2010) Sub-Saharan Africa (SSA) is experiencing a significant increase in milk demand as a result of rapid population growth and urbanization, and most nations in the region have the capacity to supply this need by increasing local resources. Agribook (2023) denotes that in terms of farming practices and dairy product processing, South Africa's dairy industry compares favourably to the top dairy industries worldwide. Dairy farming is practiced all throughout South Africa, but it is most prevalent in the coastal provinces, with 85.4% of production coming from the Western Cape, KwaZulu-Natal, and the Eastern Cape (MPO, 2022). Coastal provinces are more congested with high population due to tourists and migrants that are hired in the farms. The demand for milk supply is high in other provinces especially Gauteng Province, since they are also flooded with people from all over South Africa and neighbouring countries.

2.2.10 Contribution of dairy goat into dairy industry

Although it is commonly believed that talking of dairy industry involves only dairy cows, dairy goats also play a vital role therein. The world's population consumes goat milk in about

65 percent of cases since it is so helpful. A superb source of energy-giving carbs, protein, healthy fats, and several vitamins and minerals necessary for good health, goat milk is a superior food.

Compared to other animal milk, goat milk is higher in protein. Compared to cow's milk, goat milk has higher calcium and protein. It also improves the body's ability to absorb a variety of nutrients from various foods and beverages, which increases the person's overall diet's effectiveness. (Cosgrove 2023). Moreover, Turkmen (2017) proves higher digestibility and anti-inflammatory effects are connected to the particular protein peptides in goat milk. Popescu (2013) specifically mentioned cow and buffalo milk, but also goat milk, which has excellent qualities due to its chemical makeup rich in numerous nutrients, is well accepted by people who are allergic to or sensitive to cow milk, has positive health effects, and is highly digestible. The only milk that comes near to human milk in terms of peptide composition is goat's milk. Tuckmen (2017), Verruck et al (2019) also emphasise that it is believed those who live in more demanding situations, those with allergies of their kinds, those who have limited access to animal foods, and those who have elevated protein needs, such as those with HIV/AIDS, should pay special attention to the additional protein in goat's milk as it will come as a great help to their health.

The vitamins A, E, B1, B2, and C, as well as the minerals calcium, iron, magnesium, phosphorus, zinc, potassium, and selenium, are all abundant in goat milk. According to research, several of these vitamins and minerals are more bioavailable in human milk than in other animal milks. (<https://www.foodforhischildren.org>)

Like any other milk, goat milk contains some fat. However, the fat in goat milk is significantly better suited to the human intestine. The fatty acid content of goat milk, which contains 30-35% short- and medium-chain fatty acids, has been linked to a variety of health benefits, including the potential to reduce inflammation, strengthen the immune system, promote growth, and fight disease, (<https://www.foodforhischildren.org>, Silanikove et al 2010).

Most people struggle with other types of milk because they contain lactose that is not good for their health. However, goat milk contains lactose as a carbohydrate, but it has a lower lactose level (Silanikove et al 2010), than other animal milks, making it simpler to digest for persons with lactose intolerance

Fresh goat milk can be consumed, but it can also be processed into cheese, butter, ice cream, yogurt, condensed milk, evaporated or powdered milk, kefir, and cajeta, among other things. Due to their versatility and tolerance to a variety of situations, goats are simple to grow and may be milked both manually and automatically. They are essential to the pastoral regions farmed in family households, as well as in smaller farms in emerging nations and more advanced and successful larger farms like those in Europe. Milk and dairy product demand is rising, which has boosted trade and production. Even though goat milk ranks third in the world after cow and buffalo milk production, it accounts for a larger portion of production and consumption in many nations, with only 5% of goat milk processed and marketed as cheese (Popescu 2013).

As is the case in Lesotho, while talking about milk it is always considered that of a cow. However Popescu (2013) gives clarity that goat milk production varies from one nation to the next, with the yield of emerging nations being lower than that of developed nations.

Unlike dairy cows that need extra care also in feeding, Joseph (2022) demonstrates that goats typically graze on fresh pasture, and goat milk has greater omega-3 content. As an emphasis, goats are preferable to cows for farming since they require less area and cost less to keep. Since they are unaffected by excessive cold or heat, goats thrive in almost any environment. The benefit of milch goats is that they can be kept for domestic reasons, frequently on less desirable grazing where cows cannot be kept profitably. (WorldAtlas 2017, Milch Goat Breeders' Society n.d).

Goat milk makes up 62% of Bangladesh's total milk production, according to FAO. In Bangladesh, goat milk is produced in excess of 2.5 million metric tons annually. Milk from cows and buffaloes makes up 32% and 1% of the total. One of the most common dairy goats in Bangladesh is the Black Bengal. If fed and cared for appropriately, Black Bengals are known to produce large quantities of milk. The milk obtained is mostly used for commercial purposes and to produce traditional dairy products in Bangladesh (WorldAtlas 2017).

The majority of Sudanese rural residents raise goats primarily for their milk and meat. 1.5 million gallons of goat milk are produced in Sudan each year. In Sudan, goat farming has flourished because, unlike cows, goats can live happily in a dry climate like Sudan's. The Nilotic goat and the desert goat are two of the goat species raised in Sudan. In Sudan, goat milk is primarily consumed locally (WorldAtlas, 2017).

The Food and Agricultural Organization of the United Nations reports that India is today the greatest milk producer in the world, with its production of goat milk contributing to this development. According to Bailey (2022), in 2019, The Science Agriculture revealed that India produced 5,400,000 tons of goat milk, followed by Bangladesh, which produced 2,750,000 tons. Goats provide around 65% of the dairy that is consumed globally. It is particularly well-liked in poorer nations because the animal is simpler and less expensive to care for than cattle. Although the goat is simpler to care for, its milk also provides underprivileged communities with the essential nutrition malnourished people need to thrive. The demand for goat milk has significantly expanded, according to Gaon Connection (n.d), due to its many health advantages and low cost in India.

The ideal goat breed for milk production must be chosen if someone wants to produce healthy soap and lotions or appetizing recipes that require a steady supply of goat's milk (Cosgrove, 2023). Goat milk is believed to produce excellent products that are hygienically good for people' skins and digestive system.

Goats come in a wide variety of breeds all throughout the world. They are entertaining to watch, but unless they are raised as intimate family pets rather than farm animals, they may become aggressive if people approach them too closely. It is simple to assume that all goats are the same, yet there are many diverse breeds that should be recognized as distinct individuals. Others are well known for their meat, while some are excellent milk producers. However, some are more recognized for being pets. The most popular goat breeds are listed here (Alpha Goats, n.d.).

Saanen, the most popular breed of dairy goat worldwide, is one of the four main milk goat breeds in South Africa. One male and one female brought from Germany in 1923 gave rise to the current-day saanen in South Africa (Milch Goat Breeders' Society n.d.). White with no markings, Saanen have a benefit over unwanted albinos in that they have black dots on their noses, eyelids, and ears. They require shade and do best in cooler climates. Saanens are docile and produce a lot of milk, making them ideal for commercial dairies (Louw, n.d.).

The oldest breed of dairy goat is the brown-colored Toggenburg, which was imported from Switzerland in the early 20th century. They prefer cooler climates and are poorly suited to tropical environments. According to Louw (n.d) and the Milch Goat Breeders' Society (n.d), the colour can range from fawn to dark chocolate with white markings resembling those of the British Alpine.

This British Alpine has a shiny coat and black and white markings. Between 1924 and 1936, nine animals—six females and three males—were brought from the UK. Additionally, they have excellent winter milking and a protracted lactation time. They favor mild temperatures and little humidity (Louw n.d.). These goats are able to have lengthy lactations that might occasionally persist for almost two years (Alphagoats n.d.).

Bunte German edelziege is a huge, sturdy goat that comes in several colors. It is a long-lived, fruitful animal with excellent balance and high disease resistance. It can withstand tough conditions and is recognized for its tasty milk (Louw n.d.).

Goat milk production is still insufficient in Lesotho. However (Africa Press 2023, The Post 2023), reveal of a farmer who earned a bachelor's degree in commerce with an accounting concentration but decided to go on a singular adventure: goat milk production, reveals that people still place more value on dairy cows than goats. The farmer wants to serve the entire Basotho nation, even though his product, fresh goat milk, is only available in a few locations across the nation

2.3. Empirical Evidence

Clay, Garnett and Lorimer (2019) took a study on dairy farming entitled Dairy Intensification: drivers, impacts and alternatives. The study focused on major temperate dairy producing regions of European Union (EU), North America (NA) and Australia and New Zealand (ANZ). In their study they examined the causes of and effects of dairy intensification in this research. In addition, they located four key issues related to dairy intensification in the literature: the environment, animal welfare, socioeconomic well-being, and human health. Then, in order to address these issues in a way that benefits everyone, they critically evaluated three frameworks: sustainable intensification, multi-functionality, and agro-ecology. They called for research and policy strategies that can more effectively take into consideration trade-offs and synergies among the many dairy impact characteristics. This study was undertaken from international community while mine is a local study that focuses not even in a country but a district.

The study on dairy farming, contribution of small scale dairy farming under zero-grazing in improving household welfare in Kayanga Ward, was conducted in 2010 by Lwelamira, Binamungu, and Njau. Their primary concern was assessing the role that small-scale dairy farming played in enhancing household welfare. Their study compared the annual income

from several businesses, including smallholder dairy farmers' rearing of dairy animals. My study is about enhancing the development of the community at large, and whereas their study was conducted in Tanzania my study is in Lesotho.

Swanepoel (2014) examined the economic role of the dairy industry, from dairy producers to dairy processors, and measured the linkages with allied industries in terms of output, value added, and employment contribution. The study was submitted to Colorado State University and was titled 'An analysis of the dairy industry: Regional impacts and rational price formation'. Due to the growing unpredictability of the revenue streams for dairy producers, he also looked at the contracts for the existence of logical pricing formulation. This study varies from mine because mine does not look at the price formation and the linkages between the dairy industry to government and the community at large.

Sunday Express (2013) indicates that the Lesotho National Dairy Board (LNDB) hired TABFIN Financial Services to conduct a study that would look into the possibilities for transforming the Lesotho Dairy Products (LDP) company into a financially viable and long-lasting business that would satisfactorily serve the interests of the nation's milk producers and consumers.

With the help of this assignment, TABFIN was able to investigate the operations of the LNDB, which serves as a regulator, as well as the LDP, a business that processes and distributes milk and milk products.

This was accomplished by reading through all pertinent literature, speaking with representatives from these two organizations' management and a wide range of stakeholders, including milk producers, processors, retailers, and relevant government officials. This study was done in 2013. There is a line between my study and this study because this study focussed much on the operations of the LNDB and LDP and how their performance contributes to the economy of the country, dairy farmers and to the government.

The study that was undertaken by Makhobotloane (2018) entitled "Agro-Industrial linkages and rural development in Lesotho: Lesotho Dairy Products and Basotho Dairy Farmers in the Maseru and Berea Districts" focused on the main farm and non-farm linkages between Lesotho Dairy Products (LDP) and Basotho Dairy farmers. This study was taken in Maseru and Berea districts whereas my study focuses on Mafeteng district and is more on how dairy farming can be perceived as a strategy for community development.

In contrast to my study, the goal of the study conducted by Cardoso, Hotzel, Weary, Robbins, and Keyserlingk (2016) was to analyze the views of persons who were not involved in the dairy sector on what they regarded to be the perfect dairy farm and the reasons behind their perceptions. The purpose of my research is to determine the extent to which dairy farming is used as a community development strategy in Mafeteng. The study was titled "Imagining the Ideal Dairy Farm," and it was recognized that public engagement was required in the establishment of socially viable agriculture systems.

Cockburn (2020) did a study titled "Review: Application and Prospective Discussion of Machine Learning for the Management of Dairy Farms" in Switzerland. The study's goal was to see if machine learning (ML) technologies could tackle some of the problems in dairy farming, such as low longevity, poor performance, and health difficulties. Cockburn discovered that machine learning (ML) is a viable method in dairy research that might be utilized to build and improve decision support for farmers.

2.4 Summary

This chapter was about the review of related literature to this study, the theory underpinning the study which is empowerment theory, conceptual discussion determined by research questions and subject under study, together with the empirical evidence which is what other scholars on the same field study had to say in addressing the research problem. Next chapter focuses on related methodology used for this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. Introduction

The purpose of this chapter is to provide details about methods that were used to collect data together with methods that were followed in analysing the collected data. This chapter encompasses research paradigm, research methodology, research design, population and sampling, research instruments, data collection procedure, data presentation procedure, validity and reliability and ethical considerations.

3.1. Research paradigm

An approach, model, or pattern for conducting research is known as a research paradigm (Helpinproject 2019). It is a set of ideas, beliefs, or comprehensions that theories and practices are based upon. It is a reflection of the way a researcher views the development of knowledge. Abbadia (2022) shows that it is the process of creating a research plan that would help the researcher to comprehend the theories and methods of his/her research project fast.

A research paradigm consists of ontology, epistemology, and research methodology (Proofed 2022; n.p). Ontology focuses on the reality that exist in the research, while epistemology studies the knowledge that can be acquired within that research, where research methodology deals with the how part. Ontology and epistemology comprise research philosophy. Research philosophy combined with research methodology comprises a research paradigm. The worldview of a person, which has a big impact on how they perceive the relative importance of reality's components, is something that ontological and epistemological parts of philosophy are concerned with.

The variations in how research paradigms are applied in information research depend not only on philosophical presumptions but also on the implementation of the findings and their interpretation. For this matter the researcher used pragmatism paradigm in conducting her research. As a new paradigm, pragmatism disrupts the assumptions of older approaches based on the philosophy of knowledge, while providing promising new directions for understanding the nature of social research (Morgan 2014; n.p). According to Morgan, the philosophy of knowledge approach, which understood social research in terms of ontology, epistemology, and methodology, is replaced by this new paradigm-pragmatism.

Traditionally, there are two paradigms: post-positivism which often employs a qualitative approach and positivism, which, according to Chilisa and Kawulich (2018), implies solely a quantitative methodology. Chilisa and Kawulich assert that positivism is founded on the idea that science is the only source of genuine knowledge. With the coming of pragmatism we now have three paradigms and we can employ both qualitative and quantitative methodologies.

With the emergence of this new paradigm- pragmatism Morgan (2014) asserts that despite the fact that some ideas are more likely than others to serve our wants and goals, pragmatics hold that we are free to believe whatever we wish. According to Biesta (2010), pragmatism is more effectively understood as a set of philosophical tools useful for solving difficulties rather than solely as a philosophical perspective. The researcher decided to adopt this paradigm because it blends well in her study of community development and dairy farming as this is a practical phenomenon. As Frega (2011) suggests, in pragmatism, empirical is preferred over idealistic or rationalistic approaches.

3.2. Research Methodology

Since this study is based on pragmatism paradigm it automatically becomes uses the mixed methodology research. Mixed methodology is a combination of qualitative and quantitative methodologies. TestingTime (2021), demonstrates that using more than one approach to address an issue or set of hypotheses is possible with the help of the mixed method research methodology. In a research study, or simply alongside a set of hypotheses, it refers to the systematic integration, or mixing, of quantitative and qualitative data.

Although this study is more qualitative than quantitative, the researcher first focused on quantitative part of the research and later on focused on detailed qualitative part. An indicator of a qualitative research is the social phenomenon that is being examined from the perspective of the participants. Purposeful usage for describing, explaining, and interpreting acquired data is what qualifies as qualitative research. As a powerful model that takes place in a natural environment and allows the researcher to gain a level of depth from being deeply immersed in the actual experiences, qualitative research may also be described as such (Creswell, 2003)..

University of Southern California (2023), states that quantitative research places an emphasis on precise measurements and the statistical, mathematical, or numerical analysis of data

gathered through surveys, polls, and other types of research, as well as the manipulation of statistical data that has already been obtained using computing methods. Quantitative research focuses on collecting numerical data and using it to understand a specific event or generalize it across groups of individuals.

The researcher saw it beneficial to use mixed methods as it allowed her to get more answers from the respondents, by giving them the chance to explain more in what they know about dairy farming and community development. This allowed her to get insight of what dairy farming entails. The method also allowed her to quantify some of the responses provided by the farmers and the community at large. In the same research study, researcher used both deductive and inductive analyses. A single research study was created using the mixed methods approach to research to address issues related to both the complex character of phenomena from the participants' point of view and the relationship between measurable variables.

By combining both methodologies in one study, the researcher obtained a more holistic view of the problem in question. The research is more detailed and contextualised, but at the same time it is generalized because of qualitative data used.

3.3 Research Design

The researcher used case study research design in her study. Questionpro (nd) stipulates that the framework of the research methodologies and procedures a researcher selects to carry out a study is known as the research design. The layout enables researchers to focus on developing research techniques appropriate for the topic and set up their investigations for success. It is actually a plan of action in a study.

The researcher saw case study very suitable as it allowed her to learn more specifically, contextually, in-depth information on her topic. It enabled her to investigate the primary traits, significances, and ramifications of the situation. This statement is supported by McCombes (2022:n.p) when showing that a case study is an appropriate research design when the researchers want to gain concrete, contextual, in-depth knowledge about a specific real-world subject. It allows the researchers to explore the key characteristics, meanings, and implications of the case.

Here a researcher is solely interested in describing the situation or case under their research study. It is a theory-based design method created by gathering, analyzing, and presenting

collected data. This allowed a researcher to provide insights into the why and how of research.

3.4 Population and Sampling

3.4.1 Population of the study

According to Momoh (2022), population is a distinct group of individuals, whether that group comprises a nation or a group of people with a common characteristic. In this study the population was derived from the entire Mafeteng community and dairy farmers.

3.4.2 Sampling

Sampling is a process or a technique of choosing a sub-group from a population to participate in the study; it is a process of selecting a number of individuals for a study in such a way that the individuals of selected represent the large group from which they are selected, (Tuner 2020). The study had 50 respondents. Out of 50 respondents, 15 respondents were to be women in dairy farming and 30 respondents were to be men in dairy farming. The remaining 5 respondents were to be the youths in dairy farming.

3.4.3 Sampling Procedure

According to Tuner (2020), there are 2 main sampling procedures in research. These are Probability and Non-probability sampling. In probability sampling everyone has an equal chance of being selected. Non-probability sampling means that not all members of the population have equal chance of being selected for the study.

For probability sampling, the researcher used random cluster sampling as dairy farmers are dispersed within Mafeteng district. McCombes (2022) posits that cluster sampling involves dividing the population into subgroups with similar characteristics to the whole sample. The method is good for dealing with large and dispersed populations.

The researcher also used snowball sampling as a non-probability sampling in which currently enrolled research participants help recruit future subjects for the study. This is because the researcher did not know all the farmers in dairy farming and it was easier when the respondents helped identify others. According to Simkus (2022), this technique is called snowball because the sample group grows like a rolling snowball.

3.5 Research instruments

The instruments employed for this study are interviews, semi-structured and questionnaires. Brief descriptions of how these instruments were used are discussed below:

3.5.1 Interviews

They assisted the researcher in explaining, comprehending, and exploring the beliefs, actions, experiences, and phenomena of research participants. In order to get detailed information, interview questions are typically open-ended. In this case the researcher used semi-structured interviews.

3.5.1.1 Semi-Structured interviews

The researcher used the semi-structured interviews and questionnaires as means to get answers from the respondents. George (2022) explains that semi-structured interview is a data collection method that relies on asking questions within a predetermined thematic framework. However, the questions are not set in order or in phrasing. They are often qualitative in nature and are used as an exploratory tool for humanities and social sciences.

3.5.2. Questionnaire

Bhandari (2021) explains questionnaire as a list of questions used to gather data from respondents. It can be used to collect quantitative and qualitative data. In order to collect data from respondents for a survey or statistical analysis, a questionnaire was used as a research tool that consisted of a list of questions; closed-ended and open-ended questions.

3.6 Data collection procedure

3.6.1. People involved in the study

Dairy farmers in Mafeteng were the main respondents in this study which were the association members and non-association members. The chairperson of Akofang Makaota Dairy Farmers Association (AMDFA) also contributed as one of my key informants. He was helpful in providing the overall performance of the association and the contribution it has on the community and to the member farmers. Additionally, the personnel from the Ministry of Agriculture department in Mafeteng also contributed significantly in providing the estimates performance of dairy farmers in Mafeteng. Other community members who benefit from the dairy products contributed in the study.

3.6. 2 Research Process

The researcher called the chairperson of AMDFA through the cellphone and asked for the permission to participate in the study through face to face interview, as well as allowing association members that would be willing to take part to do so, appointment was set to respond in the session. Interview session for the key informant was conducted few days after the set appointment at his own farm. He also granted permission to interview possible members of the association.

Furthermore, the personnel in the Agriculture department also agreed upon a date he would be free to answer the survey. Due to the transfers that were recently done within the ministry, Agriculture official was interviewed through the phone call as he was not transferred from Mafeteng to Quthing. The discussions took place in the farmers' farms and/or homesteads and in the office. Questionnaires were distributed amongst the dairy farmers so that they can answer on their own convenient time. Other dairy farmers that were asked to take part and had their interview appointments set according to their work schedule. Due to distance barrier and/or busy schedules of the farmers, some were requested to be interviewed through the phone call.

The interview guide and questionnaires were used to collect data. During the interview all the answers were noted in the book in order help the researcher to analyze the gathered data. Moreover, with the consent of the participant the researcher recorded the interview, so that it could act as a reminder for the responses she got from the respondents.

Respondents were free to offer their opinions during the interview, even on subjects that were not covered by the categories that were examined. This helped the researcher to get in-depth information even the one that she was not expecting, but which is beneficial to the contribution of the study. Once more, it should be highlighted that the dialogues flowed easily.

3.7 Data presentation procedure

Data presentation is a process of comparing two or more data sets with visual aids, such as charts (Indeed Editorial Team 2022). The researcher used pie charts, bar charts, texts and pictures to present her findings. Pie charts helped the researcher to successfully present the percentage of data collected. Bar charts were used to show comparisons among categories.

Pictures were used to show emphasis on the presented work. While presenting data as text, all what the researcher did was to write down the findings down in paragraphs and bulleting.

3.8. Validity and reliability/ credibility and trustworthiness

3.8.1 Validity and Reliability

While testing the validity of this project, it can be found that the project is valid as it can be tested several times and still give the same results. Validity is a crucial concern not only for measurement overall but also for assessment. Additionally, validity affects how instruction is modified after an assessment's results have been appropriately evaluated.

Content-related validity is one of the types of validity and it was used to measure and assess the performance of the given results. It investigates how the assessment's content performs, as its name suggests. The researcher is concerned with figuring out whether all topics or domains are adequately addressed in the assessment in order to determine content-related validity. It also addresses how the assessment is created (<https://repository.up.ac.za/bitstream/handle/2263/25218/02chapter3-4.pdf?sequence>).

How consistently a method assesses something is referred to as its reliability (Middleton 2019). This study can be seen as reliable because the same answers can be obtained using the same instruments more than one time.

3.8.2 Credibility and Trustworthiness

Credibility is a measure of the truth value of qualitative research, or whether the study's findings are correct and accurate. This involves summarizing each detail and finding the overlapping themes that are consistent—which drive the key insights found in the study (Farnsworth Group;nd). In this study this was enhanced by detailed field notes by using recording devices and by transcribing the digital files as well as capturing pictures of the dairy animals and the farms.

According to University of Miami (2020), trustworthiness is achieved by credibility, authenticity, transferability, dependability, and confirmability in qualitative research. To operationalize these terms, long engagement in the field and the triangulation of data sources, methods, and investigators to establish credibility. To confirm that the results are transferable between the researcher and those being studied, thick description is needed.

Confirmability of qualitative data is assured when data are checked and rechecked throughout data collection and analysis to ensure results would likely be repeatable by others. A precise coding scheme that identifies the codes and patterns found during analysis might serve as documentation for this. Last but not least, a data check before analysis can also guarantee dependability (National University, 2022). The recheck throughout the collection process was done more often as a result the results of this study is trustworthy.

3.9 Ethical considerations

Ethical considerations in research are a set of principles that guide your research designs and practices. Scientists and researchers must always adhere to a certain code of conduct when collecting data from people (Bhandari 2021;n.p).

3.9.1 Informed consent

The participants were given chance to give their informed consent, it means they were well-informed about the study that was being done. The researcher saw it importantly to inform participants about the project's goals, who or what organization it was conducted under, how the results would be utilized, whether their participation could have any effects, and who would have access to the results. The basic goal of informed consent was to give the participants the information necessary to decide for themselves whether or not to take part in the study. They were also asked for a permission to take pictures of their animals and the farms.

3.9.2 Right to withdraw

The researcher ensured participants that they might discontinue their participation at any moment without it having an adverse effect on their ability to use the current program, their ability to use future programs, or their ties with any of the researchers or research organizations participating. According to My-Peer Toolkit (n.d), it can be difficult to persuade high-risk adolescents to join a program, and it is problematic when participants decide not to stay in a program. No pressure should be applied to individuals who decide not to continue because it is their right to leave a program of this kind at any time. Explanations are also not required.

3.9.3 Confidentiality

The secrecy of the participant's information is one of the most crucial ethical factors. The researcher ensured that under no circumstances may any information pertaining to or submitted by participants be made available to or accessed by anybody other than the researcher herself. The information is only used to safeguard the participants against danger from the outside. Additionally, the researcher guaranteed that no identifiable information about participants would be used in research papers or other published materials. In the research reports, the respondents are always referred to as anonymous. In addition, the researcher reported the information about the participants in the manner that no one could link it to the owner.

3.9.4 Anonymity

Although it is difficult to maintain anonymity especially to people working together, the researcher tried in as much as possible to identify the respondents by subject numbers and not by their names.

3.9.5 Psychological and physical harm

Physical and/or psychological harm might take the form of stress, suffering, anxiety, a decline in self-esteem, or a privacy breach (My-Peer Toolkit, n.d). It was imperative that participants in the evaluation process be not harmed in any way, whether intentionally or not.

3.10 Summary

This chapter gave detailed information on research paradigm, research methodology, the type of research design employed in the study as well as population and sampling selection. The chapter also discussed the research instruments used, the steps taken on collecting data and the manner in which data was presented, the validity and reliability of the research together with ethical considerations. The next chapter focuses on data presentation and analysis drawn from collected data.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0. Introduction

This chapter entails presentation and analysis of data based on the research conducted in Mafeteng district, Lesotho. The analysis aims at revealing whether dairy farming can be taken as one of the strategies that enhance development in Mafeteng, as well as weighing the contribution of Akofang Makaota Dairy Farmers Association to the development of its members. The key informants interviewed in the study were: Ministry of agriculture personnel in Mafeteng together with the chairperson of Akofang Makaota Dairy Farmers Association.

4.1. Demographic characteristics of respondents

Gender, age, level of education, and occupation were among the demographic factors that this study looked at. These variables were helpful in presenting the demographic profile of the study population. Below is a discussion of each variable evaluated in this study.

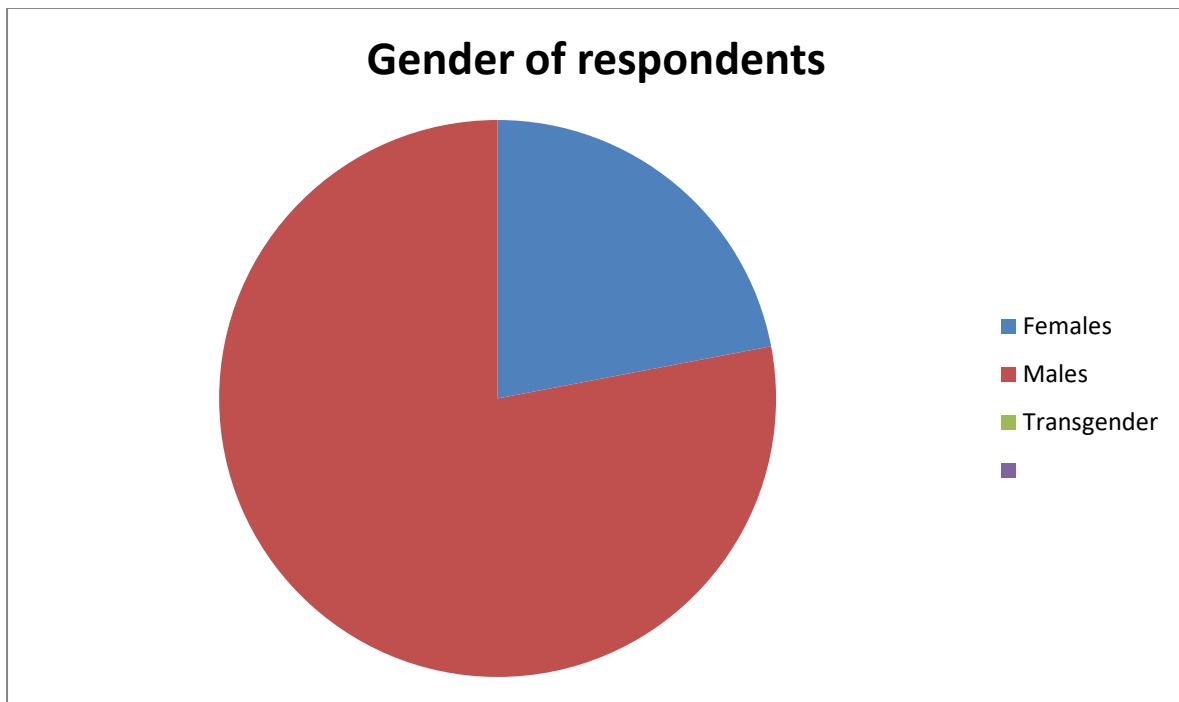
4.1.1. Gender

It was considered to have a well-balanced gender representation amongst the dairy farmer respondents. Nonetheless, the findings show gender bias as most of the respondents are male farmers. Due to the patriarchal system in Lesotho, most men are family household heads, for this matter it was particularly challenging to attain a fully representative gender balance of the sexes, especially among the remote areas of Mafeteng in which people still adhere to cultural norms, values and customs.

None of the respondents showed to be transgendered. This could also be due to Basotho culture that discriminates against the LGBTQ+ group in the communities; hence it is a taboo showing oneself as gender matching to opposite sex, for that reason people are afraid to reveal their true identities in the communities.

Below is the pie chart showing the gender based performance of the respondents in the district of Mafeteng.

Fig. 4.1 Gender of Dairy farmers in Mafeteng



(Source:Primary data)

The chart above shows that out of 50 respondents 39 respondents were males. This number in percentage is equivalent to 78% of the entire respondents that include two key informants; hence, more answers were obtained from the male gender.

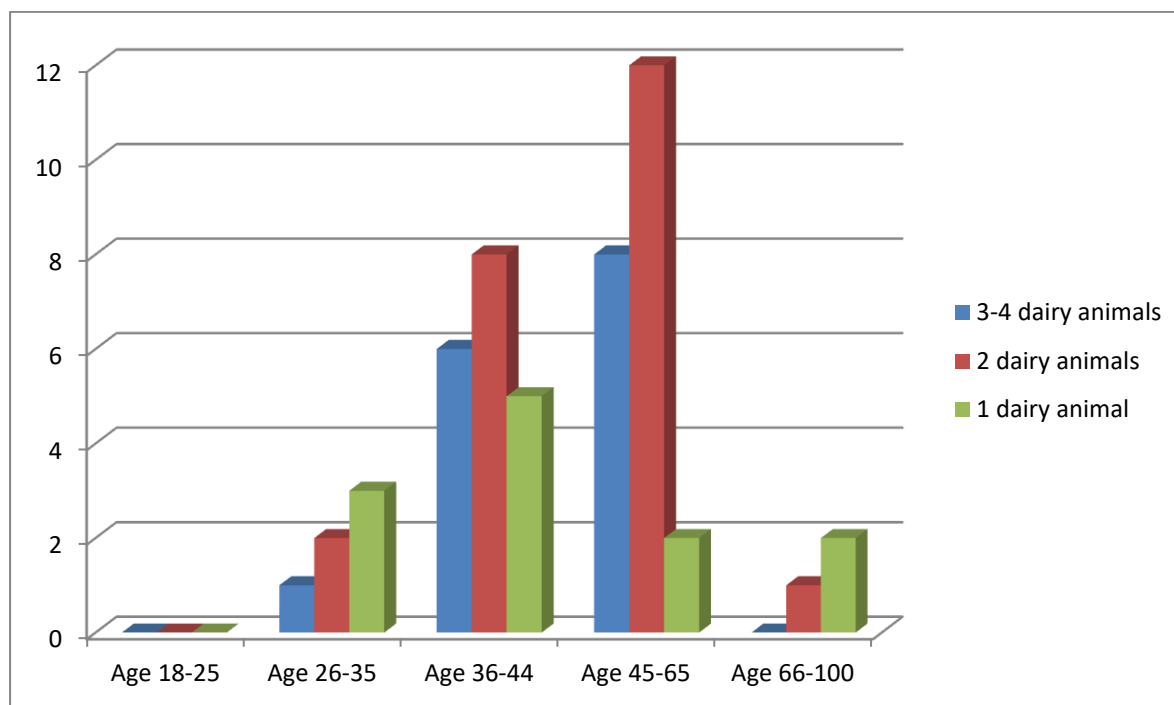
The female gender constitutes only 22% of the whole study. This number is far less, showing that females are still reluctant to join the productive sector; females are still afraid to conquer the industrious sectors such as those of dairy farming. They need to be empowered so that they grab opportunities that come their way.

The chart shows that transgender people were not represented in this study.

4.1.2. Age

Because development can be measured on the effectiveness and involvement of youths to the strategies that enhance growth in every region, it was essential to look into the respondents' age. Age groupings ranged from 18 years to 100 years. In Lesotho the legal maturity age is 18 years old, and when people are 70 years and more, these are generally regarded as having a wealth of experience on a variety of topics, subjects and life circumstances.

Fig. 4.2 The age of the farmers and the number of dairy animals they each group had



(Source:Primary Data)

Looking at the bar chart above, the majority of dairy farmers range from 45 years to 65 years of age, and other age groupings are still represented but at a minimal number. This tendency may be explained by the fact that these age groups consist of the mature individuals that make up these age groups, who have taken full responsibility for their households and are among the most economically active and productive people in the community.

Particularly, the age group of 26 years to 35 years was represented by 10% of dairy farmers, whereas 60% was that ranging from 45 years to 65 years, and 20% of 36 years to 45 years. The percentage of respondents who fell into the latter age category-66 to 73 plus was the lowest like the first category, at 7% and this is assumed they are the elderly who might be inactive at that age.

Surprisingly, the 18-25 age range is not represented at all, the age in which is believed to have effective minds to effect change in the communities. This is also believed because they have not yet experienced life challenges and hardships.

4.1.3 Educational level

In the past, everyone agreed and believed that education was a means of escaping poverty. Nowadays it is thought to be one of the elements influencing how an individual views intervention before deciding whether or not to participate. People who are schooled have a different perspective from those that have not been at school. They have their different way of seeing things as they are more enlightened than the uneducated ones. In order to evaluate respondents' abilities and knowledge for making judgments regarding strategies to be taken to uplift the communities in relation to dairy farming in the study area, it was crucial to understand the respondents' educational backgrounds.

The findings demonstrate that the majority of dairy farmers had primary education followed by those who have an ordinary level of secondary education. Others typically have an advanced level of secondary education while others have a college education. Likewise, very few dairy farmers had university level education. Some respondents in the same respondent category had no formal schooling at all.

4.1.4. Occupational level

In the group of locals, 50% of respondents worked for themselves in various small businesses like vegetable farming or stock-keeping, owned retail shops and tuck shops. Around 20% of respondents in this group worked in the public or private sectors. None of the respondents were unemployed because dairy farming itself is a business. For this reason 30% of the respondents had dairy farming as their only source of living in their families.

4.2. The reasons dairy farming is failing to improve the standard of living in the communities of Mafeteng

Drawn from the interviews conducted there are some reasons why dairy farming hinders the progress of dairy farmers in Mafeteng. If these reasons can be taken heed of, the situation in Mafeteng can be better. Below are some of the factors that contribute to Mafeteng's failure in dairy farming.

4.2.1. The growth of dairy sector in Mafeteng

If taken heed of, dairy farming is one of the strategies that can enhance growth within the country. It is the responsibility of a farmer and of course the industry to ensure that milk supply and demand is balanced in Lesotho. A farmer should, in essence, monitor out-of-the-

ordinary behaviours in the herd using the production records. A decrease in a cow's milk supply may be an early symptom of illness or inadequate food. Most farmers take it as a norm that his/her dairy cow started with so many litres but a few weeks later the very same cow's milk would have been decreased. Few farmers seem to give milk production the attention it requires, despite the fact that it is an essential component for maintaining an enterprise's economic viability. Although one would think farmers would keep records of their productivity, it is only a small percentage of farmers that do keep records.

In Mafeteng dairy farming is not improving, hence the conditions in Mafeteng also are not improving. Farmers who use formal marketing channels where payments are given in stages have a better justification, even though it serves the same goal for those who sell in informal markets. Milk delivery schedules for some farms require trading off with those of other farmers. They must consequently match output with sales records immediately. It would have been expected that all farmers who make use of formal marketing channels would have to maintain records of milk sales. However, according to the survey, only two farmers agreed to have kept track of their sales. All the rest indicated that they only spent their money as it came. Whether or not farmers kept records had no impact on whether they sold milk through official or unofficial marketing channels.

As indicated by the Ministry of Agriculture personnel, most farmers are farmers by name now as they do not own dairy cows. Most of them are still members of their respective associations but as the interview proceeded and the researcher was referred to them, it was only then that what the Ministry of Agriculture personnel mentioned was confirmed. Most of the farmers would agree to be members of a mentioned association but having no dairy livestock. As a result, the demand for milk is high in Mafeteng but the supply is low, it would only make things better if farmers were indeed dairy farmers.

Normally, it would be expected of every dairy farmer to show great attention to detail of their feed purchases and costs, so that they could know how much the cost of producing one litre of milk is. Holden and Loosli (n.d) assert that food produced or created for cattle and poultry is known as feed, commonly known as animal feed. They show that in order to create modern feeds, ingredients are carefully chosen and blended to create very nutrient-dense diets that both sustain the health of the animals and improve the quality of such by-products as meat, milk, or eggs. Hence buying this feed seems expensive for the farmers that they need to keep records of their feed. Feed cost is a changeable component that necessitates on-going record

keeping. In order to enhance the margin between production costs and the price of a final product, a farmer should, in theory, strive to provide feed that is both affordable and of excellent quality. It gets more profitable to stay in farming when the margin is large. Unfortunately, few people in Mafeteng, if it is not the entire country, appear to understand the value of tracking their feed usage and expenses.

4.2.2. Milk Products and Export

Only three of the forty eight farmers confirmed to be producing milk products. All the three of them produce yoghurt. The other one also produces well bottled and sealed sour milk. One farmer said he had just tested making cheese and his trial was successful as a result he will be producing cheese as well. Most of the farmers had an interest in making milk products but they demonstrated that they needed training to produce those. Others showed that although they had interest in producing milk products, unless they increased milk production the mission would not be accomplished. This was confirmed by the three that showed that they had started producing milk products and they sold their products only to the nearby people because if they produced more it would mean they would not have fresh milk to sell to their communities.

In Mafeteng Milk is produced by smallholder farmers that do not produce more for export. They therefore produce in small quantities and make sales to the communities that only cover their family expenses such as paying for the children's school fees, cover medical expenses, put food on the table and clothes to wear. Exports are used as a source of income for any given country; as a result exports from Mafeteng would bring in more money into the district to make it wealthy.

Exports increase the GDP of the country; hence milk products from Mafeteng to other districts and/or countries would increase the GDP of Mafeteng. The demand for milk and milk products is high within the country because milk is not abundantly produced within the country, this gap Mafeteng would fill in by producing more milk. In fact, this would even hinder the milk imported from other countries to enter the country, because imports do not bring in money into the country but take the profits away.

In response to what plans the government has to ensure that the milk products are produced in Mafeteng, the agriculture personnel emphasised that the government had no plans because only the farmers through their associations could make those plans. He showed that in

Mafeteng milk production is low as a result unless the farmers buy more livestock for greater production there is no way we can talk of milk products and their exports.

4.3 Challenges faced by dairy farmers in Mafeteng

Despite the fact that dairy farming is failing to improve the standard of living in Mafeteng, there are challenges that dairy farmers face in Mafeteng. One of the challenges stated was the issue of climate change. Mafeteng is regarded as a desert environment amongst all the districts in Lesotho. With this rate of climate change, when the sun hits, it becomes so much that plants planted become easily destroyed by heat, during the windy times, top soil is easily blown away, so much that when it is during the heavy rain season, it becomes easy for the land to crack and form dongas.

Most dairy farmers found climate change as a huge challenge that they cannot run from. It is so inevitable that some even think of leaving dairy altogether unless the government does something to help. One farmer stated, *“I like dairy farming but climate change hugely discourages us. As you can see now our feed has been destroyed in the fields because we are unable to harvest due to muddy surface”*

4.3.1 The need for dairy farmers’ workshops in Mafeteng

For any industry to function properly and bear fruits there is a need for workshops. Dairy farmers also need regular workshops. According to them they do not hold workshops, some even mentioned that they herd their dairy animals like any other animals that usually go to the pastures to graze. About 90% of the respondents showed that the government does not help with workshops like they would usually do with other flocks, especially those that produce wool and mohair. Contrary to what the farmers stipulated, personnel from the Ministry of Agriculture showed that they do hold workshops for dairy farmers and that, the attendance becomes excellent as farmers attend in big numbers. However, it was only 10% of the dairy farmers that agreed with the official. This brings us to the conclusion that workshops are indeed needed for dairy farmers in Mafeteng.

Moreover, dairy farmers in Mafeteng, lack dairy equipment that would be beneficial for more milk output. The official from Agriculture agreed that most of the time farmers' alfalfa got destroyed on the fields because they do not have a harvesting machine (balers). He showed that the ministry does lend the farmers that type of a machine but it is unfortunate that even the ministry has got only one that circulates the entire country. This becomes a challenge

because in some of the areas the machine is delayed so much that by the time it arrives it is too late. Greene (2021), demonstrates alfalfa as being beneficial for dairy cattle and of course other livestock because of nutrients provided in it. So this means dairy farmers face a huge challenge by harsh weather conditions destroying their feed due to lacking equipment.

Dairy farmers in Mafeteng still use hands to milk their cows. They still use “likhamelo”(milk cans) as their milk containers

4.3.2' Monehelo''mutation' importance of having a good breed (artificial insemination)

Farmers argued that they have a low quality breed that does not produce more milk, unlike in South Africa where they buy these cows, in which farmers there produce tons of milk per cow. As they claim, this can be because the sellers are selling them a low quality breed on purpose because they are not knowledgeable of the good breed they can buy. One can see that it is important that experts be present in the dairy industry to teach farmers on every important aspect they need to know about farming.

One of the factors that farmers pointed out was the issue of not having enough financial resources that can help buy quality breeds in Mafeteng. It is indeed obvious that they cannot afford expensive yet high producing breeds because most of them have two or three cows of which they depend on fully as their household income generator. Farmers show that dairy cows are expensive, that was why they could not afford to buy more cows unless the government could help with subsidies.

Another factor that the farmers pointed out was the issue of insemination. They showed that it would be better if the government could help with artificial insemination because natural insemination is expensive since they have to go to Maseru for it. So transport is expensive and the amount of money that they have to pay for farmers in Maseru that have bulls is also skyrocketing.

4.3.3. The role of the government in dairy industry

About 95% of the respondents showed that the government does not help in responding to the challenges that they face as dairy farmers. The official from Agriculture also confirmed that the government does not help except with the lending of the harvest machinery, of which that machinery also is only one for the entire country. This really shows that indeed the government is not helping.

4.3.4. Marketing places as hindrance to dairy growth

Milk collection centres can be a better start for those that only do not want to sell at farm-gate. Most farmers from the areas of Ts'akholo, Thabana Morena, Matelile and Kolo indicated that they are unable to sell their milk at Mafeteng Milk Collection Centre because of the distance barrier. They showed that petrol, as well as hiring someone who will deliver the milk would milk their money down. In the light of this, one farmer from Matelile and one from Ts'akholo said they tried transporting their milk to "Lekukeng" as they normally call Mafeteng Milk Collection Centre, but their trial did not benefit them. They denoted that they were only selling for the petrol money that was why they had to abandon the initiative of selling to Lekukeng.

Although delivering their milk to Lekukeng is one form of earning a stable income for Mafeteng dairy farmers, the pricing of LNDB as they demonstrated is too low. They asserted that the pricing would not make the dairy industry grow, because they are unable to produce animal feed for themselves and animal feed is expensive, in addition the cost of caring for dairy animals is way too high.

Those who lived in the villages surrounding town were mostly the ones who delivered their milk to Lekukeng. Most of those who lived near town about 70% sold their milk at the farm-gate and to Lekukeng. It is only 28% of those farmers that showed no interest to sell to the milk collection centre because of the pricing. One farmer, that makes 2% showed to have fully sold to the milk collection centre. According to him, selling to the LNDB was way better than getting unstable little money than waiting for that money to come as a lump sum. Moreover, people at his village were not buying milk and it got spoiled.

4.3.5. Animal theft and feed

One of the challenges that dairy farmers together with the chairman and the agriculture personnel pointed out is the issue of theft. In Mafeteng there is a high animal theft and for that dairy animals are not the exception. Farmers showed that most of their animals are stolen and marketed out of the country. This is a challenge because they said even the police are not helping, they always said they have run out of resources to go after the thieves. Even if they would be willing to help they were afraid for their lives as they would never know what weapons the thieves had.

Other farmers indicated that their animal feed is stolen on the fields. It was either the thieves would graze their animals during the night or they harvested the feed at night. This is a huge challenge considering the fact that animal feed is expensive and that sometimes the very same planted feed would be hit by climate change conditions.

4.4. The viability of Akofang Makaota Dairy Farmers Association in Mafeteng

As an umbrella association AMDFA was believed to be the most successful association in Mafeteng. Nonetheless, the association seems to have hit the iceberg. Even though some member farmers stated that the association does help, through the workshops and trainings that it seldom holds, most member farmers did not agree.

Majority of farmers said it was better if the association was dissolved because it did not serve its purpose as an umbrella. In response to the question of whether members could encourage non-members to join the association, almost all of them stated that they would not encourage anyone to join the association.

On the contrary, the chairperson of the association showed that the association helped members with marketing their milk through Mafeteng Milk Collection Centre (Lekukeng). It is through the association that Lekukeng has reopened since it was earlier closed down due to some challenges. He also emphasised on the issue of association seeking sponsors such as NGOs and Agriculture departments that would hold workshops for the members. However he showed that this also was a challenge because most of the time they would have to wait longer before the sponsors could respond and sometimes they gave a negative response.

The chairman also demonstrated that the association helps members to build milk-sheds. To this most member farmers disagreed and said that was only the plan that had never been implemented. With this view the chairperson believes the association is still on the right track and still improving the lives of its members, although he agreed that they as the association are not producing any milk products. He asserted that if there is any member who did produce it was out of his own free will not because of the association.

The official from the Ministry of Agriculture showed that the association could not perform well because members come from different minor associations that have differing constitutions. This makes it difficult for members to come to consensus as the clause that states this way to others, to other members in a different association states in a certain way. So most of the time they disagree and not even the constitution was able to come in between.

This shows that the association does not have its own governing constitution that would make things better whenever conflicts arise. Some of the farmers confirmed what the personnel stipulated and they continued to say it was better if the association was dissolved.

4.5. Strategies that can help improve dairy farmers in Mafeteng

Mafeteng is one of the places in which farming not only in dairy is practised, although it most of the time being affected by drought. If motivated, farmers can produce more for their better standard of living and improvement of Mafeteng. Farmers need to be empowered so that they can see the need to produce more. There are strategies that can enhance the development of farmers in Mafeteng.

4.5.1. The development of goat milk in Mafeteng

In 2006 as UN (2007) shows Teams of "peer farmers" were assembled by Send a Cow to reside in neighbourhoods in the Mafeteng district. The non-profit has taught 1,900 families about group dynamics and sustainable agriculture since April 2006. The same methods learnt via Send a Cow are being taught by family members to other community members. According to one dairy goat farmer, the charity donated dairy goats to groups in the villages so that they can be involved in dairy farming.

Farmers were asked to pass on the lambs of these dairy goats to other farmers in the communities so that at least one farmer had one dairy female goat that would help her/him to get more goats. However, as the farmer narrates, it was not the case with farmers who were first given goats, they did not pass on the female lambs to other farmers. Again, the farmers did not take good care of the goats because they got them freely and they no longer have them.

He, however, bought a dairy goat from one of those who were given a goat by Send a Cow organisation, and with his financial resources he went for training to understand more about this type of farming. This is where he learned to produce cheese, yoghurt and sour milk (*mafi*) that he sold to the people in his village.

Other two farmers with dairy goats indicated that they bought the goats from one of the farmers in Maseru. Although they are not producing dairy products, they both showed that goat milk is more beneficial than any milk from other dairy animals as people that are lactose intolerant can use it since it is lactose free.

If the production of goat milk can be sustained in Mafeteng, it can help improve people's standard of living. Farmers showed that they multiply rapidly because they give birth to young ones at least three times a year and they bear twins. They also showed that hospitals and nursing mothers can use the milk to their infants for those who are unable to breastfeed as goat milk is likened to that of a human's. One farmer attested that he had allergies but after using goat milk he no longer has allergies. This really shows that goat milk is so beneficial even to the health of people.

Pic. 4.3 Dairy goats from one of the farmer's stalls in Mafeteng



(Source: Primary Data)

Maintaining dairy goats is not as difficult as it is with dairy cows. According to the farmer, he does not take the goats to the pastures; he only leaves them within the yard to graze over all kinds of the plants that grow in that yard. He also would go out bring them the leaves from various trees, shrubs and other plants that do not grow in his yard. Rearing dairy goats is indeed not expensive because like he said there are no specific feed that he buys for them to produce milk, buying animal feed is a choice not a must according to him.

It can be concluded that people do not keep dairy goats because of lack of knowledge and ignorance. Awareness campaigns can be a better tool for farmers to know about rearing of dairy goats and their benefits so that in addition to dairy cows they can also produce milk through dairy goats. And because of the goat milk's benefits, the farmer showed that milk per litre is doubled the price of cow milk per litre. This says, the farmers would make more profits than they are doing with only cow's milk.

4.5.2 Milk as job creation effect for unemployed youths in Mafeteng

Most farmers do not have helpers for their livestock. This, according to them, is because they cannot afford to pay them, as most of the farmers make their living out of dairy farming only. Another reason could be because they have limited livestock that they can still manage without help. Only 20% of the farmers had helpers and they showed that they paid them once a month.

Job creation is one of the strategies that can help improve dairy farmers and develop Mafeteng communities. If farmers could leave the management of the dairy animals into the hands of those hired, would not only improve dairy farmers' livelihoods but would improve that of the hired one. It would help the helper put food on his table and help the farmer to research and rethink the strategies to improve his milk production.

The Lesotho National Dairy Board should come to the dairy farmers at the grassroots level, and listen to their challenges. This would help to solve the problem of the farmers not being able to reach the milk centres due to distance barrier, for that matter they could come to a consensus. Building milk collection centres at the nearby communities at the rural communities would help not only the farmers but the LNDB as well to collect more milk. This could help them to produce milk products and packaging enough fresh milk so that milk imports would stop.

4.6. Summary

This chapter analysed and presented data collected in the Mafeteng district. The researcher looked at the gender, age, educational background and occupational statuses of the respondents among the attributes that help to analyse the data. There are some reasons discussed for the failure of dairy farming in Mafeteng as well as the challenges that dairy farmers face on daily basis that hinder progress in the lives. The viability of AMDFA was also looked upon. In conclusion, some of the strategies suggested by the farmers and the researcher are also discussed in the chapter. Next chapter presents summary of the study, conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter concludes this research project. The summary of the research is presented; conclusions of the study are discussed and interpreted. The recommendations that suggest specific interventions and strategies to address the situation of dairy farming in Mafeteng are also discussed. The limitations and recommendations for further studies conclude the chapter. This helps to contextualize study results and evaluate the reliability of the research.

5.1 Summary

This study explored the importance and contribution of dairy farming in Mafeteng district, Lesotho. It sought knowledge on what extent dairy farming could be a strategy for community development. Dairy farmers in Mafeteng, whom most of are Akofang Makaota Dairy Farmers Association, the association that was believed to improve the standards of their living, were still not progressing in their endeavours.

Based on empowerment theory, the literature focused more on the importance of dairy farming together with dairy products. The emergence of Covid 19 that became prevalent in 2020 in Africa also came as a challenge to most dairy farmers and with that Lesotho was not an exception. Because in its nature the study used pragmatism paradigm, it automatically used mixed methodology in which case study design was adopted.

Areas of Thabana Morena, Mafeteng Urban area, Ts'akholo, Vanrooy, Matelile and Kolo were used to sample the participants in this study. These areas consisted of members of the umbrella association together with those that were not the members. Random cluster and snowball sampling were used to selected members of the community to participate in the study although snowball sampling became prevalent to cluster sampling. Surveys were distributed amongst the farmers, while others were interviewed through the phone because of their busy schedules and distance.

Findings showed more men in their middle ages participating more than women in this study. Most farmers demonstrated that they face huge challenges of which the government did not lay a hand to help. Finally, the emergence of dairy goat farming seemed to bring hope in dairy industry for its benefits it had.

5.2 Conclusions

Gender difference is still the matter at hand in dairy sector. Women still withhold themselves from venturing into big sectors such as that of dairy. This is because productive and profitable works were previously associated with men. Men were the ones to take the financial responsibility of the family but things have changed, for women are now able to provide for their families too. However there is still resistance when it comes to women participating fully into industrious works as it is seen in dairy.

Young adults are still reluctant to venture into dairy farming, it can be concluded that it is because most of them are still in schools advancing their careers. Most of the middle aged people are enthusiastic to be in dairy farming but most of them have not gone to formal education, as a result this hinders them to equip and dig more into dairy farming as it is known that uneducated people have their different way of thinking. They cannot do researches like people with education would normally do. Most elderly people have done their part, and they are now exhausted, they are not as active as they might have been in their youthful ages.

Dairy industry is not growing in Mafeteng, farmers are not taking heed of serious issues such as taking records of their financial sales, and they use money as it comes. This ignorance is delaying their growth as farmers, because they cannot save to increase their livestock. It is believed that if farmers have more dairy animals, those animals would result in more milk production. Milk production is low in Mafeteng but farmers are not taking any initiatives to change the situation, they are relaxed, treating the situation as normal.

Majority of farmers showed interest in producing dairy products and very few have already started. However, farmers that are able to seek training for them are the ones that can succeed producing dairy products. Most farmers rely heavily on government and they complain that the government does not do anything to improve their wellbeing. With that attitude, such people cannot make it to dairy products production. There will be progress only if dairy farmers can take initiative and stop blaming it to the government. Again in collaboration they can do better, so in this case everyone wants to do it alone and with that mentality they will not be able to make it to big markets.

Workshops are important, they enlighten those that attend and make them see things in a different positive way. Like in any other farming departments it would be better that the

government help with subsidies especially on the insemination as farmers take it as a challenge. Natural insemination is expensive because those that have bulls set high prices; knowingly they are in high demand. Artificial insemination also is a problem because despite the fact that it is also expensive, it needs well experienced and skilled people, hence most of the farmers do not possess those.

Moreover, there are no milk centres in Mafeteng, there is only one; Mafeteng Milk centre which is in town, and farmers that are at their far villages cannot make it to the centre. Despite the fact that farmers are not satisfied with the pricing of milk centre, if milk centers are brought near the farmers, they are likely to deliver the excess milk to eliminate the risk of spoiling.

The association is not doing more like it is expected of it. Most farmers wish it could be dissolved because it does not serve its mandate. The association must be governed by one constitution, and that one constitution must be used even to the sub-associations that are under it. This will help them have a consensus whenever conflicts arise, because one clause would be saying the same thing for all the members. Unlike now that each and every association comes in with its regulating constitution, which leads to them not going on one direction.

Rearing of dairy goats should be intensified in Mafeteng. This is one of the big projects that can ensure the growth of the economy in Mafeteng. Although they need extra care, but their reproductive increase is guaranteed; they can multiply faster than expected hence, bringing massive production on milk. This calls for farmers' workshops so that they can be more equipped on production and care. Again due to its benefits on health, keeping of dairy goats is indeed a must.

Dairy farming can be a strategy for community development in Lesotho but in this case dairy farming in Mafeteng is not a strategy because farmers in Mafeteng are still not improving their lives. Farmers' livelihoods and their communities are still the same. Although there are other developments in Mafeteng, these developments within the communities of Mafeteng are not enhanced through dairy farming. Farmers are not able to give back to the communities that support them by buying from them; this might be inferred that this is because they lack the financial means to do so.

It can also be concluded that farmers are not making enough profits to sustain them. They cannot grow as farmers because they do not get enough returns. This can be because they buy almost everything from animal feed, medication to insemination, of which all of these are expensive for them. With the prices of the products that continuously rise, milk prices at the community level to the LNDB are stagnant. This makes farmers have it difficult to maintain the same profits they might have before the rising of everything in the market.

5.3 Recommendations

- Milk prices should be regulated throughout the country. Farmers price their milk in a different way; most of them in the rural areas set their prices high so much that people do not buy the milk. They end up having to throw the milk away due to it being spoilt. Government should not set the prices so low that they do not see good returns; still considering the fact that they are unable to produce their own animal feed as a result they have to get into more expenses on feed and other things that are necessary for the animals.
- Since most laws governing farming in general are customary laws, they need to be amended. For instance, the issue of theft concerning animal feed theft, that is waking up in the middle of the night and grace over someone's feed is punished using the old customary laws that are now not bringing any impact to the punished one. For instance, if one cow grazes over one person's field the owner has to pay M12.00, this is underpriced. This is why animal feed theft is increasing instead of decreasing because owners of the livestock know they are going to pay less than what his animals would have gained.
- To increase dairy output in Lesotho, the Lesotho National Dairy Board (LNDB) should execute a Memorandum of Agreement (MOA) with farmers associations throughout the country. Upon signing the MOA, the LNDB should reach out to the NGOs, the government stakeholders and any helping body to provide assistance especially on training and research so that the farmers can be able to produce more.
- In order to enhance the more milk output through the increase in dairy animals, farmers should access funds from the banks and/or government, since dairy animals are expensive and farmers tend to settle to one or two cows and three to five goats due

to lack of funds to increase the livestock and flock. The two parties should have an agreement of how the farmers should pay back money incrementally.

- Since equipment has to be bought from abroad it becomes difficult for farmers to go abroad and buy it. This is why they still use old equipment whereas now nations have moved to efficient advanced equipment. Private business man should buy this advanced equipment in bulks as it is usually cheap to do that, and bring it home so that the farmers can have access to it and buy from them.
- The government should initiate development policy, which will help not only dairy farmers but the entire farm sector to thrive. Farmers must be empowered through community mobilizations so that they can produce more. People that are empowered are able to effect change in their communities and to their community members.
- The government must invest in human capital in the form of offering sponsorships to the citizens to study in the careers that would benefit the country such as that of veterinarian. There are limited number of vets in the country and most of the farmers 'animals die because of lack of vets. So it is recommended that more veterinarians to be produced so that they can be scattered everywhere in the country to help the farmers.
- Schools should buy milk from the farmers not from the wholesalers. School feeding schemes that are in operation in Lesotho must be regulated with a binding policy that states that they must buy from the farmers only. The cooks buy bulk items from the wholesalers in which most of the time they are given food in credit and pay it up later, the unfortunate part is that they take milk that are manufactured from abroad in bulk, hence they are not improving the economy of Lesotho but of the other country.
- Although dairy animals are not usually going out on the veld to graze, it is recommended pastures be preserved. Experts in agriculture should ensure that the grass is well kept and preserved so that in desperate times animals can still have a fertile place to graze their animals. What shepherds do now is to overgraze the pastures so much that they cause soil erosion and land degradation. With degraded and eroded land other plants species never grow on the place like that again, causing other species disappear on our environment.

- Good management practices should also be ensured especially by dairy farmers. People they hire to help them must be knowledgeable on the field of dairy, this means they must be well trained and/or introduced in a course to perform the job properly. Taking just a lay man and entrusting him for managing dairy animals is a threat to the industry at large, as there are principles and fundamentals that he should take heed of, but cannot do because of just being a lay man in the field.
- Farmers as members of the communities in Mafeteng need to be empowered. Including farmers into the discussions that involve them will help come up with solutions that are better suited for farmers and their communities. It is farmers who know what they lack, what challenges they face and what they would like to see improve in their lives and their communities, as a result involving them will empower them to have more opinions that will benefit the communities. Since they cried about lack of equipment, it is necessary to give them startup equipment that will enhance their growth and wellbeing in the industry. This equipment should also be of high quality so that they do not get stuck along their business journey. This will help them to achieve their own equipment and help boost others also that are new into the dairy sector.

5.4 Limitations of the study and recommendations for further studies

Although the study preached highly of abundant milk quantity, the study did not get into details of what type of parameters to be used to assess milk quality. Farmers can produce more milk but of less value for international marketing, this is why the study for reviewing of measures and parameters used to address milk quality is recommended for further studies.

The study covered only Mafeteng district, but it can be recommended that the very same study to cover the entire country as ‘Dairy farming as a strategy for community development in Lesotho’. This will help the country weigh its success in dairy industry, as well as comparing which districts perform better than others and why.

On dealing with farming that most of the time climate change affects, study on the perspectives of farmers on future dairy farming in Lesotho is required. Since they already have experience on dairy, their views would enlighten the government on the actions to be taken to improve the industry.

From this study, it has been found that dairy goats have more benefits as compared to dairy cows, nonetheless dairy goats breeding does not make 5% of the dairy industry. Therefore the study that will look only into rearing dairy goats and production of dairy goats' products is necessary. It is important to conduct an extensive study to dig more knowledge of what could be done to produce more goats in the country. This will help the dairy industry in Lesotho to thrive since dairy goats do not demand more in maintenance and care.

Lastly, the environmental impact of dairy production in Lesotho can also be studied, so that good and safe environment is enhanced through dairy. This will help the government and farmers what measures are environmental friendly and the reasons why those measures not the other ones could be adopted in Lesotho.

5.5 Summary

The chapter discussed and provided the summary of the whole research project; the conclusions drawn from the study; as well as the researchers recommendations directed to the government, NGOs, the public and the dairy farmers.

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Appendix 1

Dairy farmer's questionnaire and interview guide

I am MA student in Development Studies at NUL. I am conducting a study on dairy farming as a strategy for community development in Mafeteng district. I would like you to take part in my study by providing me with the responses to the questions I have below.

1. Gender

a. Male

b. Female

c. Transgender

2. Age

a. 18-25

b. 26-35

c. 36-45

d. 46- 100

3. How many dairy cows do you have?

a. 1

b. 2

c. 3

d. 4 and/or more

4. How many litres does each cow produce per day?

a. 5 litres

b. 10 litres

c. 15 litres

d. 20 litres

5. How has your life improved since you practice dairy farming?

- a. extremely
- b. good/well
- c. not improved/still the same

6. How many employees do you have that help in your dairy business?

- a. 1
- b. 2
- c. 3
- d. 4 and more

7. How are you paying them?

- a. Daily after each shift
- b. Weekly
- c. In two weeks' time
- d. Monthly

8. Are you marketing your milk on both the community and national dairy board (Mafeteng Milk Collection enter)?

9. How would you compare selling to the community as opposed to selling to national dairy board? Which of this generates more profit for you?

10. Which dairy products are you producing other than raw milk?

11. Are you exporting those dairy products that you produce?

a. Yes

b. No

12. What are the challenges that you face as a dairy farmer?

13. What can be done to overcome these challenges?

14. What is the government's take on these challenges? How is the government helping you to cope with these challenges?

15. Are you the member of Akofang Makaota Dairy Farmers Association?

a. yes

b. No

14. How has AMDFA helped to improve your standard of living?

16. What can you say are the benefits of becoming the member of this association?

17. Judging from your experience as a member why would you encourage non-members to join the association?

18. How does it help you grow as a farmer?

19. What are those strategies that can be done to improve dairy industry in Mafeteng?

20. How can community development be enhanced through dairy farming in Mafeteng?

Thank you for your time and cooperation.

Appendix 2

Interview guide for Ministry of Agriculture personnel

I am MA student in Development Studies at NUL. I am conducting a study on dairy farming as a strategy for community development in Mafeteng district. I would like you to take part in my study by providing me with the responses to the questions I have below.

1. What do you understand by dairy farming?

2. According to you is the dairy industry growing in Mafeteng?_____

Please explain your answer

3. Which dairy products does Mafeteng produce?

4. Which of these products are exported to other districts and/or countries?

5. If there are no milk products produced within Mafeteng, what are the ministry's plans to ensure they are produced?

6. What challenges have you seen dairy farmers facing especially in Mafeteng District?

7. How do these challenges affect dairy production?

8. Does the ministry hold workshops for dairy farmers? _____

9. If yes, how does the ministry hold those workshops?

10. If yes, how is the farmers' attendance?

11. How does the government participate in ensuring that these challenges are attended to?

Thank you for your time and cooperation.

Appendix 3

AMDFA chairperson interview guide

I am MA student in Development Studies at NUL. I am conducting a study on dairy farming as a strategy for community development in Mafeteng district. I would like you to take part in my study by providing me with the responses to the questions I have below.

1. How many members does the association have? _____

2. How does the association help in community development?

3. How does the association help improve members' standard of living?

4. What are the challenges faced by the association that could be the hindrance to the growth of dairy industry?

5. As association, are there other dairy products that members are producing except for raw milk?

6. How do members promote/market their produce? _____

Appendix 4

