

**ANALYSIS OF TRADE STRUCTURE AND PATTERN OF WOOL AND MOHAIR
EXPORT OF LESOTHO**

By

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DECLARATION

I declare that the dissertation hereby submitted by me for the Master's degree in Agricultural Management at the University of Free State is my own independent work except where specifically acknowledged and it has not previously been submitted by me at another university.

Nkhala Isdorinah Mokhethi

January, 2015

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ABSTRACT

Lesotho has been a Southern African Custom Union (SACU) member from the inception of SACU, and most of its trade policies have been shaped at the SACU level. Lesotho's trade related policies are mainly the responsibility of the Ministry of Trade and Industry, Co-operatives and Marketing. Lesotho is a founding member of the World Trade Organization (WTO); as such it took commitments on trade at the multi-lateral level for the first time during the Uruguay Round. Lesotho agreed to undertake very extensive commitments for the trade liberalization.

The main objective of this study is to analyze trade structure and pattern of wool and mohair export commodities of Lesotho. The study set out to determine whether the trade policies has more protection on the agricultural products than needed and whether the policy provides more

trade openness. The study further indicated trade performance of wool and mohair in the international markets. Most of the data collected were the secondary data.

For the analysis of this study, different sources of data and methodologies have been used to achieve the objectives of this study, it includes: Revealed Comparative Advantage Index, Hirschman Index, Effective Rate of Protection, Nominal Rate of Protection and Trade Map. Findings from the Revealed Comparative Advantage Index indicated clearly that Lesotho enjoys Revealed Comparative Advantage of wool and mohair during the study period 2003 to 2012. The results also revealed that Lesotho is specializing with these agricultural commodities in the agricultural industry.

The results indicated that market concentration of wool and mohair is low meaning that Lesotho is having few trade partners as indicated in the Hirschman Index theory. A country with few trade partners has low index values. All the values of wool and mohair are closed to zero. Lower concentration reduces the impact of international trade risk due to the possibility of price fluctuation of wool and mohair products. Trade Map results revealed that Lesotho's wool and mohair are distributed to a couple of large trade partner countries which is China, South Africa and India. This indicates that there is low market concentration for Lesotho's wool and mohair, therefore Lesotho needs to diversify the geographical destination of its trade. The study also shows that Effective Rate of Protection calculation is lower than the Nominal Rate of Protection for both wool and mohair in Lesotho. This means that the protection for input is higher than that of the output in both wool and mohair. The sub-sector is not subsidized by the government, but it is taxed by the government tariff policies.

Key word: Wool, Mohair, Trade structure, SACU, Revealed Comparative Advantage Index, Hirschman Index, Effective Rate of Protection, Nominal Rate of Protection and Trade Map.

ONTLEDING VAN HANDELSONTBESTREKKE STRUKTUUR EN DIE PATROON VAN EN SYBOKHAAR UITVOER LESOTHO

DEUR

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SAMEVATTING

Lesotho is 'n Suider-Afrikaanse Custom-Unie (SACU) lid van die ontstaan van SACU, en die meeste van sy handelbeleid is geyorm op die SACU-vlak. Lesotho se handel- verwante beleide is hoofsaaklik die verantwoordelikheid van die Ministerie van Handel en Nywerheid, Koöperasies en Bemaking. Lesotho is 'n stigterslid van die Wereld Handel Organisasie (WTO); as sodanig het dit verpligtinge op die handel by die multi-laterale vlak vir die eerste keer tydens die Uruguay-ronde. Lesotho ooreengekom baie uitgebreide verbintenisse te onderneem vir die liberalisering van die handel.

Die hoofdoel van hierdie studie is die handel struktuur en patron van wol en sybokhaar uitvoerkommoditeite van Lesotho, te ontleed. Die studie uiteengesit om te bepaal of die handel beleid het meer beskerming op die landbou produkteas wat nodig is en of die beleid verskaf meer handel openheid. Die studie het verder handel prestasie van wol en sybokhaar in die internasionale mark aangedui. Die meeste van die data wat ingesamel is, was die sekondêre data.

Vir die analise van hierdie studie, verskillende bronne van data gebruik, metodologies gebruik is om die doelwitte van die studie te bereik, sluit, in Revealed Vergelykende Voordeel Indeks, Hirschman-Indeks, Effektiewe en Koers Beskerming, Nominale Koers van Beskerming en Handel Kaart. Bevindinge van die lig gebring vergelykende voordeel indeks duidelik aangedui dat Lesotho geniet geopenbaar vergelykende voordeel van wol en sybokhaar tydens die studie tydperk 2003 tot 2012. Die resultate het ook getoon dat Lesotho spesialiseer met hierdie landboukommoditeite in die landboubedryf.

Die resultate dui daarop dat mark konsentrasie van wol en sybokhaar is lag beteken dat Lesotho is met min handelsvennote soos aangedui in die Hirschman Indeks teorie, land met min handelsvennote het 'n lae-indeks waarde. Al die waardes van wol en sybokhaar is gesluit op nul. Handel Kaart ook aangedui dat slegs is China is die grootste mark vir Lesotho se wol gevolg deur 'n paar ander lande en Suid-Afrika en India. Terwyl Suid-Afrika is die enigste van die mark vir sybokhaar van Lesotho. Die resultate van die Handel Kaart ook die groei van Lesotho se uitvoer in die hoeveelheid aangedui en waardes wat beteken dat Effektiewe Koers van Beskerming berekening is laer as die Nominale Koers van Beskerming vir beide wol en sybokhaar in Lesotho. Dit beteken dat die beskerming vir insette is hoër as die van die uitsette in beide gevalle van wol en sybokhaar. Die sub-sektor nie deur diestaat gesubsidieer.

Slutel word: Wol, Sybokhaar, Handel struktuur, SACU, Revealed Vergelykende Voordeel Indeks, Hirschman Indeks, Effektiewe Koers van Beskerming, Nominale Koers van Beskerming en Handel Kaart.

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LIST OF ABBREVIATIONS

ACP	African Caribbean and Pacific
AGOA	African Growth and Opportunity Act
AoA	Agreement on Agriculture
APRM	African Peer Review Mechanism
BKB	Boeremakelaars Koöperatief Beperk
BLNS	Botswana, Lesotho, Namibia and Swaziland
BOS	Bureau of Statistics
CET	Common External Tariff
CIF	Cost, Insurance and Freight
CMA	Common Monetary Area
EC	European Communities
EFTA	European Free Trade Area
EPA	Economic Partnership Agreement
EPR	Effective Protection Rates
EU	European Union
FAO	Food Agriculture Organization
FTAs	Free Trade Areas
GATT	General Agreement on Trade and Tariffs
GDP	Gross Domestic Products
GEIS	General Export Incentives Scheme

GNP	Gross National Products
GSP	Generalized System of Preferences
HI	Hirschman Index
HS	Harmonized System
IFAD	International Fund for Agricultural Development.
IMF	International Monetary Fund
ITC	International Trade Centre
JBCC	Joint Bilateral Commission of Cooperation
LDC	Least Developed Countries
LPM	Livestock Products Marketing Services
MERCOSUR	Mercado Comun Del Sur
MFN	Most Favored Nation
MTICM	Ministry of Trade Industry Co-operatives and Marketing
NRP	Normal Rate of Protection
OECD	Organization for Economic Co-operation Development
PTA	Preferential Trade Area
RCA	Revealed Comparative Advantage
RoSADC	Rest of Southern African Development
RoW	Rest of the World
RSA	Republic of South Africa
SA	South Africa

SACU	Southern African Customs Union
SADC	Southern African Development Community
SARC	Southern African Resource Center
SITC	Standardized International Trade Classification
SSA	Sub-Saharan Africa
TIDCA	Trade and Investment Development Cooperation Agreement
TRQs	Tariff Rate Quotas
UN	United Nation
UNCOMTRADE	United Nations Commodity Trade
UNCTAD	United Nations Conference on Trade and Development
URAoA	Uruguay Round Agreement on Agriculture
USA	United State of America
USAID	United State Agency for International Development
WTO	World Trade Organization

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Since 1833, there were already handful traders in Lesotho; most of the traders were European origin with some Indians. In 1940's Agricultural marketing cooperatives were established because farmers felt that traders were charging too much and service provided was inadequate. This described that, farmers gained lower profit because they had no alternatives to avoid traders who bought at lower prices but sell goods and services to farmers at high prices that farmers could not afford from little cash income they get when selling wool and mohair to monopolistic traders. Farmers thought that by eliminating the middlemen (traders) marketing costs could be lowered which would result in a gain to them in the form of higher prices. The establishment of livestock Marketing Corporation was followed in the purpose of marketing wool and mohair directly to the European buyers in Europe. In 1978 the Livestock Products Marketing Services (LPMS) was established under the ministry of Agriculture so as to restore farmers' confidence and to revive their interest in livestock improvement through efficient marketing, also to act as the agent for farmers in dealing with brokers which is South Africa wool and mohair board (Mokitimi, 2000).

Trade analysis and trade policy analysis largely involves analyzing implications of trade policy instruments on production structures of economies at the national and global level. Trade policy instruments such as tariffs and quotas have both direct and indirect effects on the relative prices of commodities produced in a given country (Bahta, 2007). Lesotho's trade and trade related policies are mainly the responsibility of the Ministry of Trade, Industry, Co-operatives and Marketing including other related ministries and central bank. In 2002 Southern African Custom Union (SACU) agreement also provides for national body to be established in each member country, the body is in charge of SACU issues including tariff charges (Ntlopo, 2007).

As a Least Developed Country in Sub-Saharan Africa, Lesotho has privileged access to major markets. In the past the main privilege was that given by the Lome Convention now replaced by the Cotonou agreement, which allowed it free access to European markets.

Lesotho's trade regime stems from its membership of Southern African Customs Union (SACU), with free trade between members and common external tariffs (Department of Commerce, 2012). The government of Lesotho has indicated that it is liberalizing agricultural trade; this is mainly because of the pressure from the donors and commitments to the General Agreement on Trade and Tariffs (GATT) Uruguay Round Talks (Mokitimi, 2000).

Lesotho's exports policies are largely determined by external conditions including market access to South Africa, Southern African Development Community (SADC) as it is the member of SADC countries, United States and the European Union. Most of the items exported to South Africa (SA) are re-exported, with some element of value-adds undertaken in Lesotho. It is notable that Lesotho has benefited from a strong macro-economic outlook in South Africa in terms of exports. The fastest growing re-exports to SA are highly concentrated; example is wool and mohair which are the major agricultural commodities that are exported. The highest volume of exports was destined to Republic of South Africa (RSA) and the United States of America (USA) (Lesotho Bureau of Statistics, 2010).

Lesotho does not have sizeable exports destined for the Rest of Southern African Development Community (RoSADC), and the country's trade with the Rest of the world (RoW) is increasing faster than trade with its SADC partners. Country's regional and global trade relations might improve because of better integration through multi-lateral agreements that are already in place (Matlanyane and Maleleka, 2005).

1.2 Research Area

The study will cover Lesotho. Lesotho is one of the 15 Southern African countries that make up the Southern African Development Community (SADC). A very small country in terms of both geographical size and population, the kingdom of Lesotho is situated in the south eastern region

of Southern Africa with total land area of 30,355sq.km; it is an enclave surrounded by South Africa with the population of 2.2 million (Tsehlo, 2014).

Lesotho is a member of commonwealth and it is the only independent state in the world that lies entirely above 1,000 meters in elevation. Its lowest point of 1,400 meters is the highest in the world. Over 80 percent of the country lies above 1,800 meters. It lies between latitudes 28⁰ and 31⁰ south and longitudes 27⁰ and 30⁰ East, with varying height above sea level from 1500 to 1600 meters. About one quarter in the west is lowland country and the remaining three quarter being highlands (Seeiso, 2009).

Lesotho remains cooler throughout the year than other regions at the same latitude because of its altitude. Winters can be cold with the lowlands getting down to -7⁰c and the highlands to -18⁰c at times. Snow is common in the highlands between May and September. Climate is temperate with distinct of summer, autumn, spring and winter season. It is hot and wet in summer. Rainfall varies from around 600 millimeters in the lowland valleys to around 1,200 millimeters in the highlands, although drought and flood are increasingly common (Motsoari, 2012).

Lesotho is demarcated into distinct livelihood zones, namely: Lowlands, foothills, Senqu river valley and highlands. Agriculture in Lesotho is based on livestock production and crop production mainly maize and sorghum are grown. The most fertile lands are in the lowlands and foothills. The highlands and the Senqu river valley are suitable for rearing of livestock. Over 10 percent of Lesotho's land classes as arable land. Soil erosion is a big problem, due to flash floods, over farming and lack of trees. The main exports of Lesotho are water, diamonds, wool and mohair and garments from the textile factories around (Khethisa, 2012).

Figure 1.1 shows the map of Lesotho with ten districts and the agro ecological zones in which most of them are suitable areas for keeping sheep and goats due to their aridity. The agro ecological zones are divided into four zones (depending on the temperature of each area) being lowlands, highlands, Senqu river valley and foot hills. The figure also shows the enclave of Lesotho.

interact with the foreign traders and it controls how the farmers access export markets. The insufficient market structure is brought by inefficient market information dissemination (Daemane, 2014). Large numbers of developed countries dominating in the ‘global stars’ export categories make it extremely difficult for small developing countries like Lesotho to penetrate the market in some commodities (Nkholise, 2001). All the above attributes lead Lesotho to become vulnerable in terms of cash income for farmers to sustain the industry. As a result a decrease in Lesotho’s revenue and the economy of the country will be affected. The question is how trade policy can be adjusted to meet the standards in order to get rid of trade barriers?

1.4 Motivation

Given the importance of the wool and mohair sub-sector in Lesotho, answers to questions pertaining to the impact of trade policy and patterns in which agricultural commodities explored. This study, with the respect to the analysis of trade structure and pattern of wool and mohair export of Lesotho, has to be undertaken. According to Maama (2012) Lesotho’s government is clearly demonstrating its willingness and desire to further integrate their economy in the global arena. It is currently pursuing a number of initiatives including the establishment of souring plant where wool and mohair will be cleaned and exported directly to the relevant traders, so as to reduce double taxation of the commodities.

Trade structure and patterns involves trade policy, trade liberalization and trade agreements. Trade policy of a country refers to the set of policies which govern the external sector of its economy. In the Least developed countries like Lesotho, trade policy is one of the many economic instruments which are used to suit the requirements of economic growth. According to Koirala (2011) trade policy creates a conducive environment for the promotion of trade and business in order to make it competitive at international level, it minimizes trade deficit by increasing exports of value added product through linkages between imports and exports trade.

Wool and mohair are the most important agricultural exports in Lesotho. However the sub-sector is faced with socio-economic challenges. The sub-sector is not expanding to the fullest because the government is not giving the full support to the sub-sector to improve what the colonial

government (Great Britain) left. It favours a free market where private traders are very involved and marketing seemed to be more vibrant before independence and economic growth.

Farmers do not get subsidy in Lesotho, they get little supervision on how to improve their livestock and the cash income earned from the exports of wool and mohair reach them as small fraction due to taxations. All these problems hamper farmers to produce more quantity and quality wool and mohair. These problems became the motive to undertake this study with respect to the analysis of trade structure and patterns of wool and mohair export of Lesotho. This study will create awareness in the government, agricultural extension agents and farmers respectively about the prevailing situations in the wool and mohair sub-sector and how these challenges can be alleviated.

1.5 Objectives of the Study

The primary objective of the study is to analyze trade structure and pattern of the wool and mohair export of Lesotho. In order to meet the primary objective of this study several secondary objectives will be addressed. These are:

- To determine the contribution of wool and mohair to the economic growth of the country.
- To calculate trade policy indicators.
- To examine the protection provided to the industries by the entire structure of tariff.
- To explore the standardization of wool and mohair exports.
- To evaluate the importance of liberalization of wool and mohair.

1.6 Methodology and Data Used

The Lesotho agricultural trade data at 4-digit Standardized International Trade Classification (SITC) level and is used for the trade structure and pattern analysis. It includes two groups of agricultural commodities which are wool (SITC 5101) and mohair (SITC 5202). The study concentrates on the annual data for export, production and consumption of wool and mohair

from 2003-2012. Wool and mohair were selected in this study based on their relative importance of their contribution to the gross value of agricultural production, consumption and their tradability. Wool and mohair are the largest agricultural export commodities of Lesotho.

Data sources at the Ministry of Trade, Industry Co-operatives and Marketing and Boeremakelaars Koöperatief Beperk (BKB) which provide yearly information for the export, production and consumption of wool and mohair for the calculation of Revealed Comparative Advantage and the Hirschman Index. The Lesotho Bureau of Statistics and the United Nations Commodity Trade Statistics Database (UNCOMTRADE) provide world trade flow of wool and mohair and yearly statistics data in quantity and value. Trade Maps were sourced from the International Trade Centre and provide yearly statistical data on wool and mohair exports in quantity, volumes and values and trade partner countries. In order to calculate the Balassa Effective Rate of Protection (ERP) and Nominal Rate of Protection (NRP) an enterprise budget developed for the calendar year of 2013/2014 was used.

The broad definition of a trade indicator is an index or a ratio which can be used to describe and assess the state of structure and trade patterns of a particular country and can be used to monitor these flows and patterns over time. Indicators can and should be used towards evidence-based policy-making. In an effort to analyze trade structures and patterns of the wool and mohair export commodities of Lesotho different methodologies will be employed. The study will use Trade Maps, apply theoretical and empirical principles of the Revealed Comparative Advantage (RCA) measure, the Effective Rate of Protection methodology such as Effective Rate of Protection (ERP) and the Nominal Rate of Protection (NRP) and the Hirschman Index (HI) to better understand a pattern of production and trade (export) of wool and mohair in Lesotho and Trade Map to evaluate trade performance of the products through the growth in value, volume and quantities It will also be used to determine market destination of wool and mohair.

1.7 Chapter Outlines

The underlying concern of the study is to analyze trade structure and the pattern of the wool and mohair export of Lesotho. This thesis is organized in six chapters, including the present introductory chapter. The next chapter is devoted to present a review of relevant literature (focus on trade, trade policy, trade agreement to Lesotho regarding to wool and mohair). The third chapter discusses an overview of the wool and mohair sectors in Lesotho in terms of trends related to production, consumption and trade. Chapter four discusses the research methodology to be used, how the data was collected, the data source and methods of analysis of data including Revealed Comparative Advantage (RCA), Effective Protection Rates (EPR), Nominal Rate of Protection (NRP), and the Hirschman Index (HI) and Trade Map. Chapter five provides overall findings and discussion of the results and the last chapter discusses conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Trade is the transfer of the ownership of goods or services from one person or entity to another in exchange for other goods or services or for money. The producer has to create demand by producing to meet the trends in taste, form and place requirement for their products. Trade has now become a significant component of economic growth or development in every country. In order for the trade pattern or structure to flow smoothly, it involves trade agreements. This chapter provides a relevant literature, focusing on trade in general, trade policy and trade agreement, particularly in Lesotho with regard to wool and mohair. The chapter also reviews selected studies relevant to the methodology involved in the analysis of trade structure and pattern using Revealed Comparative Advantage (RCA), Effective Rate of Protection (ERP), Nominal Rate of Protection (NRP), Hirschman Index (HI) and Trade Map.

2.2 Trade and Agricultural Trade Policies

Trade can be a powerful engine for economic growth, poverty reduction, and development. However, harness that power is often difficult for developing countries, particularly the least developed ones, mainly because of domestic supply-side constraints such as lack of trade-related infrastructure and obstacles restraining their productive capacity. Trading globally gives consumers and countries the opportunity to be exposed to new markets and products (Moïse *et al.*, 2013).

According to Medin (2013) trade pattern has been clearly described in the new trade theory pioneered by Paul Krugman (1979). The theory emphasized the importance of economies of scale and market failures such as imperfect competition and externalities as driving forces behind trade, the theory provided a rationale for industrial policy. There are two strands within the new

theory. The first one emphasizes imperfect competition and strategic interaction, and there are economies of scale at the level of the individual firm. The second one places the emphasis on positive externalities, and there are often economies of scale at industry level. Externalities may be pure, stemming, for example, from technological factors such as knowledge spillovers or they can be pecuniary stemming from market access effects.

Agricultural trade policy is the course of action by government that is directed to the farm and agricultural markets. It involves a full range of decisions that influence individual and firms in deciding what, how and for whom to produce and trade. Agricultural trade policy is widely considered as an important contributor to developing countries' economic growth, poverty alleviation and food security (Natu and Masila, 2013).

Agricultural policy is of great significance to the developing countries, since so many of the rural poor are dependent on agriculture for their livelihood and the urban poor spend much of their incomes on food, the food are highly vulnerable to changes in the domestic prices of agricultural commodities. In developing countries, there has often been a policy bias against agriculture. It used to be thought that agriculture could make a positive contribution to economic development not only through productivity gains in agriculture that frees up labour for industry or savings generated by agriculture that can be invested elsewhere, but also by a deliberate policy of transferring resources from agriculture to other sectors, ordinarily discriminatory policy treatment, including implicit and explicit taxation of agriculture. These policies are modified in recognition of the need to mitigate the negative effects on the poor (Vanzetti *et al.*, 2004).

2.2.1 Southern Africa Trade and Agricultural Trade Policies

Southern Africa is trading less and less with itself. The new economic environment which was expected to emerge with the adoption of the trade protocol has not taken place; ironically exponential growth of the rest of the world has been witnessed. Agriculture is one of the dominant economic sectors and the largest employer of labour in Southern Africa. Agricultural products are also the most traded in the region and agricultural exports are a major foreign

exchange earner, contributing on average 13 percent to total export earnings, and contributing about 66 percent of value of intra-regional trade. There are some trade barriers in Southern Africa which are poor infrastructure, inadequately functioning agricultural market and often significant government influence on strategic markets leading to unilateral and politically motivated decisions such as export bans (External Communication and Relation Section, 2013).

In Southern Africa, trade in some food and agricultural products is particularly sensitive. This gives rise to exceptions to the principle of free movement of goods and in some instances multiple exceptions to the customs unions' common external tariff (CET), within Free Trade Areas (FTAs) the negotiation of market access for food and agricultural products is particularly sensitive, being subject to exclusions from tariff elimination commitments, tariff-rate quotas and special import licensing arrangements. The active use of agricultural trade policy tool is an important feature within all trade integration initiatives in Southern Africa (Technical Centre for Agricultural and Rural Cooperation, 2013).

2.2.2 Lesotho Trade and Agricultural Trade Policies

International service transactions are impeded by a variety of regulatory barriers, especially barriers to foreign direct investment and movement of the individual who provide services. These barriers may be designed to restrict the entry of service providers whether domestic or foreign in an economy (Stern *et al.*, 2010).

Trade policy is a way of identifying a country's competing interests in the economy. However due to its small size, Lesotho uses trade policy on the SACU revenue share and the government has limited discretion on key policy issues because of its membership in the South African currency (Rand) Common Monetary Area (CMA) and the Southern African Customs Union (SACU). Lesotho still applies the SACU common external tariff, currently determined by South Africa. Lesotho's export policies are largely determined by the external conditions, including

market access to South Africa, SADC, the United States and the European Union (SARC Department, 2013).

Agricultural protection continues to be the most contentious issue in the global trade negotiations. Protection for manufacturing products in both industrial and developing countries has declined significantly and overall trade reforms have been adopted in developing countries. Many government levied export taxes on agricultural products to generate revenues while protecting manufacturing through high tariffs and other import restrictions. These countries also used price controls, exchange rate policies and other restrictions to keep agricultural prices low for urban consumption. Many developing countries have moved from taxing agriculture to protecting it (Beghin and Aksoy, 2005).

Due to the stagnation of the Doha Round negotiations on agricultural trade reform policy, the future impact of World Trade Organization on African Caribbean and Pacific (ACP) countries remains uncertain. In any case, Least Developed countries (LDCs), which make up a large share of ACP countries, will be exempted from further tariff reduction commitments (Bertow and Schultheis, 2007).

Lesotho's government supports agriculture policy which includes protection for local farmers from foreign competition through import controls and other regulations on market participants. Local farmers are subsidized on inputs such fertilizers, seeds and some vaccines like sheep scab vaccine. It is moving agricultural production and marketing policies away from highly regulated inward-looking strategy towards a liberalized outward oriented market environment within an integrated regional economy (Kingdom of Lesotho, 2011).

2.3 Trade Agreements

Most countries get into the agreement on trade with the international bodies. An example, World Trade Organization (WTO). The expectation is that more predictable access to foreign markets with WTO membership as a seal of approval recognized by the international business community. The legal advantages of accessing rules based systems and of using the WTO

dispute settlement process are often mentioned as well. Countries that join the WTO benefit from better foreign access to the acceding nation's markets, specifically in terms of price and variety of imports, by binding national tariffs, committing to eliminate quotas on imports, and reforming other state measures. WTO membership enhances the credibility of acceding nation's policies and thus reduces the uncertainty faced by the private sector. It also improves important components of the national business environment, which in turn has sizeable domestic payoff (Richard, 2006).

Agricultural trade is the most distorted industry in the world. It is characterized by very high trade barriers, high levels of domestic support and export subsidies. The World Trade Organization (WTO) agreement (developed as part of the Uruguay Round of multi-lateral trade negotiations) was a major milestone for the global trading system for the first time. International rules were established to address some of the major distortions in agricultural trade. The agreement on agriculture eliminated import quotas bound all agricultural tariffs and imposed disciplines on domestic support measures (such as production subsidies) and export subsidies (Department of Agriculture Forestry and Fisheries, 2014).

Trade agreement on agriculture is made up of three pillars: Market access, export competition and domestic support. All WTO members except Least Developed Countries (LDCs) were required to make commitments in all these areas in order to liberalize agricultural trade. Ament (2006) described those three pillars as follows:

- **Market access:** - Market access was the first pillar of Agreements on Agriculture (AoA). Market access can be defined as the extent to which a country allows foreign products to be imported. Improving it was regarded during all WTO negotiations as crucial, without significant tariff cuts. It is improbable that other areas of free trade will be further liberalized. The market access pillar is made up of two main provisions such as tariffs and quotas. – In terms of tariffs, all existing fixed tariffs had to be bound. Bound tariffs could not be increased, and could only be reduced, if in accordance with the AoA. On the other hand non-tariff barriers had to be transferred into tariffs, this process is usually known as the tariffication process. This was necessary because tariffs

are more transparent, more predictable than non-tariff barriers and they allow consumers and producers to react to world price signals. In case of quotas, for products where there are no significant imports, developed countries must provide minimum access opportunities with less favorable tariff rate quotas must be established. If the volume of access at the time of implementation already exceeded the minimum access commitment, the 1995 volume had been established. – Tariff rate quotas resulting from minimum access commitment are to be allocated on a Most- Favored Nation (MFN) basis. That means it should be equally available to all countries. Tariff Rate Quotas (TRQs) have created new trading opportunities due to a number of implementation issues only about 60 percent of the potential trade under TRQs occurred.

- **Export competition:** - Export competition was a central issue in the agricultural negotiations of the Uruguay Round. The main aim of the negotiations concerning export competition was the reduction in export subsidies. Export subsidies allow countries to export goods at market prices lower than the domestic price. Export subsidization is prohibited for industrial goods. It is simply defined as dumping for agricultural products, however it is allowed. Export subsidies help the exporters enter markets they could not enter otherwise and it causes other, low cost producers and exporters to face a stiffer competition as the market prices of the subsidized products are driven down.
- **Domestic support:** Is the annual monetary support given by the government to agricultural producers either for the production of specific agricultural products, or in more general forms such as in infrastructures and research. The agreement on agriculture classifies the support types into two major categories. Those which are obviously trade distorting and those which are minimally trade distorting. According to the level of trade distortion the AoA created three boxes with different measures which are Green box, Blue box and. Amber box. These boxes are the three categories of domestic support illustrated in figure 2.1.

Figure 2.1 indicates categories of domestic government support or subsidy in the agricultural industry. Domestic support is categorized in three boxes. These boxes are describing trade distorting and minimally trade distorting in the agricultural industry.

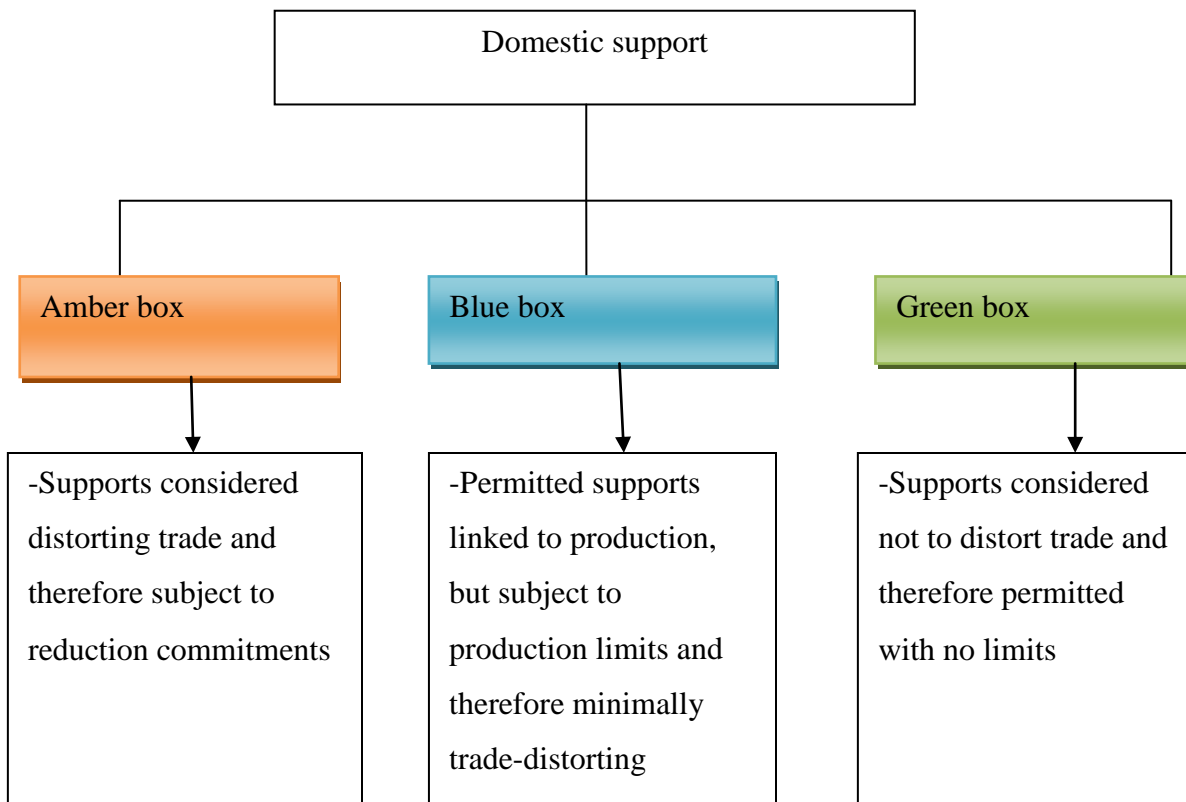


Figure 2.1: Classification of domestic support (Three boxes).

Source: Southern African Global Competitiveness Hub (2005).

Since the 1980's major attempts to liberalize the agricultural sector through the Uruguay Round Agreement on Agriculture (UR AoA) and to protect regimes around the world have been made, both through unilateral reform of tariffs and quantitative import restrictions and through undertakings within the Uruguay Round of multi-lateral trade negotiations. Developing countries did not gain as much as expected because of the ways in which rules have been implemented and these countries have strongly argued that market access opportunities have been greatly affected by increased protection and subsidies in the developing countries (Merlinda, 2003).

2.3.1 International Trade Agreement for Lesotho

Lesotho is a signatory to a variety of trade agreements which afford expanded access to regional and international markets. Promoting regional and international trade is the diversification of the manufacturing base, and trade arrangements are to expand market access for goods and services (Ministry of Trade and Industry, Co-operatives and Marketing, 2014).

As a member of the WTO, Lesotho is committed to the implementation of WTO agreements, including the progressive liberalization of trade. Lesotho is an active member of the Least Developed Countries (LDC) bloc, which is a formal grouping recognized by the WTO and the UN system and which works to integrate members' trade into multi-lateral trading system. This is a great challenge considering the enormous supply- side constraints and other limitations held; hence their need for preferential treatment. Lesotho is also a member of the Land Locked LDC group which lobbies for special consideration to be shown to exports-driven countries lacking their own sea-freight facilities (Ncube, 2012)

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Lesotho is member of World Trade Organization as well as other regional arrangements. It is also involved in the Cotonou Agreement which is the most comprehensive partnership agreement between developing countries and the European Union (EU). The agreement is said to have an impact on Lesotho's regional relationships including the relationship with SADC and SACU and the African Union (Rakoto, 2011).

Trade agreement negotiations between the European Free Trade Area (EFTA), the United States of America (USA), India, WTO, Doha Development Round and Mercado Comun Del Sur (MERCOSUR) continued in Lesotho. This indicates commitment to integrate with the rest of the world, thereby advancing economic development. This gives Lesotho duty and quota free markets to Europe for its products (Central Bank of Lesotho, 2012).

Countries in the common customs area are able to negotiate new Free Trade Area (FTA) agreements with third parties as a bloc together with SACU members. Lesotho has concluded FTA agreements with the European Free Trade Association (EFTA) states (Switzerland,

Norway, Iceland and Lichtenstein) and a Preferential Trade Agreement (PTA) with common market of the Southern Cone (MERCOSUR), comprising Argentina, Brazil, Uruguay and Paraguay. Lesotho is also a member of Southern African Customs Union-United States (SACU-US) Trade and Investment Development Cooperation Agreement (TIDCA). This agreement provides for cooperation between SACU and the US with a view to negotiating a future FTA (World Bank, 2010).

Lesotho is a member of the informal least developed countries (LDC) consultative group in the WTO. Lesotho as a LDC, benefits from unilateral duty-free access to the European Communities (EC) markets under everything. Like all other ACP countries, Lesotho is engaged in negotiations towards the Economic Partnership Agreement (EPA) with the EC as part of the SADC group. Lesotho's exports are in privileged positions vis-à-vis developed country markets. Under the Lomé Convention, its exports are given access to the EU markets. The Generalized System of Preferences in other developed markets provides a number of concessions, which make Lesotho exports very competitive. Lesotho also enjoys preferential access (quota and duty-free) to the lucrative Canadian markets of all eligible goods manufactured in Lesotho, as well as the highly concessionary Generalized System of Preferences (GSP) to Japanese, Nordic, and other developed markets. The United States historically provide a ready market for Lesotho's exports of apparel. A boon significantly enhanced by the African Growth and Opportunity Act (AGOA) which provides eligible African countries with duty-and quota-free access to US markets (Kingdom of Lesotho, 2009).

2.3.2 Regional Trade Agreement for Lesotho

Lesotho is a member of the Southern African Development Community (SADC), a grouping of 15 countries with a combined population of 257.7 million and cumulative GDP of US \$47.1 billion. Other members of SADC include South Africa, Zimbabwe, Zambia, Malawi, Madagascar, Tanzania, Mauritius, Seychelles, Mozambique, Botswana, Swaziland, Angola, Democratic Republic of Congo and Namibia. The principal aim of SADC is to co-ordinate and harmonize socio-economic policies and plans of its member states in order to ensure sustainable economic development and growth in the Southern African region Common Monetary Area

(CMA) and Southern African Development Union (SADU), and associated trade agreements provides opportunity to address constraints imposed by a small domestic market and for diversifying the country's export markets (Central bank of Lesotho, 2012).

Lesotho is further a member of Free Trade Area (FTAs). This eliminates tariff and non-tariff barriers to trade between the SADC member states and engaged into fully trade liberalization. Lesotho also involve in a number of governance related processes, including the African Peer Review Mechanism (APRM), which intend to improve governance on the African continent and also to overcome particular regional challenges (Department of Commerce, 2012).

Along with South Africa, Botswana, Namibia and Swaziland, Lesotho is a member of the Southern African Customs Union (SACU), the regional frame work for trade cooperation. Beyond being a custom union, SACU's aims are to advance the economic development of its member countries, to diversify their economies and to afford all parties equitable benefits arising from intra-union and international trade. Under the 1969 SACU Agreement, South Africa set main trade policy instruments for the whole SACU area, including Botswana, Lesotho, Namibia and Swaziland (BLNS). As a consequence, the common trade policy measures (tariffs and anti-dumping) have not always necessarily been the most appropriate for BLNS' economies (Scott, 2010).

Lesotho also has an important bilateral cooperation with the government of the Republic of South Africa, the Joint Bilateral Commission of Cooperation (JBCC). This agreement commits the two countries to a strategic partnership; its objective is to promote economic integration between the two states, with the aim of uplifting Lesotho from her current status of Least Developed Country (LDC) to that of a developing country. Trade agreement enables Lesotho to better integrate into the world markets (Tsehlo, 2014).

In order for Lesotho to be a competitive player in the trade arena, it has to take advantage of trade arrangements. These agreements encourage competition among producers and also lead to the economies of scale. The integration with other world bodies and regional integration that Lesotho has embarked upon can boost overall investment by reducing distortions and enlarging

markets for Lesotho's exports. This enhances the bargaining power and contributes to the economic growth and Lesotho has duty-free access to the SACU markets and some duty concessions in SADC member states (Central Bank of Lesotho, 2012).

2.4 Trade Liberalization

Trade liberalization can be explained as the relaxation, or elimination of tariffs and removal of duties or quotas on exports, alteration in non-tariff barriers such as import-quotas and quantitative restrictions, change in licensing and direct allocation of foreign exchange and in specific regulations of products and removal or relaxation of export subsidies (Fadeyi, 2013).

The liberalization of trade has led to a massive expansion in the growth of the world trade relative to world output. While world output (or GDP) has expanded fivefold, the volume of world trade has grown 16 times at an average compound rate of just over 7 percent per annum (Thirlwall, 2000).

Trade liberalization under the Uruguay Round includes not only the reduction of tariffs and calculation of tariffs of agriculture; but also the phasing out of the General Export Incentives Scheme (GEIS). As the consequence, countries may benefit from liberalization of their own domestic barriers and liberalization of the trade barriers of their trading partners (Stern *et al.*, 2010).

Most of the African farmers have faced the world's heaviest rates of agricultural taxation. African farmers were taxed explicitly through producer price fixing, export taxes and agricultural inputs. They were also taxed implicitly through overvalued exchange rates which reduced the prices they obtained for their exports through high levels of industrial protection which raised consumer prices. Therefore liberalization is more needed to create trade openness and remedy the market failure (Ingco and Winters, 2001).

2.4.1 Trade Liberalization in Lesotho

Lesotho is a member of preferential trade Area (PTA) for Eastern and Southern African States, in which the trade integration was promoted, tariffs were eliminated and a common market was

established with a common external tariff and promotes cooperation on agriculture and investment policies (Maleleka *et al.*, 2006).

Lesotho is a liberalized economy and therefore it has two main objectives aimed at achieving the country's trade agenda: access to foreign markets and enhanced export base. It is a landlocked country which is reliant on South Africa, Southern African countries, and other trading partners in the region and beyond, from the developing South to the developed North, in order to enhance its trade links. This means that Lesotho is highly dependent on international trade. Trade openness has increased overtime in major markets. The ratio of exports and imports in goods and services as percentage of GDP was 192.1 in 2009. It averaged 161.7 percent during 2005-2008, 157.8 percent in 2000-2004, and 141.9 percent during 1995-1999 including the agricultural products (Rakoto, 2011 and UNCTAD, 2012).

Since 1995, the entry into force of the Uruguay Round Agreements has facilitated an increase in trade and investment for the service sectors in many countries which undertook specific General Agreement on Trade Services (GATS) commitments to open their service economies. Lesotho is a founding member of WTO. As such it took commitments on trade in services at a multi-lateral level for the first time during the Uruguay Round. These commitments were undertaken as part of the first round at a multi-lateral services negotiation which commenced in 1986. The current round of market access in which Lesotho has engaged in order to participate in the trade liberalization is the Doha Round, which aims to achieve progressively higher levels of liberalization of trade in services through the reduction or elimination of the adverse effects of measures which hamper trade in order to provide market access. These negotiations provide developing countries with the opportunity to achieve commercially meaningful market access commitments sectors and modes that are of interest to them and progressive situations and priorities (UNCTAD, 2013).

2.4.2 Principles of Trade Liberalization

Many of the developing countries were also integrated into the multi-lateral trading system through membership of general agreement on trade and tariffs (GATT) and the World Trade

Organization (WTO), so that tariffs and quantitative can be abolished and protection becomes more transparent, measurable and predictable. Therefore the principles of liberalization are as follow (English *et al.*, 2002):

- **Most- favored nation:** this is one of the fundamental principles for securing non-discrimination in international trade. Member countries give the most favorable treatment accorded to any of their trading partners to all the other members immediately and unconditionally.
- **National treatment:** this principle stipulates that services and service providers from another country may be accorded treatment no less favorable than that accorded to like services and service providers of national origin. This includes nationality and permanent residence requirements to discriminatory practices with regard to fiscal measures, access to local credit and foreign exchange and limitations of the type and services that may be rendered by foreign suppliers and many more.
- **No local presence requirement:** many countries require a local presence as a condition for foreign individuals or juridical persons wishing to provide services within their territory. This is usually the case with services that require close supervision to guarantee better consumer protection.
- **Non-quantitative and Non-discriminatory restrictions:** technical considerations or market size may induce government to establish quantitative non-discriminatory restrictions on the rendering of given services.

2.4.3 Importance of Trade Liberalization

McGuire (2002) reported that developing countries benefits from trade liberalization by gaining market access and exporting goods or services in which they have relative strength or comparative advantage. Access to Foreign Service markets is very important for the developing countries to enable them to improve their export earnings as well as increasing the efficiency in

their own economies so as to mobilize resources for the development. Trade liberalization has increased international trade in goods and services and is providing many export opportunities for the developing countries.

Resulting integration of the world economy has raised living around the world, most developing countries have shared in this prosperity and incomes have risen dramatically. As a group, developing countries have become much more important in world trade and they now account for one third of the world trade (Kingdom of Lesotho, 2011).

Freeing trade frequently benefits the poor especially developing countries can ill-afford the large implicit subsidies, often channeled to the narrow privileged interests that trade protection provides. There is a need to further liberalize trade more especially in both industrial and developing countries particularly in agricultural products (IMF, 2001).

According to Akyuz (2005) another objective of trade liberalization is that, whatever their initial positions, countries should lower their tariffs over time in successive rounds. Accordingly, a successful conclusion of the Doha Round is expected to include lower tariffs for the industrial products, coming on top of large reductions already committed by developing countries during the Uruguay Round. Indeed, an overarching objective pursued by some of the most advantage countries is indeed a rapid convergence to free trade.

2.5 Level of Tariffs Protection

The conversion of non-tariff barriers to tariffs under the Uruguay Round Agreement on agriculture was an important step forward but in most industrial and developing countries, average agricultural tariffs are much higher than average tariffs for non-agricultural products and continue to restrict trade (Beghin and Aksoy, 2005). The level of tariffs protection discussed as follows:

- **Tariff Escalation:** protecting escalation with the level of processing in almost all countries and across all products. Escalation slows diversification into value added and

processed products. The manufacturing component of agriculture and food processing has a very high rate of protection. Tariff escalation occurs in all types of products, not just those produced in industrial countries. Data on products with low tariffs on raw commodities both traditional products and new products, show that tariff escalation is common to both. Tariffs are extremely low on the raw stages of traditional products, whereas the final stages and processed products have extremely high tariffs.

- **Tariff rate quotas:** tariff rate quotas, designed to ensure some degree of market access despite protection, have resulted in more completed tariff regimes. While the number of tariff lines under tariff quotas is small, these lines cover some of the main commodities produced in Organization for Economic Co-operation and Development (OECD) countries. According to OECD data, almost 28 percent of domestic agricultural production is protected by tariff rate quotas. Rate ranges from a high of 68 percent in Hungary to 38 percent in the European Union and 26 percent in the United States to 13 percent in Japan, Australia and New Zealand have no tariff rate quotas.
- **Export subsidies:** although lower tariffs and the move toward direct production subsidies are beginning to reduce the need for export subsidies in agriculture have been illegal on non-agricultural products since 1955, export subsidies continue to distort world markets. The European Union accounts for almost of 90 percent of all OECD export subsidies. The Uruguay Round Agreement on Agriculture placed limits on export subsidies for individual commodities but allowed some flexibility. With usage levels low in the early implementation period, when world prices were high, several countries carried forward unused export subsidy credits for later use. Circumvention through the subsidy elements of export credits, export restrictions and revenue-pooling arrangements in major products, is a concern.

2.5.1 Lesotho Protection against Tariff

Lesotho is participating in the regional trade agreement; the focus is to be on the reduction of the costs of trading with South Africa and other SACU partners through the removal of various

remaining barriers to trade. Lesotho can use its integration in the SACU region as a spring board to greater integration into the world economy, inter alia by using the new democratic SACU structure to encourage greater liberalization of the common external tariff and to limit non-tariff barriers, as well as encouraging regional cooperation on trade- facilitating measures (Kingdom of Lesotho, 2011).

As a member of the Southern African Customs Union (SACU), Lesotho applies the Common External Tariff (CET) of the SACU. The SACU's imports in general face lower tariff rates than those of similar regimes in Sub- Saharan Africa (SSA). In line with the SACU's CET, Lesotho's average Most Favored Nation (MFN) applied tariff is 7.5 percent. The country's average MFN applied tariff includes ad valorem equivalents of specific tariffs and has remained essentially unchanged over the past few years and is 7.8 percent, well below that of an average SSA (12.4 percent) or, lower- middle- income (11.4 percent) country. Based on its MFN applied tariff, it ranks 80th out of 181 countries (where 1st is least restrictive) (World Bank, 2010).

Although the government began liberalizing agricultural trade in the mid-1990's, in particular removing quantitative restrictions on the imports of food stuffs, tariff protection in the agricultural sector is more restrictive than in non- agricultural sector (9.4 percent versus 7.5 percent). A major clothing exporter itself, Lesotho imposes its maximum MFN tariff, taking into account ad valorem equivalents of specific tariffs (excluding alcohol and tobacco) of 130.9 percent on worn clothing and clothing accessories. The country has substantial trade tariffs of 70.8 percent. Tariff is a tax imposed on a product when it is imported into the country and it takes the form of fixed percentage (Scott, 2007).

Lesotho enjoys very favorable access to world markets, with its exports facing a low weighted average tariff including a preference of 0.04 percent from the rest of the world, compared to its SSA and lower and middle income comparators' average of 3.5 percent and 2.9 percent, respectively (US Department of commerce, 2011).

Table 2.1 indicates tariff percentage of Lesotho applied in common with SACU. Different tariff percentages are applied for different goods including wool. Tariff applied for wool is not very high as Lesotho has the agreements with SACU for the duty free.

Table 2.1: Tariff percentage of Lesotho

Tariff (percent ad valorem) for textiles, Apparel, Foot wear and travel goods.	HS chapter sub heading	Tariff Rate Range (%)
Yarn		
-Silk	5003-5006	0
-Wool	5105-5110	0-15
-Cotton	5204-5207	15
-Other vegetable fiber	5306-5308	0
-Man-made fiber	5401-5406/5501-5511	0-15
Woven fabric		
-Silk	5007	0-22
-Wool	5111-5113	22
-Cotton	5208-5212	22
-Other vegetable fiber	5309-5311	0-22
-Man-made fiber	5407-5408/5512-5516	20-22
-Knit fabric	60	0-22
-Non-woven fabric	5603	10-20
-Industrial fabric	59	0-22
-Apparel	61-62	0-45
-Home furnishings including bed, bath, kitchen, linens, etc.	63	0-30
-Carpet	57	5-30
-Foot wear	64	0-30
-Travel good	4202	30

Source: International Trade Administration (2011).

2.6 Empirical Assessment of Trade Structure and Pattern Using Different Indexes

Researchers have employed a number of measures of trade performance to study the structure and determinants of a country's foreign trade. Commonly used measures are indices of trade intensity which includes the Comparative Advantage Index, Revealed Comparative Advantage, the Effective Rate of Protection, the Nominal Rate of Protection, the Hirschman Index and Trade Map are used to measure trade performance.

Analysis of gains from international trade normally begins with the concept of comparative advantage which dates back to British Economist David Ricardo (1817). The comparative advantage concept highlights the proposition that relative productivity between countries is more important than absolute productivity in determining trade patterns. David Ricardo presented the principle of comparative advantage which is one of the most important theories and it has been widely used to analyze trade patterns. Comparative advantage pioneered by Ricardo indicated that. Even if one nation is less efficient than the other nation in production of both commodities, there is still a basis for mutually beneficial trade. The nation should specialize in the production and export of the commodity in which the absolute disadvantage is smaller and import the commodity in which the absolute disadvantage is greater (Siggel, 2007).

Ricardo took Adam Smith's theory one step further by exploring what might happen when one country has an absolute advantage in the production of all goods. Adam Smith (1776) pioneered the concept that trade between two countries is based on absolute advantage. This implies that a country has an absolute advantage in the production of a product when it is more efficient than any other country in producing it (Thirlwall, 2000).

Withanawasam *et al.* (2006) indicated the strict assumption of Ricardian model as follows:

- Fixed endowment of (identical) resources.
- Factors of production are completely mobile between alternative uses within a country.
- Factors of production are completely externally immobile.

- The level of technology is fixed for both countries.
- Unit cost of production is constant.
- Perfect competition at domestic market.
- A labor theory of value is employed in the model.
- Internal and external transportation costs are zero.
- No government-imposed obstacles to economic activity.
- For simple analysis: a 2-country, 2-commodity world.
-

Despite the powerful influence and usefulness of the concept of comparative advantage, two major problems arise when trying to measure the comparative advantage in analyzing trade performance. Sanidas and Shin (2010), indicated that the first problem that arise is that the concept of comparative advantage is in nature associated with unobservable autarkic variables, such as autarkic prices or autarkic production costs. The second problem is determining comparative advantage in the world with more than two countries, two commodities, and two factors-cum-two-country hypothetical economies. That is some measure that can provide more information than simply whether or not a given country has Revealed Comparative Advantage in a given commodity when needed.

Empirical researchers have been looking for the second-best way to measure comparative advantage by using available post-trade data such as exports and imports, which is a so-called Revealed Comparative Advantage (RCA) index in order to provide proper information in respect to comparative advantage. Revealed Comparative Advantage Index is used in this study for the analysis of trade patterns. It is discussed in the next section in detail.

2.7 Revealed Comparative Advantage: Application

Measures focusing on market share are Revealed Comparative Advantage: which is the appropriate measure used in this study. Revealed Comparative Advantage: is proposed by

Balassa (1965). According to this indicator, a country has comparative in a particular product if it exports of product, relative to world export of the same product, is larger than the country's market share in total exports. One of the empirical analysis to measure the extent of international trade specialization in different sectors or product groups can be achieved by way of evaluating a country's exports of a product in a global context, in particular, the Revealed Comparative Advantage (RCA): measures a product's share in a country's total trade basket relative to the share of that product in global trade (Sandrey *et al.*, 2005).

The idea of Balassa index is to compare the performance of a country in one industry to the performance of a reference group of countries using export flows. In doing so the Balassa Index mixes up comparative advantage driven with other determinants of trade flows in approximating the Revealed Comparative Advantage. The Ricardian Comparative Advantage, indeed, is based on the intrinsic (ex-ante) nature of the country in being relatively more efficient in the production of a certain good (Leromain and Orefice, 2013 and Kennedy and Koo, 2005).

2.7.1 Implications of Revealed Comparative Advantage (RCA)

There are several reasons why Revealed Comparative Advantage is used model in the issue of trade in different countries. Yeats and Francis (2003) indicated that several points should be noted concerning the application of the Revealed Comparative Advantage concept. First, the utility of the index is considerably reduced in cases where significant export subsidies or other related incentives are extended to specific products or where high tariffs or other trade barriers exist. In such cases the RCA index value may largely reflect. They further indicated the implications of the Revealed Comparative Advantage as follows:

- Measures of Revealed Comparative Advantage (RCA) have been used to help assess a country's export prospects. One question they used to address this with is whether a country is in the process of extending the number of products in which it has a trade

potential, as opposed to situations where the number of products that can be competitively exported is static or even declining.

- These indices have also been used to help identify situations where potentially beneficial bilateral trading opportunities exist. These are most likely in situations where two countries have different RCA profiles. Countries with similar RCA profiles, like many of those in Africa, are unlikely to have high intra-trade shares because they export similar types of goods.
- Finally, analysis of the Revealed Comparative Advantage of countries with broadly similar economic endowments can potentially help a specific country to identify new products it might competitively export.

Revealed Comparative Advantage (RCA) is used in this study to analyze the comparative advantage and export pattern of wool and mohair and provides valuable information for trade policy of Lesotho.

2.8 Application of Effective Rate of Protection (ERP)

Level of protection in agricultural and food products trade among countries, in terms of tariffs is still quite high. Market access, therefore continues to be one of the major bones of contention within the World Trade Organization (WTO) negotiations on agriculture. Countries with a comparative advantage in agriculture, as the Cairns group, underline the fact that while trade of manufacturing goods has been liberalized. Many Organizations for Economic Co-operation and Development (OECD) countries maintain restrictions on the import of agricultural and food products. One measure gauging the effects of border policies is the Effective Rate of Protection (ERP) that seeks to capture a single figure support to productive factors from a complex tariff structure (Antimiani, 2004).

The concept of Effective Rate of Protection (ERP) was first introduced by Barber (1955) and extensively applied and developed. The idea was to shed light on allocative effects of tariff

systems. In addition to mapping nominal tariff rates imposed on commodities, input and output relationships between commodities then have to be accounted for. The theory of effective protection therefore argues that to determine the protective effect of a tariff one must not look at the size of the nominal tariff, but at the proportionate change in the value added of the protected commodity which occurs as a result of the tariff imposed on the good and its inputs (Milner and Greenaway, 2006).

Effective Rate of Protection (ERP) is a measure of how tariff structure affects value added in an industry. The ERP is very important to producers because it indicates the degree of protection provided to domestic production of import competing goods. The ERP measure has been widely used both by governments and by international organizations such as the World Bank, the OECD, and the World Trade Organization in trade policy negotiations to determine the level of protection to provide to domestic industries (Diakantoni and Escalth, 2012).

2.8.1 Properties of Effective Rate of Protection

Diakantoni and Escalth (2012) describe properties of Effective Rate of Protection as follows:

- Effective rate of protection for an industry can be negative, even if its output benefits from a strictly positive nominal rate of protection.
- The Effective Rate of Protection will be less than the Nominal Protection (and even negative), if the Nominal Protection on an activity's output is smaller than on its inputs.
- Effective Rate of Protection will be higher if (i) the higher nominal tariff the output and lower nominal protection on the inputs is required in production, and (ii) if the smaller the value added at world prices.
- If the inputs required are all non- tradable (for example, service), the Effective Rate of Protection is higher than nominal protection when the Balassa formula is used.
- If the nominal tariff schedule is flat (all tariffs are similar across all sectors of activity), then the Effective Rate of Protection is equal to the nominal protection and identical for all products.

2.9 Nominal Rate of Protection

A positive effective rate of protection creates an anti- export bias, as the value added obtained by selling on the domestic market is higher than selling at international prices, even when the exporter is able to get reimbursed from the tax duties paid on the corresponding imported inputs. In principle, such a measure would look at the relationship between the prevailing domestic price of a good and the price of the same good that would be observed under free trade, which is an undistorted market. The NRP is an estimation of the equivalent tariff that would lead to the total disparity between domestic and international prices, over and beyond the known price raising effect of the import tariff. In practice therefore, the measure is derived from the difference between the domestic price of a good and the observable world price of a comparable good (USAID, 2008).

In this study Effective Rate of Protection together with Nominal Rate of Protection are used to examine the effect of Lesotho trade policy on wool and mohair.

2.10 Export Diversification Index

Export diversification is variously defined as the change in the composition of a country's existing export product mix or export destination, or as the spread of production over many sectors. Conceptually, the definition is derived from the way diversification is measured. It is preferred to use the concentration indices to measure the extent to which country's export is diversified. The concentration indices measures whether the majority of a country's export earnings comes from a small range of export products (indication of export concentration) or if the source of earnings are more evenly spread across a given range of export goods (indication of export diversification). Diversification of exports can be measured by calculating the concentration indices (Balavac, 2012).

According to Bahta *et al.* (2013) export diversification is usually held to be important for the developing countries because many developing countries are often highly dependent on a relatively a few primary commodities for their export earnings. Unstable prices for these commodities may be subjected to a developing country exporter to serious terms of trade shocks. Since the co-variation in individual commodity prices is less than perfect, diversification into new primary export product is generally viewed as positive development. The strongest positive effects are normally associated with diversification into manufactured goods, and benefits include higher and more stable export earnings, job creation and learning effects, and the development of new skills and infrastructure that would facilitate the development to even newer export products.

The most commonly used index to measure export diversification is the Hirshman Index. This index is a measure of market concentrate named after ORRIS Herfindahl, who applied the index in his doctoral dissertation in 1950 and Albert Hirschman who presented the index in a book in 1945. The index is widely used to measure market diversification and market concentration (Chen and Godager, 2011). This study use concentration indices, especially Hirschman Index with the aim of assessing export performance and competitiveness of the wool and mohair sub-sector of Lesotho.

2.11 Trade Map

The International Trade Centre has created a range of market analysis tools for the developing countries which are Trade Map, Market Access Map, Investment Map and Standards Map to help to examine users examine the export and import statistics of 220 countries and territories to better understand supply and demand trends for around 5,300 internationally traded products. Developing countries can use these tools to help grow their exports by identifying opportunities for product and market diversification (Gonzalez, 2013). In this study the market analysis tool used is Trade Map.

Trade Map is one of the market analysis tools developed by the International Trade Centre (ITC) to support the need of exporters, trade support institutions, trade police markers and academic institutions in developing countries. Trade Map is based on the Harmonized System (HS). Trade Map provides both values and quantities for the trade flows of goods. The currency used in trade map by default is the US dollar. Trade data is available not only for countries that report their own trade data, but also for the countries that do not report national trade statistics to the United Nations Community Trade Statistics Database (UN COMTRADE) or ITC. The trade of these countries has been reconstructed on the basis of data reported by partner countries, the so-called mirror statistics even though it has its shortcomings, it generate a wealth of information, which would otherwise be unavailable (ITC, 2013).

2.11.1 Importance of Trade Map

According to the Division of Market Development (2014) Trade Map provides very important information to the user very quickly and easily as follows:

- Analyze current export performance: examine the performance and dynamics of a country's export market for any product or service, identify the number and size of export markets and the concentration of exports and also highlights countries where market share has increased.
- Identify promising export markets: view the world's major importing countries for a specific product, with indicators illustrating concentration and growth rate of imports in each markets.
- Assess the level of competition in the global market: competing countries exporting the same product are ranked in terms of value of exports and availability of additional indicators on quantities, growth and market share.
- Find information on the average tariffs applied by countries to the import of specific product from specific partner countries: Market Access Map provides tariff-line market access information such as ad valorem equivalents and specific tariffs as well as tariff

rate quotas, Most Favored Nation and preferential tariffs applied under bilateral and regional trade agreements.

- Identify new supplying markets: countries exporting a product both to the world and to a specific market are ranked against one another this allowing direct comparison of current and potential national suppliers.
- Access National trade performance: make an overall evaluation of national trade performance and identify sectors and product or services in terms of their potential for investment and trade promotion.

In this study Trade Map is used to examine export performance and identifying promising market for wool and mohair of Lesotho.

2.12 Summary

This chapter provided the relevant literature review on the trade, trade policies, trade agreements especially trade agreements on agriculture globally and the agreements related to Lesotho as the study area. Trade liberalization worldwide, trade liberalization in Lesotho, principles and importance of trade liberalization and levels of tariff protection were also discussed. The chapter also reviewed different literature related to the methodology involved in the analysis of trade structure and pattern using Revealed Comparative Advantage, Effective Rate of Protection, Nominal Rate of Protection, Trade Map and the Hirschman Index.

Trade has acted as an important engine of growth for countries at different stages of development, not only by contributing to a more efficient allocation of resources within countries, but also by transmitting growth from one part of the world to another. There are static and dynamic gains from trade between countries but there is nothing in the theory of trade, which says that the gains are equitably distributed.

Lesotho is classified as a Least Developed Country. As a member of SACU she is bound to implement the same tariff duties on imports like other members as there is a relatively free

movement of goods within the customs union. SACU countries actively participate in WTO meetings and most of the members have permanent offices in Geneva, Switzerland.

Agricultural trade liberalization is the major concern of developing countries including Lesotho. The expected welfare gains are huge. Much is at stake, for both developed and developing countries. During the Uruguay Round negotiations the process of agricultural trade liberalization started. WTO member countries agreed on a set of measures aiming to liberalize the agricultural sector. However expectations were greater than the result. Developing countries continued to apply trade distorting measures.

CHAPTER THREE

OVERVIEW OF WOOL AND MOHAIR SUB-SECTOR IN LESOTHO

3.1 Introduction

The agricultural industry is dominated by sheep and goats in Lesotho, which are mainly kept for wool and mohair. Sheep and goats are very important in both commercial and subsistence farming in Lesotho and they are highly concentrated in the highlands where wool and mohair growers concurrently increase. All the production of wool and mohair are in the hands of smallholder farmers and most of these farmers are in the mountain areas (IMF, 2012 and Chadzingwa, 2007).

Most of the wool and mohair produced is for export, primarily to the South African market, although some is also used by the local producers of tapestries and knitwear. Output has increased substantially over the past decade, at an average of 6.3 percent per year for mohair and 7.2 percent per year of wool. Lesotho's national wool and mohair growers association promotes Angora and Merino farming in the country. Wool and Mohair industry faces the challenges of producing the quality animal products that meet the required market standard (Lesotho review, 2011).

More than 28,000 smallholder producers have their sheep and goats shorn. Wool and mohair are marketed each year. About 1.2 million sheep and 500,000 goats were shorn and their fleeces were marketed on the international market. Individual cheque payments were sent to more than 32,000 smallholder producers for the total value of US\$ 20 million (Rath *et al.*, 2014).

Lesotho's sheep and goats population stands at just over 2 million heads. The main breed of sheep in Lesotho is the indigenous Merino, whereas the goat breed is the Angora breed both of which are well adapted to the harsh local conditions. Table 3.1 shows the distribution of sheep and goats in the ten districts of Lesotho by the agricultural year of 2010/2011. The Mokhotlong

district had the highest number of sheep and goats as compared to the other districts. It had 377,140 sheep and 145,290 goats (Lesotho Bureau of Statistics, 2011).

Table 3.1: Number of sheep and goats distributed in the ten districts in 2010/2011 agricultural year

Districts	Sheep	Goats
Botha-Bothe	86,508	55,619
Leribe	181,421	95,738
Berea	90,462	65,907
Maseru	105,685	86,378
Mafeteng	133,631	49,336
Mohale's Hoek	137,086	89,585
Quthing	118,214	106,451
Qacha's Nek	141,592	36,967
Mokhotlong	377,140	145,290
Thaba-Tseka	180,503	82,746
Lesotho	1,552,241	814,018

Source: Lesotho Bureau of Statistics (BOS) (2011).

3.2 Wool Production and Consumption in Lesotho

Wool sheep are very important in the country. Merino sheep are mainly kept for the production of wool and meat. Wool sheep found their way into Lesotho from raids on flocks kept by the white settlers in the Orange Free State. Some were brought in by Basotho working on white settler farms who received sheep in lieu of wages (IFAD, 2014).

Wool is widely traded as a non- perishable commodity in more than 50 percent of the world and currently traded on the international market by comparison. Wool is not a highly localized commodity. Factors employed in the production of wool can be found almost anywhere. Wool has a long and distinguished history that transcends cultural differences. An examination of its past may reveal some interesting implications for agriculture as a whole (Leishman *et al.*, 2013).

Wool production in Lesotho is very high and it contributes to the living standards of the livelihood in the rural areas as their lives are highly depended on the production of wool. Different districts in Lesotho are producing in the higher rates to meet the needs of the farmers.

Table 3.2 shows the leading districts in the production of wool, sheep concentrations in the different regions and consumption of wool. Most of the wool produced and sheep concentrated in the mountains and foothills where the land is not arable. Mokhotlong seems to be the leading district with the production of wool by 681, 546.3 kilograms and consumed clean wool of 411, 517.7 kilograms followed by Maseru 596, 059.5 kilograms production with 359, 483.5kilograms consumed wool, Thaba-Tseka 530, 127.7 kilograms wool produced with 315,903.1kilograms consumed wool and Quthing 387, 779.0 kilograms wool produced with 235,381.9kilograms consumed wool and the other districts followed respectively.

Table 3.2: Lesotho wool productions in kilograms and consumption per district.

Districts	Total sheep	Net mass (kg)	Consumed Clean mass (kg)	Clean yield %
Berea	54580	159 459.5	88 535.0	55.5
Butha-Buthe	90813	245 045.3	146 713.4	59.9
Leribe	111204	305 999.3	182 283.8	59.6
Mokhotlong	221711	681 546.3	411 517.7	60.4
Quthing	140925	387 779.0	235 381.9	60.7
Mohales'Hoek	104885	277 143.0	160 060.8	57.8
Maseru	240109	596 059.5	359 483.5	60.3
Qachas'Nek	94973	220 270.0	123 527.4	56.1
Mafeteng	80028	196 364.0	106 920.2	54.5
Thaba-Tseka	223975	530 127.7	315 903.1	59.6
Total	1363203.0	3599 793.6	2130 326.6	58.0

Source: Lesotho Bureau of Statistics (2013) and BKB Fibretrack (2013).

In table 3.3 the number of sheep shorn and wool production increased for the period of ten years from 2003/2004 to 2012/2013 by 649 733 sheep shorn to 1363 203 sheep shorn and the yield of

wool ranged from 1755 718 to 3599 794 kilograms of wool harvested. The table shows that the industry is growing as wool becomes Lesotho' major agricultural export. Most of the farmers in the remote mountain villages of Lesotho rely for their survival on income from the wool of their sheep (Ministry of Trade Industry Co-operatives and Marketing, 2013).

Table 3.3: Total number of sheep shorn in Lesotho and the yield for the period of ten years.

years	Total sheep shorn	Total Net Mass (kg)
2003/2004	649 733	1755 718
2004/2005	703 970	2012 428
2005/2006	777 425	2224 858
2006/2007	820 694	2193 966
2007/2008	957 457	2573 451
2008/2009	1084 718	3080 304
2009/2010	1113 344	2943 764
2010/2011	1169 439	3235 023
2011/2012	1258 151	3320 422
2012/2013	1363 203	3599 794

Source: Ministry of Trade Industry Co-operatives and Marketing (2013).

3.3 Mohair Production and Consumption in Lesotho

According to IFAD (2014) Angora goats are mostly from the Cape. They are kept for the production of mohair and meat. They came into Lesotho under the similar channels as Merino sheep. They found their way into Lesotho from raids on flocks kept by white settlers in the Orange Free State, some goats were brought in by Basotho working in the white settler farms received them as their wages while others obtained them through theft.

Lesotho's production of mohair increased in the period of 1990 to 2009 by 25 percent as compared to the other leading fiber producing countries such as the United States of America which declined by 93.2 percent and South Africa that declined by 74.3 percent. The market share of Lesotho in the production of mohair increased from 7.3 percent in 2000 to 14.3 percent in 2009 and this has made Lesotho the second largest producer of mohair in the world and therefore

the United States of America is just behind Lesotho in terms of production and they are the biggest competitors with South Africa in the mohair industry (ABSA, 2011).

In table 3.4: Mokhotlong district is still the leading district with the production of mohair by 96, 232.2 kilograms with 77, 543.9: kilograms consumed mohair followed by Maseru with 88, 263.2 kilograms with 71,519.7: kilograms consumed mohair, Thaba-Tseka 74, 056.0 kilograms with 59,874.3 kilograms consumed mohair and other districts follow respectively.

Table 3.4: Production of mohair and consumption concentration by the districts of Lesotho.

Districts	Total goats	Net mass (kg)	Consumed clean mass (kg)	Clean yield %
Berea	21300	17 861.0	14 346.0	80.3
Butha-Buthe	47100	38 462.7	31 270.2	81.3
Leribe	46547	38 533.4	30 940.1	80.3
Mokhotlong	84325	96 232.2	77 543.9	80.6
Quthing	50464	36 714.2	29 400.7	80.1
Mohales'Hoek	55265	40 161.1	32 883.9	81.9
Maseru	100992	88 263.2	71 519.7	81.0
Qachas'Nek	34815	26 631.2	21 776.3	81.8
Mafeteng	15216	15 214.7	12 506.5	82.2
Thaba-Tseka	80601	74 056.0	59 874.3	80.9
Total	536625	472 131.7	382 061.5	81.0

Source: Lesotho bureau of statistics (2013) and BKB Fibretrack (2013).

The number of goats shorn and mohair harvested in the ten consecutive agricultural years increased, as shown in the table 3.5. The total number of goats shorn were 316 385 goats from 2003/2004 to 536 625 goats in 2012/2013. The yield of mohair was 268 680 kilograms from 2003/2004 and 472 132 kilograms in 2012/2013, this indicates that the sub-sector keeps on growing every year. Mohair also contributes to the growth of the economy of Lesotho (Ministry of Trade Industry Co-operatives and Marketing, 2013).

Table 3.5: Total number of goats shorn and yield for ten years period

years	Total goats shorn	Total Net Mass (kgs)
2003/2004	316 385	268 680
2004/2005	355 170	305 082
2005/2006	357 733	311 697
2006/2007	423 444	362 070
2007/2008	445 702	391 246
2008/2009	435 118	387 033
2009/2010	441 510	410 440
2010/2011	494 451	431 911
2011/2012	500 699	433 219
2012/2013	536 625	472 132

Source: Ministry of Trade Industry Co-operatives and Marketing (MTICM) (2013).

Fourie and Zwaan (2013) summarized the production of wool and mohair in Lesotho produced in the ten different districts. Wool and mohair production has increased in the recent years 2012/2013 as compared to previous years the reason being that there was no severe drought in those years and the flock performed very well. The Mokhotlong district is the leading district both in the production of wool and mohair which is 681 546kg and mohair is 96 232kg followed by Maseru with 596 060 kg wool and 88 263kg mohair which are particularly produced at the highlands part of Maseru. The other districts are Thaba-Tseka with 580 128kg of wool and mohair is 74 056kg while Quthing produced 387 779kg of wool and 36714kg of mohair. The other districts follow respectively.

3.4 Wool and Mohair Traded by Lesotho

Lesotho produces 14 percent of the world's wool and mohair, which is produced by 25000 wool and mohair farmers who are concentrated in five districts which are Thaba-Tseka, Quthing, Qachas'Nek, Maseru and Mokhotlong. Wool and mohair production in Lesotho present the number of sheep and goats shorn with its clean yield. There is evidence that the highlands and

foothills are suitable for sheep and goats that are contributing to the significant exports of wool and mohair (Department of Agriculture Forestry and Fisheries, 2013).

For over 80 years, wool and mohair sales have provided Lesotho with its largest exports and with its largest domestic generated source of income. Wool and mohair are traded through any of three outlets which are private traders; a government sponsored marketing service or illegal through smugglers. All of the wool and mohair is traded on world markets through South Africa which is used as broker. The proportion of the clip which is marketed through each outlet varies from year to year depending on the level of world prices and on the relative effectiveness of the outlets in responding to stockowners' marketing needs (Kategile and Mubi, 2012).

Figure 3.1 portrays the percentage distribution of wool and mohair production and marketing of wool and mohair for five consecutive years. The production of mohair and the amount of mohair traded has always been higher than that of wool in 2010/2011 to 2011/2012 marketing years, even though it was noted that more sheep were shorn than goats. Most of wool shorn was not the clean wool and therefore traded wool decreased by 25 percent in 2009/2010 and mohair decreased by 68 percent in the same year. In 2010/2011 to 2011/2012 marketing year, traded wool increased by 29 percent and mohair by 78 percent (Department of Livestock Services, 2013).

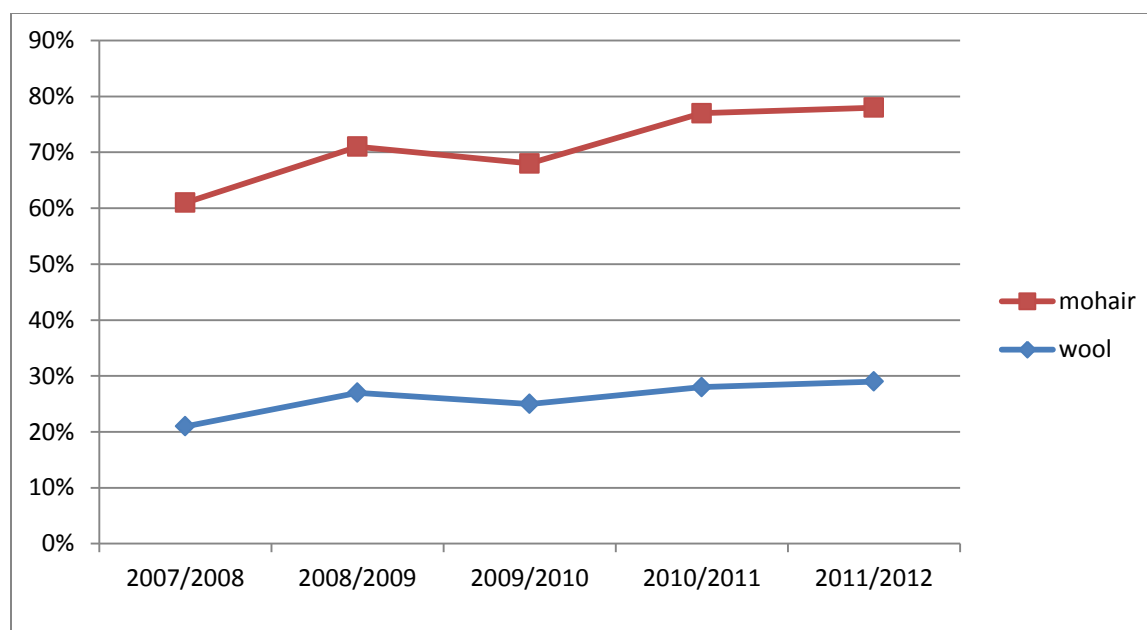


Figure 3.1: wool and mohair traded between 2007/2008 to 2011/2012 marketing year.

Source: Department of Livestock Services (2013).

Lesotho's agricultural exports mostly comprise of wool and mohair. Lesotho's wool and mohair are exported in raw form due to inadequate local processing facilities. Most of wool and mohair produced is for export, primarily to the South African markets and South Africa re-exports to the final destinations. Lesotho's wool and mohair export continues to be substantial. More recently, Lesotho is regarded as one of the countries that export wool and mohair to the world (Ministry of Agriculture and Food Security, 2013). According to ITC (2013) Lesotho's exports represent 0.38 percent of world exports for wool, its ranking in world exports is 18 while mohair represents 0.2 percent of world exports, and its ranking in world exports is 23.

Table 3.6 shows the mass of wool exported and the contribution of the wool sub-sector in Lesotho to the gross value of agricultural production in the period of ten agricultural years. The table confirms gross value of wool exported by Lesotho for the period of ten years between 2003/2004 and 2012/2013 period. It further confirms the mass of wool exported between those years. Wool exported attained a peak in 2012/2013 of 3599 794 kilograms at the gross turnover of Maloti (Lesotho's currency) 208,980,303.10: against the lowest mass of wool exported in the period of 2003/2004 to 2005/2006 ranging from 1755 718 and 2224 858 kilograms at the gross

turnover of Maloti 35, 441, 656. 64 and Maloti 34, 948,608.87. The fluctuation in those years was caused by poor pasture management, poor extension services, and drought. In 2009/2010 the production of wool declined again to 2943 764 kilograms at the gross turnover of Maloti 96, 178,060.00 due to poor nutrition: (Ministry of Trade Industry Co-operatives and Marketing 2013).

Table 3.6: Exported wool in kilograms, gross value in Maloti (Lesotho's currency) and average price c/kg

Period	Total mass of exported wool	Total gross turnover (Maloti)	Average price c/kg (Maloti)
2003/2004	1755 718	30,591,129.00	2018.64
2004/2005	2012 428	33,842,070.10	1680.28
2005/2006	2224 858	34,948,608.87	1570.00
2006/2007	2193 966	61,706,694.46	2812.56
2007/2008	2573 451	84,131,837.63	3269.00
2008/2009	3080 304	61,372,177.00	1992.00
2009/2010	2943 764	96,178,060.00	3267.00
2010/2011	3235 023	135,176,237.00	4179.00
2011/2012	3320 422	177,957,266.55	5359.00
2012/2013	3599 794	208,980,303.10	5805.00

Source: Ministry of Trade Industry Co-operatives and Marketing (2013).

Table 3.7 shows the total mass of mohair exported for a period of ten years and the gross turnover attained between 2003/2004 and 2012/2013. Mohair production attained a peak in 2011/2012 of 433 219 kilograms at a gross turnover of Maloti 29, 627,994.81 and in the following 2012/2013 the production went up by 472 132 kilograms at a declined gross turnover of Maloti 25, 256,272.98. For the period 2003/2004 to 2010/2011 production of mohair kept on increasing from 268 680 kilograms to 431 911 at the gross turn over ranging from Maloti 6, 579,235.40 to Maloti 22, 668,755.80. The increase brought by demand in the foreign markets which motivated farmers to produce more as their country appears to be the second largest producer of mohair in the world.

Table 3.7: Exported mohair in kilograms, gross turnover in Maloti (Lesotho's currency) and average price c/kg

Period	Total mohair exported (Kgs)	Total gross turnover(Maloti)	Average price c/kg (Maloti)
2003/2004	268 680	6,579,235.40	23.97
2004/2005	305 082	6,473,380.40	20.99
2005/2006	311 697	13,430,571.42	43.09
2006/2007	362 070	17,953,702.03	49.59
2007/2008	391 246	14,741,773.76	37.68
2008/2009	387 033	13,484,279.92	34.84
2009/2010	410 440	17,119,693.23	41.71
2010/2011	431 911	22,668,755.80	52.48
2011/2012	433 219	29,627,994.81	68.39
2012/2013	472 132	25,256,272.98	53.49

Source: Ministry of Trade Industry Co-operatives and Marketing (2013).

Lesotho exported 46.8% mohair followed by USA 30.3%, Australia 10.5 %, Argentina 4.7%, Germany 4.2%, New Zealand 2.3% and United Kingdom 0.3 % (National Agricultural Marketing Council, 2012).

3.5 Main Export Destinations of Lesotho Wool and Mohair

Most of Lesotho's wool and mohair are processed and packaged for South Africa's domestic market as well as international markets. They are sold in South Africa's auctions. The main destination of Lesotho's wool and mohair is South Africa which re-exports them to the international markets. Most of the wool produced in Lesotho is exported to China while most of the mohair produced is absorbed by South Africa. International Trade Centre trade map in 2013 reflected that Lesotho's wool exports primarily have been destined for the Indian markets averaging 251 tones between 2010 and 2013 (Department of Agriculture, Forestry and Fisheries, 2013).

Recently Lesotho has been engaged in the trade development between China and Lesotho. There has been a bilateral trade between Lesotho and China in terms of wool and mohair production in 2013. Most of Lesotho's wool and mohair have re-entered the Chinese market early in 2013 after the declaration from the World Animal Health Organization that prohibit countries from exporting animals and animal products due to the outbreak of Anthrax (a serious infectious disease caused by gram- positive, rod-shaped bacteria known as *Bacillus anthracis*. It can be found naturally in the soil and commonly affects wild animals, domestic animals and animal products around the world), which occurred in Lesotho in 2008. Lesotho's wool and mohair destined or traded to China reached 5.40 million US\$ (Huabo, 2013).

According to the Ministry of Trade Co-operatives and Marketing (2014) the following are the lists of the countries in which wool and mohair of Lesotho are destined: South Africa, China, Japan, France, India, Egypt, England, Netherlands, Norway, Australia, and Italy.

Figure 3.2 indicates growth in demand of wool exported by Lesotho in 2013. The graph further indicates that Lesotho exports to China are growing faster similar to the world's imports. The other market destinations of wool are South Africa, which have a high growing demand for wool from Lesotho followed by India, the Czech Republic, Italy and Germany. Their growth in demand is in the similar pace.

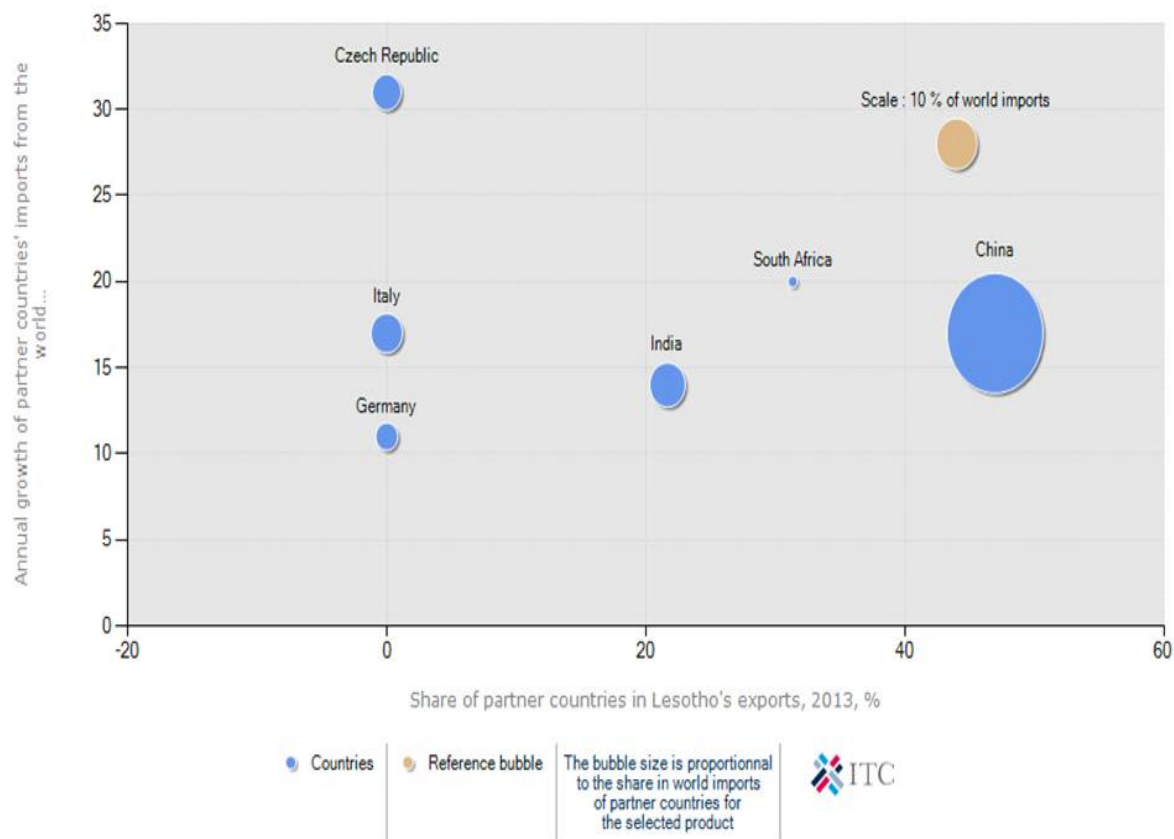


Figure 3.2: Market diversification of wool exported by Lesotho in 2013.

Source: ITC (Trade map) based on Lesotho Bureau of Statistics (2013) and based on UN COMTRADE Statistics (2013).

Figure 3.3 indicates the market destinations of Lesotho's mohair. South Africa seems to be the largest market of mohair in Lesotho in 2013. It has more growth in demand for mohair than the world's imports. Japan, China, Italy, United Kingdom and Germany are other countries which import mohair from Lesotho and they are growing at a similar pace.

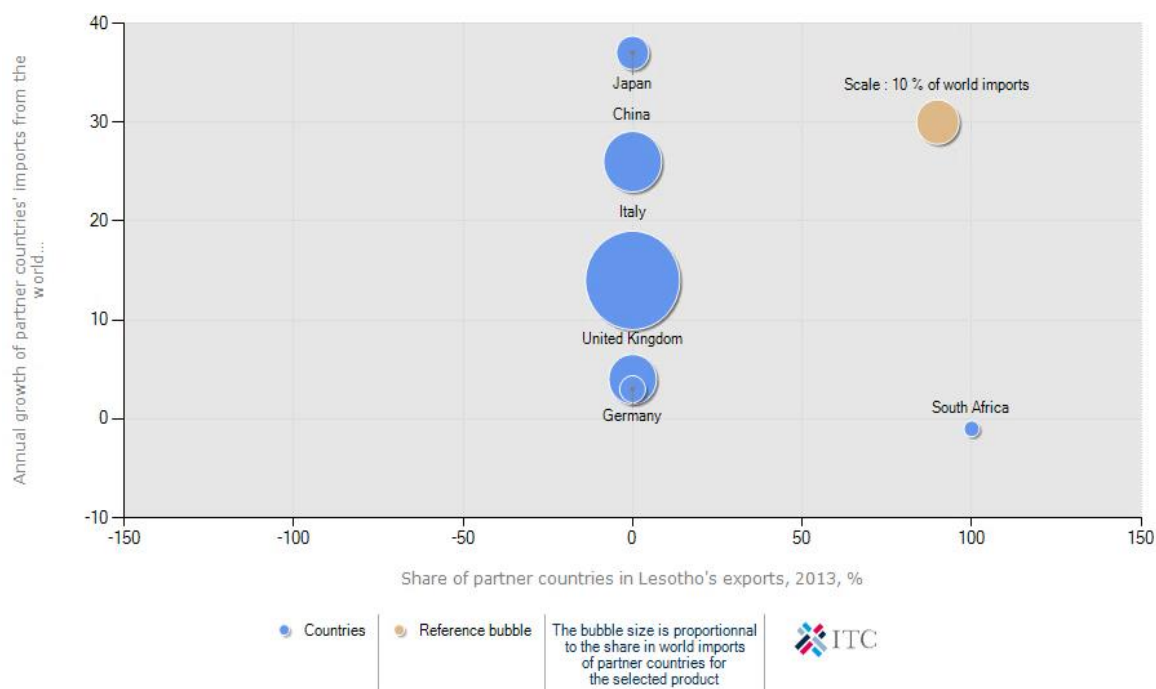


Figure 3.3: Market diversification of mohair exported by Lesotho in 2013.

Source: ITC calculations based on Lesotho Bureau of Statistics (2013) and ITC calculations based on the UN COMTRADE Statistics (2013).

3.6 Imports of Wool and Mohair by Lesotho

According to the Ministry of Trade Industry Co-operation and Marketing (2014), Lesotho does not normally import raw materials of wool and mohair. Only processed wool and mohair is imported from the countries. There is minor data with few details of imported wool and mohair by Lesotho.

Lesotho's imports represent zero percent of world imports for both wool and mohair. The global ranking import for wool is 74 and for mohair is 65. This shows that Lesotho is a net exporter of wool and mohair, it is not importing much of them (ITC, 2013).

3.7 Contribution of Wool and Mohair to Lesotho

According to Seventer *et al.* (2005) the agricultural sector plays a pivotal role in the economy of Lesotho. More than 80 percent of the rural population lives in the rural areas and about 70

percent derives livelihood, in part, from agriculture. Wool and mohair have potential for worldwide export, building linkages with domestic rural producers and possibly adding value along the value chain in the country. Notably agricultural products comprising of wool and mohair continue to add some millions of Maloti (Lesotho's currency), despite the fact that the contribution of agriculture to GDP over years is shrinking and is not steady. These agricultural commodities contribute to 30 percent of agricultural exports and the largest portions of cash income come from export sales.

Wool and mohair are the main agricultural exports, and Lesotho is the world's second biggest producer of mohair after South Africa. It produces 14 percent of mohair produced globally. All the production is in the hands of small holder farmers and most of them are in the mountain areas where the incidence of poverty is high. Wool and mohair production is a major factor injecting cash into the rural communities and addressing poverty in Lesotho (IFAD, 2014).

During the 2012/2013 shearing season, a total of 1,363,203 Merino sheep and 536,625 Angora goats were sheared, which translate to an increase of some 100,000 sheep (8 percent) and 36,000 goats (7 percent) from the previous season. These animals are owned by roughly 25,000 household and this shows that wool and mohair earned Lesotho foreign exchange. This benefits more than 50,000 farming households directly and an additional 130,000 Basotho indirectly as part of the Lesotho wool and mohair value chain. Wool and mohair are the only major agricultural commodities that are exported to the international markets, contributing about 4.85 percent of gross domestic product (GDP) (Kingdom of Lesotho, 2014).

The rural economy of Lesotho is dominated by livestock production which contributes 4.8 percent of GDP compared to agricultural crops which contributes only 1.9 percent. Wool and mohair are the main agricultural exports and Lesotho is the world's second largest producer of mohair. It produces 14 percent of the mohair produced globally. During the 2012/2013 season Lesotho's wool sales grossed US\$ 19.2 million and mohair sales grossed US\$ 2.9 million. All production is in the hands of smallholder farmers and most of these are in the mountain areas where the incidence of poverty is highest. Wool and mohair production is a major factor in injecting cash into rural communities and addressing poverty in Lesotho (Rath *et al.*, 2014).

3.8 Value Chain of Lesotho Wool and Mohair

Wool and mohair value chain in Lesotho consists of three channels in accordance to producers groups: Associations that link larger farmers with the government channels and infrastructure to the auction, individual farmers with medium-sized herds that link up with private traders using their own infrastructure to gain access to the auction and lastly marginal groups (small farmers) that are usually resource poor and usually use informal market channels to get their products to the auction (Department of Agriculture Forestry and Fisheries, 2013).

Marketing of Lesotho's wool and mohair is unique for smallholder producers. In effect individual smallholder producers are marketing most of their fleece wool directly on a major international auction market at Port Elizabeth and Durban in South Africa. In South Africa, Lesotho's wool and mohair is primarily handled by the marketing agent, Boere Koöporasie Beperk (BKB) who presents it to the auction floors in Port Elizabeth and Durban. BKB works on commission and in some instances it also re-grades and repackages the wool and mohair before it is presented for the auction. BKB provides comprehensive analysis of wool quality, quantities, shearing shed of origin, numbers of producers, number of sheep and goats shorn, auction held and priced received to the farmers of Lesotho. Individual producers are paid directly by the broker, they receive international price for their product and there is complete transparency in the transaction (Department of Livestock Service, 2014).

In addition to this market chain there are 13 licensed traders that handle about 30 percent of the clip, mainly dealing with the lower wool and mohair grades (lox, bellies and pieces) from the shearing sheds but also covering some small producers located too far from the shearing sheds who tend to shear their sheep and goats at their home base. These traders pay cash on the spot. Two market chains are complementary, ensuring effective competition in the market place and meeting producers and shed associations' cash flow needs. Finally there is a nascent cottage industry that currently has around 10 stakeholders, and manufactures garments made out of wool and mohair (Kingdom of Lesotho, 2014).

Figure 3.4 indicates Lesotho's wool and mohair value chain which consists of associations that use or link with the government shed. The other one is individual farmers that link with private traders and the third is marginal groups that use informal market channel. From these three links wool and mohair is sold at auctions in South Africa where wool and mohair will be absorbed and processed. Other wool and mohair are exported to the international market.

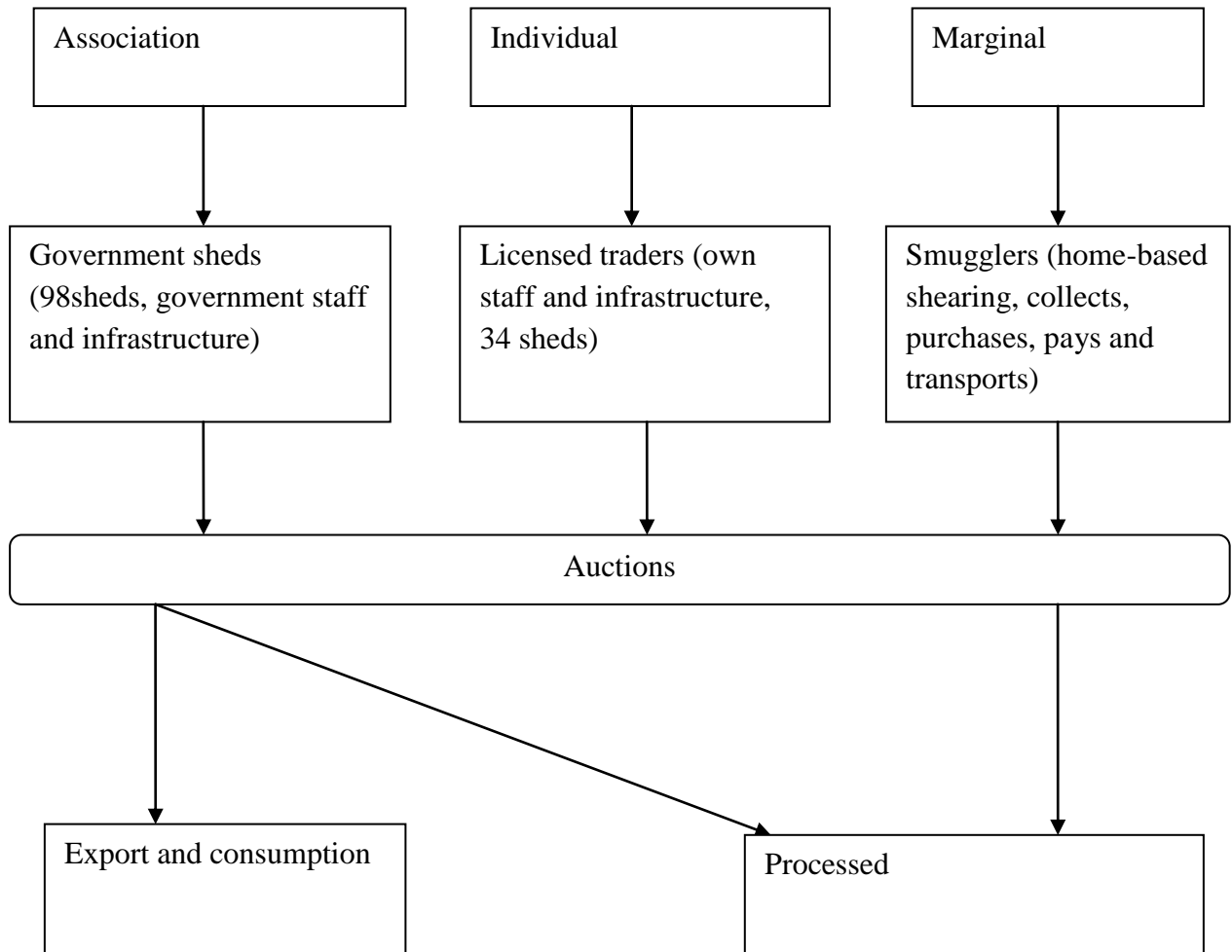


Figure 3.4: Lesotho wool and mohair value chain

Source: Tregurtha (undated).

3.9 Challenges of Wool and Mohair Sub-sector in Lesotho

Lesotho's sheep and goats are relatively poor producers of wool and mohair producing about 60 and 20 percent, respectively of what is produced per animal in the major fiber producing countries. Constraints to the production have been identified to include inappropriate range management practices, lack of supplementary feeding, low quality of sheep due to poor cross breeding husbandry practices, inadequate disease control measures, inclement weather and long term declining terms of trade that have affected the major wool exporters of the world (Department of Livestock Services, 2013).

Livestock farming in Lesotho is one of the traditional practices of Basotho occupations. It is based on the favorable ecological conditions in the country, particularly the large area covered by the foothills and mountains that is best suited for extensive production of livestock. According to the traditional Basotho way of raising sheep and goats, the animals are taken by herders to graze on communal land. In the case of the foothills, where are plateaus at the base of the mountains, most of the land is ploughed for crops, so there is a limited area for grazing. For this reason, livestock owned farmers in the foothills are taken to higher pastures in the mountains during summer, with the traditional authorities regulating the right access to pastures. This means that during the summer, grazing areas in the highlands hold large number of livestock from mountains and foothills farmers (FAO, 2005).

According to Arnalte (2006) herd boys live in harsh and isolated conditions tending sheep and goats. Most of the farmers continue practicing the traditional way of grazing, taking animals to the range land in the mountains. Overstocking of mountains pastures is caused. Land grazing capacity of these areas is overpassed, leading to soil compaction and poor animal health. Farmers from the mountains do not grow fodder for their animals, food intake for the animals is from grazing and therefore during summer they do not have enough food. This affects the yield of wool and mohair to become poor in both quality and quantity.

Lesotho has a long tradition of keeping merino sheep and agora goats but while the quality of wool and mohair is reasonably good, productivity is low, average wool production per sheep is only 2.74 kilogram per head and mohair is 0.87 kilogram per head compared to the fleece weights in South Africa of 0.4 kilogram for wool and 1.5-2.0 kilograms for mohair. Poor yields of wool and mohair result from poor nutrition, restricted access to improved genetic material, poor animal health, inadequate access to veterinary drugs and vaccines and limited capacity of the livestock extension services. The disease anthrax is a recurring problem and is a major concern for the wool and mohair sub-sector. When an outbreak occurs, wool and mohair purchasing countries place bans on importation of wool and mohair from any country where a disease is actively present. There is increasing evidence to suggest that in Lesotho anthrax is a climate sensitive disease. The occurrence and geographic spread is thought to be increasing due to increased rain intensity and more dramatic erosion is unearthing anthrax spores from previously buried anthrax infected carcasses (Kingdom of Lesotho, 2014).

Empirical evidence shows that developing countries such as Lesotho are often needed to diversify the products they export, and the geographic destinations and origins of their trade, since there are adverse developments in international supply or demand of wool and mohair. This problem may be particularly acute for many African countries that are heavily dependent on export of a relatively few primary commodities, which are often subjected to highly unstable prices and unfavorable long term demand prospects (Yeats and Francis, 2003).

Lesotho does not fully benefit from its wool and mohair production due to lack of capacity to process the greasy wool into a high quality raw material required by the textile industry in the world markets and therefore most of the wool and mohair produced in Lesotho are sold at South African's auction in Port Elizabeth through BKB as the great broker (Maama, 2012).

The wool and mohair sub-sector in Lesotho has the potential to expand but high mortality rate, limited investment in livestock improvement, low reproduction and an inefficient marketing structure had thwarted this potential. Lesotho's wool and mohair sector has not received the same level of government support as that enjoyed by the garment and textile sector. The marketing of wool and mohair remains regulated and this has inhibited the development of the

private sector's wool trade. More than 60 percent of Lesotho's wool and mohair clip is marketed through the 98 shearing sheds owned and operated by the government. Larger farmers, who are well originated into farmer's associations, typically use these facilities. The main challenge faced by these farmers is that all their interaction with the market (both product and business services) is mandated through the Lesotho government's Livestock Products Marketing Service (LPMS), whose quality of service has been falling because of budget constraints (Fourie and Flint, 2006).

3.10 Summary

Annual wool and mohair production can be influenced by the number of sheep and goats shorn and wool and mohair yield per sheep and per goat. Lesotho may depend, mainly on increasing the annual wool and mohair yield per sheep and per goat rather than increasing the amount of sheep and goats. Wool and mohair are the most profitable and sustainable exports so far in the agricultural industry as compared to the other products. Most wool is exported to China while mohair is absorbed by the South African markets.

Wool and mohair also used by local producers of tapestries and knitwear, though in lesser extent. Wool and mohair value chain shows greater potential for further improvement; more especially since Lesotho produces 14 percent of the world's mohair. The main challenges that affect the sub-sector are the disease and nutrition which deteriorate the production of wool and mohair and also the uncertainty in the foreign markets.

The mass of wool and mohair exported and the gross turnover gained in the consecutive years for the period of ten years together with its contribution to the economy of the country were indicated in this chapter. Value chain of the sub-sector was presented where the value chain has been consisted of three channels which are associations that link farmers with the government's channels, individual farmers that link with private traders and marginal groups that use informal market channels. Challenges that the sub-sector face were presented such as lack of supplementary feeding and low quality of sheep due to poor cross breeding husbandry practice.

CHAPTER FOUR

METHODOLOGY AND DATA USED

4.1 Introduction

The purpose of this chapter is to present different trade indicators which will be used to evaluate trade performance of wool and mohair of Lesotho. According to Seymen and Utkulu (2004) Revealed Comparative Advantage Index of Balassa has been a widely accepted approach in the world to analyze trade data and comparative advantage. This index tries to identify whether a country has a “Revealed Comparative Advantage rather than to determine the underlying sources of comparative advantage.” Other measures or indicators that will be presented in this chapter are Effective Rates of Protection and the Nominal Rates of Protection. These rates of protection are widely used in the evaluation of protected industry regimes (Wei and Kiyono, 2003).

In this chapter the empirical description of Hirschman Index will be presented, which determines market concentration and market diversifications. Trade Map also will be discussed as another trade indicator. The formulations or equations for all those trade indicators will be provided.

4.2 Revealed Comparative Advantage

Bahta *et al.* (2013) and Leishman *et al.* (2013) described that, in 1965, Bela Balassa introduced the notion of Revealed Comparative Advantage as a way to approximate comparative advantage (CA) in autarky. The concept of Revealed Comparative Advantage pertains to the relative trade performances of individual countries in particular commodities. On the assumption that the commodity pattern of trade reflects inter- country differences in relative costs as well as in non-price factors, this is assumed to reveal the comparative advantage of trading countries. They further described that, (Balassa, 1977) indicated that if trade performance is determined by CA,

then direct observations of trade performance should reveal CA. The plausibility of this condition has almost certainly been strengthened by recent trends in trade liberalization.

Balassa and others have used consumption, import and export data to conduct various trade performance indicators. The Revealed Comparative Advantage (RCA) indexes of Bela Balassa are well known, the difference between the two indexes lies in the fact that one of them includes only exports whereas the other include both exports and imports (Leishman *et al*, 2013). The Revealed Comparative Advantage applied in this study is used to analyze export pattern of wool and mohair and provides valuable information for trade policy in Lesotho.

The formula to calculate RCA index is one following Balassa (1965):

$$RCA_{ij} = \frac{\frac{X_{ij}}{\sum_i X_{ij}}}{\frac{\sum_j X_{ij}}{\sum_i \sum_j X_{ij}}}$$

Where: X_{ij} is the total exports of sector “i” of country “j”

$\sum_i X_{ij}$ is the total export of country “j”

$\sum_j X_{ij}$ is the world exports of sector “i” and

$\sum_i \sum_j X_{ij}$ is the total “world” export

This index measures a specific product’s share in the country’s total export relative to a share of this product in the world trade. When the product’s share in the world export shows that Revealed Comparative Advantage is greater than one ($RCA > 1$), it is interpreted that, the country has Revealed Comparative Advantage in this particular product. In contrast, for products whose

(RCA < 1), country is said to Revealed Comparative Disadvantage. Often this index is interpreted as RCA in production of product (Bahta *et al.*, 2013).

The Revealed Comparative Advantage pioneered by Balassa compares the export share of a given sector in a country with the export share of that sector in the world market (Bender and Waili, 2002). In this study if the Revealed Comparative Advantage (RCA) has a higher index value it means that the importance of wool and mohair are much greater compared to other agricultural exports.

4.3 Effective Rate of Protection (ERP)

Effective Rate of Protection is commonly used to measure net effect of trade policies on the incentives facing domestic producers. The measurement of effective protection is clearly a two-stage process- firstly, determining the nominal protection of the policies in question and secondly, analyzing the implications for effective protection of different firms, sectors or activities (Reed, 2001).

Formulation of Effective Rate of Protection (ERP):

$$ERP = \frac{VA^d - VA^w}{VA^w} \times 100$$

Where: VA^d is value added in the activity as measured at protection –Inclusive domestic prices

VA^w is value added in the activity as measured at undisorted world prices

4.4 Nominal Rate of Protection (NRP)

Nominal Rate of Protection is the total proportional difference between domestic and international prices, taking into account both import tariffs and other distortions such as quantitative restrictions and price distortions such as price controls (Barreiro-Hurle and Witwer, 2013).

Nominal Rate of Protection therefore, is a measure of the total price – raising (or reducing) effects on a tradable good of the trade policies being examined. The relationship between the domestic price and the world price of any good, and the derivation on NRP from this, can be expressed as follows:

$$P^d = P^w (1 + t + d + e)$$

$$NPR = \frac{P^d - P^w}{P^w} \times 100$$

Where: P^d is domestic price

P^w is world price

t is ad valorem equivalents of taxes

d is duties on imports of good

e is the net ad valorem tariff equivalent of other non-tax, Non- tariff trade

Restrictions

4.5 Hirschman Index (HI)

Hirschman index is another measure used by the United Nations conference on trade and development (UNCTAD) is the concentration index which is calculated using the shares of products in a country's exports. This index is defined as the sum of squared market shares of firms in a market and thereby provides an early interpretable measure of concentration (Lijesen, 2004).

Formulation of Hirschman Index (HI):

$$HI = \sqrt{\sum (X_i / x)^2}$$

Where: X_i is value of product i's export

X is value of total export of country

The lower the index, the less concentrated are a country's exports. This index is normalizing so that its values range between 0 and 1. Values closer to one indicate more concentrated trade structures. It is generally assumed that lower export concentration reduces the impact of international trade risks due to the possible price fluctuations of specific products. A country with few major trade partners might have a lower HI value, indicating low concentration, than a country with more partners if the former has its trade more evenly distributed among its partners than the latter (Department of Economic and Social Affairs, 2014).

4.6 Trade Map

Trade Map was developed in 2001 by the International Trade Centre (ITC) to help both trade institutions and enterprises answer questions about international trade and thereby facilitate strategic market research. Trade Map organizes a large volume of primary trade data and presents them in an accessible, user-friendly and interactive web-based application. It provides indicators on country or product performance, demand, alternative markets, performance of competitors and information on importing and exporting companies. It presents information in

tables, charts and maps. Trade Map provides data that is pre-calculated for the users (Gonzalez, 2013).

4.7 Data Used

The Ministry of Trade Industry Marketing and Co-operatives, Boere Koöorporasie Beperk (BKB) provided data on exports, production and consumption of wool and mohair which is used in the calculation of different measures such as Revealed Comparative Advantage and Hirschman Index used in this study. Descriptions and formulas of different measures used were sources from the written documents of the World Bank and books. Lesotho Bureau of statistics and United Nations Commodity Trade Database Statistics (UNCOMTRADE) provided yearly data for the export of wool and mohair of Lesotho in quantities and value by commodities. Trade Map was sourced from the International Trade Centre (2013) which provides yearly statistical data of wool and mohair exports in quantity, value, trade partner countries and tariffs imposed by the other countries for wool and mohair.

The study concentrated on the annual data for the export, production and consumption of wool and mohair from 2003 to 2012. In this study wool (SITC 5101) and mohair (SITC 5102) were selected as the most agricultural export commodities based on their importance in terms of their contributions to the gross value of agricultural production.

The Ministry of Trade Industry Co-operatives and Marketing and BKB also provided data which is valuable and used to develop enterprise budget of wool and mohair for this study for the calendar year 2013/2014 (which is used for the calculation of effective rate of protection and nominal rate of protection). The economic price of wool and mohair were calculated by giving due consideration to the shadow value of the exchange rate, transportation cost, Cost Insurance and Freight (CIF), import parity and export parity price as well as tariffs imposed on inputs. The nature of that however data not incorporate the costs for the non-tradable inputs such as electricity. As a result, this study is limited to the effective rates of protection, according to the Balassa.

4.8 Summary

In this chapter, methods used for analysis and data collected in this particular study are presented and briefly discussed, which are: Revealed Comparative Advantage, Effective Rate of Protection, Nominal Rate of Protection, Hirschman Index and Trade Map. The Revealed Comparative Advantage shows the trade performance of the sub-sector (wool and mohair) while Effective Rate of Protection and Nominal Rate of Protection shows the protection that the policies of the certain country in which the study was carried provide to the particular industry for example: policy that protect the industry against taxes and tariffs. The indicator of Hirschman Index indicates the concentration of trade of a certain product. If the country has few major trade partners. The Hirschman Index value might be lower, indicating low concentration. However the country with more trade partners' trade pattern is more evenly distributed and shows more concentration. Trade Map is one of the market analytic tools beside Investment Map, Market Access Map and Standard Map. It supports global trade and helps enterprise, trade organizations and policymakers. Trade Map gives more opportunity to identify market opportunities and allowing trade to be strengthened.

Most of the data collected are from the World Bank documents, books and Ministry of Trade, Industry Co-operatives and Marketing reports in Lesotho. Other source of data for this study used was the enterprise budget of wool and mohair for the agricultural year 2013/2014 which was developed based on the information obtained from the Ministry of Trade Industry Co-operatives and marketing.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents results of the study using Revealed Comparative Advantage of wool and mohair, Hirschman Index of wool and mohair, Effective Rate of Protection and Nominal Rate of Protection of wool and mohair and Trade Map.

5.2 Revealed Comparative Advantage of Wool in Lesotho

The analysis of Lesotho's current export patterns will reveal a comparative advantage in wool production. Table 5.1 indicated that wool sub-sector shows Revealed Comparative Advantage during the study period of 2003 to 2012. Lesotho is a net exporter of wool production-that is exports exceed imports.

Revealed Comparative Advantage (RCA) mimics a specific country's comparative advantage. This index measures wool's share in world trade. When the wool's share in national exports is higher than the wool's share in the world export ($RCA > 1$), interpret it as Lesotho Revealed Comparative Advantage in wool production. A detailed numerical explanation is presented in Appendix A: Table A.1.

Table 5.1: Revealed Comparative Advantage of wool

Year	RCA
2003	19.74
2004	7.63
2005	10.27
2006	19.40
2007	23.67
2008	18.63
2009	38.71
2010	42.70
2011	33.08
2012	47.35

Source: Author's Calculations.

5.2.1 Export Diversification Index of Lesotho's Wool Sub-sector (Hirschman Index)

Table 5.2 also shows the Hirschman Index of wool production. The value of index of trade concentration is close to zero, which indicates a less concentrated trade structure. The index of trade concentration or Hirschman Index indicates that the wool sub-sector shows lower concentration throughout the period of ten years. Lower concentration reduces the impact of international trade risk due, to the possibility of price fluctuation of wool product or industry. Export diversification is likely to be a proxy for the widening of comparative advantage that comes with a more diversified economy.

This index is normalizing so that its value ranges between 0 and 1. Values closer to one indicate more concentrated trade structure.

Table 5.2: Hirschman Index (HI) of wool

Year	Hirschman Index
2003	0.026
2004	0.009
2005	0.010
2006	0.017
2007	0.021
2008	0.013
2009	0.025
2010	0.032
2011	0.029
2012	0.036

Source: Author's Calculations.

5.3 Revealed Comparative Advantage of Mohair in Lesotho

Table 5.3 indicates Revealed Comparative Advantage of mohair in Lesotho. The index of revealed comparative advantage is greater than one from 2003 to 2012 for mohair subsector. This indicates that Lesotho holds comparative advantage in this commodity and mohair is the most and major agricultural commodity export in Lesotho, therefore Lesotho enjoys comparative advantage in this commodity. Mohair's share of Lesotho's total export is relevant to the share of mohair in the world trade, this implies that Lesotho is a net exporter of mohair production, which is export exceeds import. Lesotho specializes in the production of mohair than the average country. As explained from the literature review Lesotho is the second largest producer of mohair in the world and it produces 14 percent of the world's mohair. A detailed numerical explanation is presented in Appendix A: Table A.2.

Table 5.3: Revealed Comparative Advantage of mohair

Year	RCA
2003	4.25
2004	1.46
2005	3.95
2006	5.65
2007	4.15
2008	4.09
2009	6.89
2010	7.16
2011	5.51
2012	5.72

Source: Author's Calculations.

5.3.1 Export Diversification Index of Lesotho's Mohair Sub-sector (Hirschman Index)

From table 5.4 Lesotho indicates low market concentration of mohair produced, meaning that Lesotho has only a few major trade partners. According to the theory of Hirschman Index (it should be noted that Hirschman Index for a given country's depends on the distribution of share of exports among its partners) a country with few partners might have a lower Hirschman Index. The value of this index ranges between zero and one and values closer to one indicate more concentrated trade structures. Therefore from table 5.4 all the values from 2003 to 2012 are closer to zero and this indicates low concentration of trade structure of mohair in Lesotho.

Table 5.4: Hirschman Index (HI) of mohair

Year	Hirschman Index(HI)
2003	0.006
2004	0.002
2005	0.004
2006	0.005
2007	0.004
2008	0.003
2009	0.004
2010	0.005
2011	0.005
2012	0.004

Source: Author's Calculations.

5.4 Effective Rate of Protection and Nominal Rate of Protection of the Wool Sub-sector

The Balassa Effective Rate of Protection (ERP) of wool presented in table 5.5. The result indicates that the Balassa ERP of wool is -99.96 in Lesotho. The negative ERP indicates that the weighted input tariffs on wool input amount, is more than the output tariff. The wool sub-sector is taxed by the government tariff policies. As table 5.5 indicated that Nominal Rate of Protection (NRP) is greater than ERP, this implies that tariff applied on the output is higher than tariff on input. It is clear that wool subsector is not protected, because it is taxed.

The results from ERP calculations support what was explained in the literature review by (Fourie and Flint, 2006) where they indicated that the wool sub sector does not get full support from the government in Lesotho. This also supports what the research problem statement stated - that the wool subsector is faced with taxation and farmers are getting less net gross amount due to this taxation.

Table 5.5: Nominal and Effective Rate of Protection of wool in Lesotho

Year	Place	Sector	Balassa ERP	NRP
2013/2014	Lesotho	Wool	-99.96	12.67

Source: Author's calculations

5.5 Effective Rate of Protection and Nominal Rate of Protection of Mohair Sub-sector

From the results Effective Rate of Protection is lower -99.52 as indicated in table 5.6. Effective Rate of Protection indicates negative values and this implies that more tariffs are put on the output than on the input, because the Nominal Rate of Protection is higher than Effective Rate of Protection. This shows that mohair sub-sector is taxed by the government tariff policies.

Table 5.6: Nominal and Effective Rate of Protection of mohair in Lesotho

Year	Place	Sector	Balassa ERP	NRP
2013/2014	Lesotho	Mohair	-99.52	64

Source: Author's calculations

5.6 Trade Map Analysis for Wool Exported by Lesotho

Trade performance of wool exported by Lesotho experienced an increase in 2013. Lesotho is exporting its wool to the international markets. This implies that Lesotho has liberalized its export. From the results in Appendix B: Table B.1 from Trade Map analysis tool it is revealed that Lesotho has exported 6, 250 tons of wool to the world at an average value of US\$ 2,607/unit. The results further indicate exported value in 2013 which was 16,298 US\$ thousand and shares of Lesotho's export is 100 percent. This indicates the growth of wool product of Lesotho both in value and quantities.

China, South Africa and India are the leading importers of wool from Lesotho (accounting 47%, 31.4% and 21.7% of Lesotho's exports respectively). South Africa is the world first leading importer of wool from Lesotho in the period 2009 to 2013 with 31.7% in growth in value. India

has 8% growth in quantity from 2009-2013, while other importing countries have experience nothing in quantity growth. China seemed to be the first in ranking of partner countries in the world that import Lesotho's wool followed by India, Italy, the Czech Republic, Germany and South Africa (which appears to be number 29). Lesotho is experiencing high tariff rates from the product (wool) from China (38%) and from India (5%). The result reported that the wool sub-sector is faced with trade barriers in some trade partner countries with Lesotho. Trade Map results revealed that Lesotho has only a couple of large trade partners which are South Africa, China and India as it has been indicated in Appendix B: Figure1. There is a need for Lesotho to diversify its markets while comparing its product demand by the different markets. As it has been shown from the Trade Map analysis that: China, South Africa and India are the only countries that have demand for Lesotho's wool than the other markets.

5.7 Trade Map Analysis for Mohair Exported by Lesotho

Trade Map results from Appendix B: Table B.2 indicate that Lesotho export a total of 790 tons of mohair at an average value of US\$ 866/ unit. The result from the Trade Map indicated the exported values of mohair which is 684 US\$ thousand and the share of Lesotho's export is 100%. South Africa is the largest market of mohair exported by Lesotho in the world accounting for 100% of shares in Lesotho's export. Lesotho is not experiencing any tariff barriers from South Africa because they have duty free agreements with Southern African Customs Union (SACU). The results have revealed that Lesotho has insufficient markets since is only South Africa which has a high demand for mohair. Appendix B: Figure 2 indicated that only South Africa absorbs mohair from Lesotho. Therefore there is a need to diversify the markets destinations of mohair. The results from the Trade Map emphasized what was indicated in the literature review by the Department of Agriculture, Forestry and Fisheries (2013) that most of Lesotho's mohair is absorbed by South Africa.

5.8 Summary

This chapter started by examining trade structure and pattern of wool and mohair in Lesotho, using the Revealed Comparative Advantage (RCA) measures. The results from the Revealed Comparative Advantage indicate that Lesotho specializes in wool and mohair production and it is performing very well. All the values show that Lesotho has Revealed Comparative Advantage on wool and mohair since it is greater than one, during the study period 2003-2012.

The chapter also considered the market concentration using Hirschman Index. The main purpose of using this index is to indicate whether Lesotho has more trade partners in wool and mohair for export. The results revealed that Lesotho has less market concentration for wool and mohair. All the values of market concentration approaches zero therefore according to Hirschman's theory, values closer to one show more market concentration but values closer to zero show less market concentration.

Protection provided by the government on trade policy to protect wool and mohair against tariff was considered in this chapter. Two measures were used to determine the protection against tariff which is Effective Rate of Protection and Nominal Rate of Protection. Results in this chapter revealed that more tariffs are put on the output than on the input as the values of Effective Rate of Protection are lower than that of Nominal Rate of Protection of wool and mohair. This indicates that wool and mohair subsector is taxed.

The market analysis tool which is Trade Map has been used in this chapter as one of the methodology used for data analysis. The results from the Trade Map indicate that wool and mohair are exported to international markets. The results further indicate shares, growth rates, export values and volumes of wool and mohair in the world and market destinations of wool and mohair. The results revealed that wool and mohair have potential markets mostly in China, South Africa and India. This implies that wool and mohair are distributed to only a couple of large trade partner countries and this indicates that there is low market concentration for wool and mohair.

CHAPTER SIX

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study has attempted to analyze trade structure and pattern of wool and mohair export which involves trade policy, trade liberalization and trade agreements. Wool and mohair are the major agricultural export of Lesotho. The study evaluated the contribution of wool and mohair to the economic growth of the country and examined the protection provided to the industry by the entire structure of tariff. The study evaluated the importance of trade liberalization of wool and mohair and the standard of wool and mohair to the international markets.

The study presented trade policy of Lesotho. It is indicated that Lesotho's trade policy is guided by various statutes on trade and the Southern African Custom Union trade policy. Lesotho is involved in trade agreements in both regional agreements and international agreements with different bodies such as the General Agreement on Trade and Tariffs (GATT), the World Trade Organization (WTO), African Caribbean and Pacific (ACP), European Free Trade Area (EFTA), Southern African Customs Union (SACU), Common Monetary Area (CMA), and Southern African Development Union (SADC). Being a member of those trade agreements benefits Lesotho in liberalizing trade in order to have access to the foreign markets and reduce trade barriers.

Production of wool and mohair has been presented. Wool and mohair are the most agricultural export commodities in Lesotho. They provide farmers with income for living and also contribute to Lesotho's economic growth. The sub-sector has many challenges such as disease, poor range management, and foreign price instability facing exporters, poor quality standards of wool and mohair and insufficient market structure and taxation of the sub-sector. Different measures were

used to analyze data and such measures are Revealed Comparative Advantage, Hirschman Index, Effective Rate Protection, Nominal Rate of Protection and Trade Maps. This chapter summarizes the findings, conclusion, recommendations, and suggestions for further research and how the study will contribute to the improvement of the country presented.

6.2 Summary of Findings

The empirical analysis of this study is based on Revealed Comparative Advantage which is a widely accepted approach to analyze trade structure and pattern of wool and mohair sub-sector. From the findings from chapter five, Revealed Comparative Advantage (RCA) mimics a specific country's comparative advantage. This index measures that wool and mohair's share in national exports is higher than the wool and mohair's share in the world ($RCA > 1$) - interpret it as Lesotho Revealed Comparative Advantage in wool and mohair production, during the study period of 2003 to 2012. Lesotho is a net exporter of wool and mohair production, meaning that exports exceed imports. Findings indicated that Lesotho is enjoying the comparative advantage of wool and mohair. It specializes in the production of the commodities.

When considering the export diversification index of Lesotho's wool and mohair (Hirschman Index) this index is normalizing so that its values range between 0 and 1. Therefore from the findings trade concentration is closer to zero which indicates a less concentration trade structure while the values closer to one indicate more concentration. The wool and mohair sub-sector indicated low concentration from the study period 2003 to 2012. Low concentration reduces the impact of international trade risk due to the possibility of price fluctuation of wool and mohair. Export diversification is likely to be a proxy for the widening of comparative advantage that comes with a more diversified economy.

Effective Rate of Protection was also calculated for wool and mohair of Lesotho. Effective Rate of Protection is defined as the change in value added, made possible by the tariff structure, as a

percentage of free trade value added. It is based on the relationship between input and output tariffs, and the ratio between the input cost and the output price. The study revealed that Lesotho has negative Effective Rate of Protection (ERP) both for wool and mohair. Nominal Rate of Protection (NRP) is greater than ERP. This incidence of negative values indicates that tariffs applied on the output are higher than tariff on the inputs. This means that the wool and mohair sub-sector is not protected but is taxed.

Findings also from the International Trade Centre (Trade Map) indicated Lesotho's wool and mohair exported to the international markets (6,250 tons of wool and 790 tons of mohair). This indicated the export growth in quantity of both wool and mohair. Lesotho's share of wool and mohair is 100 percent and the exported value in 2013 was 16,293 US\$ for wool and 684 US\$ for mohair. These values indicate that wool and mohair contribute greatly to the economy of Lesotho. Findings also revealed the largest market destinations of wool and mohair in the world are China, South Africa and India. Findings from Trade Map indicated that wool and mohair are distributed to a couple of large trade partners, indicating that there is low market concentration for wool and mohair.

6.3 Conclusions

Lesotho is engaged in many different trade agreements with other countries in order to have access to market. Lesotho has comparative advantage in the production of both wool and mohair and it benefits from engaging in the international trade with other countries. Also farmers in Lesotho get a better income from the sub-sector. It is concluded that wool and mohair commodities are the major export commodities. As it has been revealed from the results, Lesotho specializes in the production of wool and mohair; it has Revealed Comparative Advantage in wool and mohair. Wool and mohair's share in national exports is higher than wool and mohair's share in the world. Lesotho has an insufficient market structure as it has only a couple of large trade partners, products are only distributed in South Africa and China. Lesotho is competing with large countries which are producing good quality wool and mohair and this affects the production of Lesotho's wool and mohair. If the major buyers of wool and mohair are very few it

reduces the impact of international trade risk due to the possibility of price fluctuation of the wool and mohair sub-sector. The small amount of trade partners are brought on by the standard of wool and mohair produced in Lesotho which is greasy and not on the international market standards and competition. Disease and poor nutrition lead into poor quality of the commodities. Lesotho's trade policy does not protect agricultural products like wool and mohair against tariffs. These commodities are not subsidized by the government but the sub-sector is taxed.

6.4 Further Research and Recommendations

Future study should therefore explore the feasibility for the establishment of wool and mohair scouring plant in Lesotho, the future study should consider the problems that contributed to the failure of the implementation of the scouring as it was suggested to be established in 2012, since Lesotho has the potential to produce wool and mohair. This will help farmers to interact directly with the international markets for their products rather than to sell their wool and mohair in auctions where these commodities will be re-exported. Future research should also investigate all the adjustments that should be made in the trade policy in order to protect all agricultural products against tariffs. An investigation should be done on whether extension workers provide enough training to the farmer to produce quality wool and mohair. Also the implications of alternative practices except traditional practices can be part of future research.

It is recommended that Lesotho should also diversify geographic destination of its trade. This will help Lesotho to export high value wool and mohair which will lead to higher earnings to be realized from international trade, because international purchasing plays a significant role in promoting comparative advantage.

Lesotho has to increase its market structure. It is also recommended that Lesotho should have the capacity to process the greasy wool and mohair into a high quality raw material required by the textile industry in the world markets. Farmers have to use improved production practices such as

rotational grazing and grow supplementary feeds (fodder) for their animals so that they may yield better quality products that can be marketed more profitably.

Policy recommendation for the government and for the interested bodies based on the results of the study is as follow: it is recommended that trade policies should be adjusted or visited so that more tariffs are not put on the agricultural products such as wool and mohair as these tariffs become barriers to trade, and demoralize farmers from producing more on the products. The government should provide subsidy to the sub-sector so that it can excel to the fullest capacity. Agricultural trade liberalization should always be part of the policy in Lesotho in order to reduce tariffs. Lesotho has to implement trade policies in adherence with the world; this will contribute to the widening of the markets without any constraints.

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APPENDIX A

Table A. 1: Revealed Comparative Advantage of wool in Lesotho (RCA)

Year	World total export of all commodities (Million US\$)	World total export of wool (5101) (Million US\$)	Lesotho total export of all commodities (Million US\$)	Lesotho wool (5101) export (Million US\$)	Wool share in Lesotho export (%)	Wool share in the world trade (%)	RCA	Hirschman Index
	1	2	3	4	(4/3)	(2/1)	(4/3)/(2/1)	(4/3)sq.
2003	7586000	5000	221000000	2875620	1.30	0.07	19.74	0.026
2004	9081466	5300	714000000	3181214	0.45	0.06	7.63	0.009
2005	10359677	5100	650000000	3235230	0.51	0.05	10.27	0.010
2006	11983856	5200	689000000	5800537	0.84	0.04	19.40	0.017
2007	13827071	6000	770000000	7908540	1.03	0.04	23.67	0.021
2008	15970882	5600	883000000	5769092	0.65	0.04	18.63	0.013
2009	1238360	4000	723000000	9040902	1.25	0.03	38.71	0.025
2010	15075181	5600	801000000	12706802	1.59	0.04	42.70	0.032
2011	18013288	7800	1168000000	16728294	1.43	0.04	33.08	0.029
2012	18013778	6800	1099000000	19644514	1.79	0.04	47.35	0.036

Source: Author's calculations

Table A. 2: Revealed Comparative Advantage of mohair in Lesotho (RCA)

Year	World total export of all commodities (Million US\$)	World total export of mohair (5102) (Million US\$)	Lesotho total export of all commodities (Million US\$)	Lesotho mohair (5102) export (Million US\$)	Mohair share in Lesotho export (%)	Mohair share in the world trade (%)	RCA	Hirschman Index
	1	2	3	4	(4/3)	(2/1)	(4/3)/(2/1)	(4/3)sq.
2003	7586000	5000	221000000	618459.6	0.28	0.07	4.25	0.006
2004	9081466	5300	714000000	608506.8	0.09	0.06	1.46	0.002
2005	10359677	5100	650000000	1262497	0.19	0.05	3.95	0.004
2006	11983856	5200	689000000	1687681	0.24	0.04	5.65	0.005
2007	13827071	6000	770000000	1385753	0.18	0.04	4.15	0.004
2008	15970882	5600	883000000	1267546	0.14	0.04	4.09	0.003
2009	1238360	4000	723000000	1609281	0.22	0.03	6.89	0.004
2010	15075181	5600	801000000	2130903	0.27	0.04	7.16	0.005
2011	18013288	7800	1168000000	2785083	0.24	0.04	5.51	0.005
2012	18013778	6800	1099000000	2374134	0.22	0.04	5.72	0.004

Source: Author's calculations

APPENDIX B

Table B. 1: List of importing markets for the product exported by Lesotho in 2013. Product; 5101 wool not carded or combed.

Importers	Exported value in 2013(US\$ Thousands)	Share in Lesotho's exports (%)	Exported quantity in 2013 (tons)	Unit value (US\$/Unit)	Exported growth in value between 2009-2013 (% , p.a)	Exported growth in quantity between 2009-2013 (% , p.a)	Exported growth in value between 2012-2013(% ,p.a)	Ranking of partner countries in world imports	Tariff (estimated) faced by Lesotho (%)
Total	16, 293	100	6, 250	2,607			337		
China	7, 652	47	647	11,827				1	38
South Africa	5,108	31.4	5,314	961	31,732			29	0
India	3,533	21.7	289	12,225		8	-5	2	5
Czech Republic	0	0	0	0				4	0
Germany	0	0	0	0				5	0
Italy	0	0	0	0				3	0

Source: ITC calculations based on UN COMTRADE Statistics and Lesotho Bureau of Statistics (2013).



Figure 1: Map of trade partner countries of Lesotho's wool

Source: ITC (2013).

Table B. 2: List of importing markets for a product exported by Lesotho in 2013. Product: (5102) fine or coarse mohair not carded or combed.

Importers	Exported value in 2013(US\$ Thousands)	Share in Lesotho's exports (%)	Exported quantity in 2013 (tons)	Unit value (US\$/Unit)	Exported growth in value between 2009-2013 (% , p.a)	Exported growth in quantity between 2009-2013 (% , p.a)	Exported growth in value between 2012-2013(% ,p.a)	Ranking of partner countries in world imports	Tariff (estimated) faced by Lesotho (%)
Total	684	100	790	866					
South Africa	684	100	790	866				8	0
China								2	0
Germany								5	5
Italy								1	0
Japan								4	0
United Kingdom								3	0

Source: ITC calculations based on UN COMTRADE Statistics and Lesotho Bureau of Statistics (2013).



Figure 2: Map of trade partner countries of Lesotho's mohair

Source: ITC (2013).