

**AN ANALYSIS OF THE CAUSAL RELATIONSHIP BETWEEN
AGRICULTURAL EXPORTS AND ECONOMIC GROWTH IN NAMIBIA**

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ABSTRACT

This paper investigates the Granger causality between agricultural exports and economic growth in Namibia over the period 1998 – 2016. The study used the simple pairwise Granger causality to determine the existence of such a relationship. An Augmented Dickey-Fuller (ADF) test was used to test for stationarity. The results of the study found that there was no causality running from either economic growth or agricultural exports as both variables are independent. Based on the findings, it is recommended that government should promote and diversify agricultural exports in order to promote economic health and increase the benefits of this sector by encouraging the concept of farming. There is also a need to develop policies to give confidence to both domestic and foreign investors in assisting the agricultural sector. It is clear from the study that agricultural exports do not contribute to economic growth thus the direct contribution of primary exports to economic growth needs to be considered in relation to the degree of impact.

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LIST OF ABBREVIATIONS / ACRONYMS

- (Agribank) Agricultural Bank of Namibia
- (AALS) Affirmative Action Loan Scheme
- (BON) Bank of Namibia
- (EU) European Union
- (EPZ) Exporting Processing Zone
- (GDP) Gross Domestic Product
- (HPP) Harambee Prosperity Plan
- (MAWRD) Ministry of Water and Rural Development
- (MAWF) Ministry of Water and Forestry
- (NCA) Northern Communal Areas
- (NDP4) National Development Plan
- (NPC) National Planning Commission
- (NSA) Namibia Statistics Agency
- (PPPA) Public Private Partnership and Agreements
- (PTO) Permission to occupy
- (SACU) Southern African Customs Union
- (SOE) State Owned Enterprises
- (SONA) State of the Nation Address
- (SWAPO) South West Africa People's Organisation
- (UN) United Nations
- (VCF) Veterinary Cordon Fence

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DEDICATION

I am dedicating this thesis to my late Father Oskar Nikodemus “Mpingana” Mbeeli who has meant so much to me. Although he is no longer of this world, his memories continue to regulate my life. He was my inspiration and taught me most of the principles which I uphold today. I will always cherish what you taught us Dad, integrity, values and doing the right thing amongst the odds. Last but not least I am also dedicating this paper to my mother Hileni Ndinelago GwaKakulu Mbeeli who raised me and taught me how to speak my mother tongue. You have done exceptionally well as we did not have the privilege of learning our home language in schools. Thank you, Mum, for being our loving Queen. May the Lord Almighty continue to bless you with more years of good health. Amen!

DECLARATION

I, Klaudia Mbeeli, hereby declares that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.

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Name of Student	Signature	Date

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Namibia is a small country with a sizeable population of around 2.59 million people (Namibia population, 2018). The Namibian economy is characterised as relatively small compared to other African countries, as it relies significantly on the extraction of minerals, fish and agricultural products that are exported in a raw form (National Planning Commission-NPC (2012). Although Namibia is classified as an upper middle-income country, there is an extreme imbalance between income groups, which depicts an extreme prevalence of poverty, contradicting the country's upper-middle income status (NPC, 2014). This is caused by unequal distribution of income where there is income inequalities where natural resources are not available, a high unemployment rate where high costs of living with poverty are encountered and undue bureaucracy (Eita, 2010; Teweldemedhin, 2015).

About 70% of Namibia's population depends on agriculture for its livelihood, of which 25 to 40% is involved in subsistence farming (NPC, 2014). The rest of the framers are involved in commercial farming, which contributes between 5-6% to Namibia's GDP, constituting roughly 10.7% of total Namibian exports (NPC 2014). Crop farming has endured challenges over the years as only 2% of Namibia's land receives sufficient rainfall to grow crops (NPC 2014). Despite Namibia's intention to increase agricultural exports, the weather has become more and more unreliable due to climate change. Such conditions affect crop farming to an extent that farmers have low productivity. Consequently, low productivity will imply low exports. As indicated by

(Alston and Pardey, 2014), low productivity levels and a slow growth of the agricultural sector are perceived as the main causes for low income and slow economic growth in developing countries. The implications for low productivity is that it affects foreign exchange earnings, depending on productivity and its factors which influence output levels in the economy and production. Thus, exports of goods and services represent one of the most important sources of foreign exchange income that eases the pressure on the balance of international trade and creating employment opportunities.

Namibia's terms of trade have an impact on the growth of the economy which has been running a trade deficit for quite some time, (Namibia Statistics Agency (NSA) (2015). The statistics indicate that Namibia exports 48.7% of its products whilst its imports are at 67.92%, (NSA, 2016). This practically means that as a country, Namibia imports more than it exports. Namibia's imports far exceed what it exports by 19.22%. If Namibia is serious about economic development and employment-creation then there is an urgent need to start producing more of the items it consumes. There is an indication that exports revenue grew by 20.9% for the 2017 financial year (NSA, 2017). However, the revenue was not sufficient to offset the trade deficit which Namibia had as it posted a negative trade balance amounting to N\$8,349 million (NSA, 2017). The state needs to encourage farmers to produce more, locally.

Agriculture contributes 9% to GDP of which 70% represents the output of livestock (Coleman, 2016). The agricultural and diamond mining industries have the largest employment opportunities. These sectors play a big role in achieving sustainable development. This follows that the government could achieve sustainable economic growth by spending time and money in upgrading these sectors. The significance of the sector is largely due to its potential for growth and job creation. As such, agriculture

continues to receive enormous support through government funded programmes, which are aimed at increasing productivity to ensure food security, creation of employment and poverty eradication as highlighted in both the National Development Plan (NDP) 4 and the Harambee Prosperity Plan (HPP). Most of the Namibian exports consist mainly of primary industrial products such as diamonds, uranium, zinc concentrate, gold, cattle and small stock, of which there could be a possibility of downward pressure on foreign revenue reserves as well as monthly import cover (Simon and Sheefeni, 2016). This is likely to undermine growth of the economy. On these grounds agriculture, has received numerous support from Government to initiate support programmes which are aimed at increasing productivity to ensure creation of employment, food security and poverty eradication (Agriculture Overview, 2016).

In order to have sustainable economic growth, some of the strategies highlighted by the pillars of the Harambee Prosperity Plan (HPP) on social progression, are to reduce and eradicate poverty (Government of Namibia, 2016). In order for Namibia to become self-reliant, this goal can be accomplished by expanding agricultural exports and producing more agricultural products than what is currently being produced in the country. The Government also aims at increasing its growth rate by 7%. However, in order to achieve this, it needs to prioritise its expenditure through State-Owned Enterprises (SOEs). This would in turn help to generate economic growth and create employment through, service delivery (Government of Namibia, 2016).

Where it will be funded through Public private partnerships and agreements (PPPA), the HPP needs to identify infrastructure, which should be upgraded. The HPP needs to implement some of these projects to improve agricultural output in communal areas to support food security and household levels in order to eradicate poverty through the Food Bank and other initiatives. There is a need to provide support to small-scale

input producers and upgrading their knowledge and technological skills in applying the best practices. To continue to increase the expansion of the green scheme programmes, it also needs to increase production and make fertilizer mixer plants available to farmers at affordable prices. Government will spearhead reforms which will be aimed at making the Namibian economy more competitive and in turn, improve its global competitiveness rankings (Government of Namibia, 2016).

The argument remains whether agricultural development is a precondition for industrialisation and economic growth in the Namibian context. For example (Schultz, 1964), identified several authors who argued that growth in the overall economy was dependant on the development of the agricultural sector. It is against this background that this study aims to further investigate the relationship between agricultural exports and economic growth in Namibia.

There are conflicting and mixed results in literature on agricultural exports and economic growth, such as the ones written by (Ekanayake, 1999) concludes that there was bi-directional causality between export growth and economic growth, (Hatemi-j, 2002) concludes that there is a bi-directional causality in exports, (Francis, Lyare & Lorde, 2007) concludes that no causality exists in Trinidad and Tobago. Muhammad (2010) concludes that there was a negative and insignificant relationship between economic growth and agricultural exports, whilst (Ziramba, 2011) concluded that a direct relationship occurs from exports to imports. Most empirical work supports the export-led economic growth hypothesis, but there is no overall consensus on this issue. Most of the findings indicate that exports have a statistically significant positive impact on economic growth.

Many of the studies that were conducted on the same variables have used various techniques; however, the Granger causality technique appears to be the most dominant one. Since no study was done on Namibia specifically, this study attempts to fill this gap. Thus, the causal dynamics between agriculture and economic growth is an empirical question worthy of further investigation.

1.2 Statement of the problem

Considering the weakening terms of trade, Namibia is still dependant on agricultural exports which have been faced with a number of challenges. This sector could still be improved and help influence the Gross Domestic Product (GDP). The relationship between agricultural exports and economic growth is indeed a recurrent debate, as to whether agricultural exports have a positive impact on the economy or not or whether imports result in or from economic growth.

Several studies (Tilton, 2012; Medina-Smith, 2001; Nshiinda & Ogbokor, 2013; Toyin, 2016; Simon & Sheefeni, 2016) studied the theoretical relationship between agricultural exports and economic growth, and there has been a lack of consensus by most of these writers. Most of the studies which have been conducted were on the basis of inter-country section data-sets but there are large differences between demographic structures and economies of different countries. The statistical methodology used by most researchers using time series data has concentrated on using simple Granger causality tests assuming that the data was stationary. The conclusion that may be drawn from their findings was that one may find or may not find a causal relationship between the two variables.

It is almost certain that the export of primary goods makes a country less competitive on the world market and such exports weigh less against manufactured goods exported by developing countries, resulting in deteriorating terms of trade. Despite the adverse terms, livestock is the backbone of the country which is dependent on agricultural exports (ODI, 2007) as whose impact on the economy has not been evaluated however if followed through has a lot of potential for growth and job creation through its market sector. This analysis attempts to fill this research gap complementing the study by (Simasiku and Sheefeni, 2017) which analysed the relationship between agricultural exports and economic growth in Namibia. The results of their study showed that agricultural exports have a positive and insignificant effect on economic growth while non-agricultural exports have a positive and significant effect on GDP. The aim being to further ascertain whether it is indeed the growth in agricultural exports that causes the economy to grow or whether it is the expansion in the economy that causes the growth in agriculture and how to improve on it.

The Namibian economic growth rate decreased from 6.4% in 2014 to 4.5% in 2015 (World Bank, 2016). This negative growth was attributed by ongoing massive extractive sector investments and continued government stimulus, offsetting in part the effects of lower commodity prices, slower private sector credit growth and weaker agricultural production and exports stemming from drought and foot and mouth disease. The agricultural sector employs 70 percent of the population who were critically effected. It has been noted that economic growth has not been sufficient to manage inequality, poverty levels, and unemployment rates in Namibia. Furthermore, the persistent drought and adverse weather conditions experienced in the Southern Africa region constitute a major risk to growth in the agricultural sector.

Agriculture and forestry recorded a marginal contraction in 2015 due to drought, before recovering in 2016. There was a contraction in crop production of 0.2 percent in 2014/2015 compared to the previous year that recorded a significant growth of 6.5 percent (Bank of Namibia 2015). Furthermore a negative agricultural growth rate was experienced severely in rain-fed crop farming, whereby the maize triangle produced the lowest harvest in years, during 2015. Similarly, growth in livestock farming declined significantly compared to the previous years.

1.3 Research objectives

The objective of this study is to examine the causal relationship between agricultural exports and economic growth in the Namibian economy.

1.4 Hypotheses of the study

This study is designed to assess the hypothesis that there is a causal relationship between agricultural exports and economic growth in Namibia. In order to accomplish the objectives of the research, the researcher developed a hypothesis. The hypotheses of the study are stated as follows:

H₀: There is no causal relationship between agricultural exports and economic growth

H₁: There is a causal relationship between agricultural exports and economic growth

1.5 Significance of the study

This study is relevant as it will give more insight into the Namibian context of uncovering the causal relationship of agricultural exports and economic growth. The study will be a valuable source of material for policy makers not only for Namibia but for the international markets, as well. Policy makers need to know the factors that

affect exports, and how exports contribute to the GDP of the country. Past empirical studies have conflicting evidence and a lack of consensus on the effects of agriculture on economic growth, remains. Many researchers have paid much attention to agricultural exports and economic growth and have not paid attention to the direction of causality. As there are no specific studies regarding this topic on Namibia, the current study intends to provide a better understanding of the defined relationship.

1.6 Limitations of the study

The study focused on Namibia only, as there is no specific indicator for agricultural exports, thus an aggregate agricultural export index was utilised. However, if there was disaggregated data, the results could potentially point in a different manner. The study will be limited to the agricultural products that are exported and not the agricultural products that are used for domestic purposes. The study could not cover earlier periods because of the absence of data from prior years.

1.7 Delimitation of the study

The period covered by this study was between 1998 and 2016. The study looked at the different components that make up the agricultural exports such as livestock, beef, crops, vegetables, forestry, and dairy production. This study focused more on crop and livestock farming which are the primary products in agriculture. Agricultural exports operating outside of these parameters fell outside the scope of this study. The study made use of a statistical regression model to analyse these findings.

This paper consists of six sections. Section One is the introduction, followed by Section Two, the overview of the Namibian agricultural sector, Section Three reviews the related literature, while Section Four embarks on the methodology of the study,

section Five reviews the results and discussions and Section Six is the final section giving the conclusion of the study.

CHAPTER TWO

AN OVERVIEW OF THE NAMIBIAN AGRICULTURAL SECTOR

2.1 Introduction

The NSA classifies agriculture to include, hunting, as well as cultivation of crops, livestock farming and production. According to (Mendelsohn, 2006) about 78% of Namibians depend directly or indirectly on farming. The country produces its own crops such as maize, pearl millet, wheat, sorghum, corn and peanuts. Maize and pearl millet are considered to be the most important staple food in Namibia as more than 50% of the population consumes it (Namibia Agronomic Board, 2016). Mahangu, known as pearl millet is considered to be the major crop which is cultivated in Namibia, followed by maize and wheat. These crops are cultivated in eight regions, more especially in the northern parts of the country. Maize and millet can be produced in areas with poor rainfall and high temperatures of over 40 degrees Celsius.

Despite Namibia's intention to increase agricultural exports, it is exposed to harsh and erratic environmental conditions. Due to poor rainfall, the country could be affected by challenges such as drought and water shortages, resulting in animal deaths, crop failures, soil erosion, lack of agricultural land, and limited income-generating opportunities. The country has been facing challenges such as, severe drought and floods in recent years, which have resulted in a reduction of cereal output. A decrease in the production of cereal pushes cereal and import prices up. To assist in trying to boost agricultural production and sustain the farming and milling industries, the Government implemented a policy which makes maize and wheat, controlled crops, which means that, no maize meal or wheat flour may be imported into the country before all locally produced crops are procured (Namibia Agronomic Board, 2016).

Although Namibia produces its own crops such as maize, mahangu, wheat, millet, sorghum, corn and peanuts, maize and pearl millet are considered to be the most important staple food in Namibia as more than 50 % of the population consumes it (Namibia Agronomic Board, 2013). As far as productivity is concerned, the small-scale crop farmers survive on the low yields obtained in Mahangu farming (Namibia Agronomic Board, 2013). However, mahangu farmers are amongst the few farmers who have integrated a food storage system whereby they do not eat all the grain from the harvest but would rather store it in baskets for up to five years and longer. The stored food is used during the years of drought. Livestock is another agricultural activity which plays a major role in the livelihoods of rural communities, while beef is a major agricultural export. Beef is mainly exported to South Africa, the United Kingdom, Norway and the European Union.

2.2 Agriculture during the Colonial Period

Namibia's agricultural history started when Germany colonised it as of 1884 (Barker, Friedman, Kangumu, Slamang, von Wietersheim, 2015) and the country became known as German South West Africa. The colonial administration negotiated a number of land purchases and protection treaties with local leaders who gave the German Government and German companies the rights to use land (Adams, 1990). After the First World War, the League of Nations now the United Nations (UN) then mandated South Africa to administer the territory that was taken over by Germany. The United Nations introduced a trusteeship system to bring all former German colonies in Africa under the UN control. During this time, South Africa objected to the trusteeship and argued that the majority of the people were content with the South African rule instead. Furthermore, the legal arguments arose over the course of 20 years, where the UN General Assembly decided to end the South African rule which

had no further rights to administer the territory of South West Africa and for it to come under the direct responsibility of the UN. Wallis (2000) noted that the League of Nations was then dissolved in 1946. Namibia's colonial and apartheid era resulted from the absence of land that was available at the time and was taken away from them by their colonisers. It was common practice that precolonial communities owned most of the land, in Namibia (Werner, 1993).

2.3 Agriculture under German Colonial Rule

Germany ruled Namibia under an Imperial Ordinance of 1896. They took over the colonial administration and converted a number of land purchases and protection treaties with local leaders in order to give the German Government and its companies rights to use land. This was in order to develop the country to become self-reliant. The German Governor Theodor Leutwein did not see potential in the Owambo people's land (North central areas) and did not see it being attractive enough for white settlers to settle on it. The Owambo chiefs refused to "come into an agreement and sign off the protection treaties with the German colonials, who were not strong enough to conquer the Owambo military" (Government of Namibia, 1991, p.47). This resistance resulted in the native reserve proclamation which did not affect Owamboland, Kavango and other areas which are located outside of the white farming areas under the administration of government appointed commissioners.

Similarly, the Southern chiefs were also not keen to surrender their land to the German administration. Failure in occupying land led to the German colonial government being specific in expropriating land from the Namas and Herero people who tried to resist their forces in order not to lose their land. As a result, many of them died during this

process at the hands of the Germans who made concerted efforts to improve the agricultural basis of the colony, through cattle breeding, and sheep imports.

Towards the end of 1905, Namibians were only allowed to own land in the police zone, this area was occupied by white settlers who required a special permit from the Governor. Furthermore, a large number of “blacks were disposed of their right to land which was intended to provide the white settlers with land while the blacks were denied access to the same land denying them access to commercial agricultural production and forcing them into wage labour” (Werner 1991, p.43). There were numerous opportunities that could have been explored by the Germans such as mining, but farming was the most beneficial activity to them as land was granted to them at extremely low prices. Mendelsohn (2006) is of the opinion that the German administration has made a significant impact, as it placed a lot of effort into producing a variety of food products, as Namibia has been Germany’s main supplier of primary commodities such as cattle, karakul pelts, fish, sheep, goat skins, cow hides, meat and cheese.

2.4 The South African Apartheid Rule

The German rule came to an end during World War I, when the South African troops under the British flag led by Louis Botha, defeated the Germans in the then German South West Africa. The League of Nations then placed Namibia under the South African mandate in 1915; they followed a policy of settling poor South African whites on land which was known to be crowned the land of South West Africa. This meant that the Governor could easily decide on issues arising, which were inclusive of the apportionment of land, because he had legislative rights. They allowed the white population to administer the county’s affairs in that jurisdiction. This law stated that

black Namibians could not be employed by owners of the land where they were not permitted to squat on, without special permission by the Governor or Chief of the Districts. This resulted in the administrators setting aside some areas for use and occupation by the native settlers. Adams, Werner and Vale, (1990) indicated that during the military period many Africans managed to regain some of their ancestral land which was occupied by the South Africans whilst others were allowed to squat on the settlers' farms and graze their cattle as a means of payment.

The South African administration gave preference to white farmers and allowed them to receive generous loans in order to buy livestock, to build boreholes and dams whilst almost nothing was spent on the black farmers who lived on reserves at around the same period (Odendaal, 2011). This administration allowed more land to be sold to the white farmers. It became a clear indication that the South West African administration had supported white settlement farmers despite the challenges of having a lack of markets due to the financial depression which was prevalent. Thus, the black farmers felt neglected due to preference being given to the white farmers as opposed to the way they were treated.

The South Africans were indeed in need of land for resettlement whilst the union introduced a policy of moving a few poor farmers from South Africa into the southern parts of Namibia. The South African administration did everything in their power to support white farmers who settled in Namibia, they paid little attention to the needs of the native black farmers. The apartheid South African administration had been issued with a license in order to occupy and utilise land freely. This meant that the South West African constitution being repealed, allowed the administrators to carry out various administrative duties in Namibia.

Despite the South African administration assisting with the changing of the agricultural complexity, diversity of production was replaced with monoculture which negatively influenced agriculture in Namibia (Mendelsohn, 2003). It has become evident that the South African colony was more oppressive than the German colony as it had more apartheid policies which had stringent application processes in order to apply for land.

2.5 Agriculture under the South African Administration

Since 1980 the total agricultural exports were ZAR132 million which has increased over the years by almost double the amount reaching ZAR294 million in 1989. However, during 1982, 1983 and 1984, the economy took a downturn of which less agricultural exports were delivered due to possible poor rainfall season that occurred. Not enough products were being produced as it required experienced skills to grow the crops. Whilst in 1980 the total exports in the same period amounted to ZAR1138 million and has increased to ZAR2672 million at the end of 1982. During that time the exports have exceeded the imports volumes. The volumes of the same period for imports were ZAR-902 million as opposed to ZAR-2340 million thus indicating a positive trade balance of ZAR332 million.

Table 2.1 Gross domestic product by activity

Rand million AT CURRENT PRICES	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agricultural exports	132	174	121	78	95	128	157	242	258	294
Fish exports	13	23	31	32	25	44	39	63	94	65
Mineral exports	908	657	755	75	851	1284	1645	1307	1555	2027
Manufactured exports	53	52	59	68	68	74	80	98	120	135
All other exports	32	40	44	49	62	63	73	87	114	152
TOTAL EXPORTS	1138	947	1009	941	1101	1593	1994	1796	2141	2672
TOTAL IMPORTS	-902	-1083	-1124	-1024	-1176	-1272	-1552	-1882	-2077	-2340
TRADE BALANCE	236	-136	-115	-83	-75	321	442	-86	64	332

**Source Statistical/Economic Review, Ministry of Finance 2000*

Table 2.1 indicates that the export volumes show a major increase of just over the double figures whilst with the total imports indicate a negative amount of ZAR-2340 million, meaning that more goods were exported compared to imports.

2.6 The Red line

One of the vestiges of the colonial administration which continue to haunt the post-independence government is the Red Line. This is a demarcation in the form of a fence erected by the German administration in 1896 to control the spread of the Rinderpest (Schneider, 2011). The Red Line was retained and maintained by the South African administration to control Foot and Mouth and other animal diseases with serious implications for the farmers north of the Red Line. Farmers north of the Red Line are not allowed to export their meat to South Africa and other markets. Most farmers in the northern communal areas (NCA) still market their cattle through informal markets, instead of formal markets. This makes it difficult for farmers that are excluded from exporting their meat products, especially those situated in the northern parts of Namibia, which includes the four (4) O regions such as Oshana, Omusati, Omaheke,

Oshikoto as well as those regions in the north eastern parts of the country, such as Kavango east, Kavango west, Zambezi, and Kunene (Meyn 2007). This prohibition restricts these regions from making full use of such opportunities.

For veterinary control purposes, the abattoirs which are based in Kavango and Oshakati are owned by Government but are managed by Meatco. These abattoirs are expected to adhere to the requirements of effective disease control in accordance to international trade regulations which prohibits the movement of livestock products from the Northern Communal Areas (NCA). Namibia is required to invest in disease control strategies in order to include communal farmers in commercial farming activities and to be allowed to export meat to the EU countries.

According to (Meyn 2007), meat sold through the NCA is restricted from being exported to EU countries, due to possible veterinary risks it may hold. Should there be non-compliance from the NCA, there are consequences that the whole country would be prohibited and lose the lucrative European Union (EU) market. This could disable the Namibian industry and it could lose its competitive advantage over South African producers and perhaps lose its customer base. Such a situation will create a negative impact on the Namibian livestock sector, as it will jeopardise the export ability of the country.

2.7 Land Policy Post-Independence

One of SWAPO's main objectives for the liberation struggle was to right the wrongs of the past in land distribution. Thus, shortly after Independence the land reform program was stipulated in order to bring about change to the country's agricultural systems as well as the unfairness that eroded during the colonial period. Where the Land reform conference was held for the first time in 1991 in Windhoek, where its aim

was to create policies, legislation and procedures on how the programme should operate. The land reform conference was held for the first time in 1991 in Windhoek. The aim of the conference was to create policies, legislation and procedures on how the programme should operate. However due to a lack of expertise, skills, inadequate procedures and policies it has taken government many years to pass the first legislation on the land reform program. For 28 years of Namibia's Independence the majority of the people are still crying for access to own a piece of land. Subsequently the land reform program is not working according to how it was established. In the absence of the plan not working a second land conference was scheduled in 2016, and was postponed to take place in 2017 and then finally scheduled to take place in October 2018 in Windhoek.

Since the Land Resettlement Programme, started Government has avoided to expropriate farms, which were to be reallocated to previously disadvantaged people, who were given the first opportunity have the opportunity as a farm owner to sell it (Odendaal 2011). This gives the government the preferential right to buy farms at market value from the seller. Where land was supposed to be distributed from the white minority and reallocated to previously disadvantaged Namibians (Melber, 2017). The concept of willing buyer, willing seller principle was then brought into account where the statistics indicates that 1,030 households have been resettled since 2002 (Odendaal, 2011).

After independence, the government of Namibia inherited many of the colonial legacies, such as unequal distribution of agricultural land. Namibia was divided by its colonisers and it remained with two different land tenures, which was the commercial (freehold) and communal land. Communal land which belongs to the state is

distributed into small units and distribution thereof is done through traditional leaders. The first piece of legislation on land reform was the Agricultural (Commercial) Land Reform Act, which dealt with freehold land reform which was only passed and established in 1995.

In terms of commercial farms, government buys these farms from the commercial farmers and then allocates them to previously disadvantaged people. Such loans are made available to previously disadvantaged individuals with a repayment period of 25 years at lower interest rates through the Affirmative Action Loan Scheme (AALS) administered through the Agricultural Bank of Namibia (Agribank). As a result of the AALS 3.47 million hectares of land was distributed whereby 648 beneficiaries benefited, which costed the Government about N\$165.7 million in subsidies during the period of 1992 -2018 (NSA 2018). According to (Werner and Odendaal 2010) in order to qualify for the AALS scheme applicants’ assets in terms of livestock and cash should be considerable and the scheme was also not aimed at small scale farmers or poor Namibians. Since 1992, a total number of “882 farms were acquired through the AALS at Agribank in eight different regions namely; Hardap, //Kharas, Erongo, Omaheke, Otjozondjupa, Oshikoto, Kunene and Khomas. The total hectares covered under AALS farms was 6 261 090” (NSA 2018, p.42).

Table 2.2 Affirmative Land Acquisition Programmes funded by Agribank

	Number of Loans	Total Hectares	Amount Granted (N\$)	%Amount Granted
1992-2000	248	1 425 282.0683	165 777 728.60	21%
2001-2010	374	1 872 776.8067	526 632 153.41	68%
2011-2018	26	109 309.7709	85 044 057.00	11%
	648	3 407 368.6459	777 453 939.01	100%

Source: Namibia Land Statistics, 2018

Another government land redistribution program is the Resettlement program. According to the (NRP 2001, p.5) in order to qualify for land on a resettlement farm, “an applicant needs to be a Namibian citizen, who should be above 18 years of age and in case of an applicant being older than 65 years, he/she are anticipated to be represented by a person within a productive age whereby they should be prepared to give up any land rights which they own elsewhere.” It is also expected that they should have some agricultural experience, must be prepared to grasp the land under the leasehold tenure arrangements which could possibly be granted after a 2-year probation period. The applicant should be literate and should also own between 0-149 large stock as well as 800 small stock items. Applicants who are from the minority and have been disadvantaged the most should be given special care alongside with those who are highly advanced and skilled farmers.

Table 2.3 Distribution of National Resettlement farms per region

Region/Place	Number of Farms	Total Farm Land (Ha)	Total Beneficiaries Resettled	Average Beneficiaries per Farm	Average Area size (Ha) per Beneficiaries
Total	443	3 021 959.91	5 352	188	11 745
//Kharas	95	927 366.63	218	2	4 254
Hardap	91	689 445.07	371	4	1 858
Omaheke	88	462 220.27	1 443	16	320
Otjozondjupa	60	282 549.39	467	8	605
Erongo	25	211 067.24	90	4	2 345
Farms under the Division of the Marginalised Community	22	116 606.59	864	39	135
Oshikoto	17	64 558.02	1 494	88	43
Kunene	16	93 193.83	194	12	480
Queen Sofia Resettlement Project	15	88 669.39	89	6	996
Khomas	14	86 283.47	122	9	707

***Source: Namibia Land Statistics, 2018**

The statistics in the Table 2.3 indicates that the period between 2008 until 2018 “a total number of 443 farms were acquired through the resettlement programme of which this area space covered 3,021,959.91” (NSA 2018, p.36). In addition to these farms that

were resettled, there were 53 farms which were transferred from the Ministry of Water and Forestry (MAWF) for resettlement purposes; this brought the total numbers of farms to that were resettled to 496. However, since 2002 to 2018 a total of 1030 households have been resettled. The regions that topped the list of beneficiaries who were resettled are Hardap, Khomas, Omaheke, Otjozondjupa.

The land reform program in Namibia is not working as well as many people anticipated it to work. There seems to be no clear guideline on how to administer the land resettlement programme (Odendaal, 2011). However, many people found it to be unfair due to post-colonial change which has become evident. It would be difficult to find a partial satisfactory solution to such intricate problems. This is with no doubt that the colonised people of Namibia expected independence to bring an advanced improvement into the people's standard of living.

A few recommendations were given by (Werner and Odendaal, 2010) on the resettlement policy to come up with a minimum farm sizes on which should be based on available economic and financial data with a view of adjusting such sizes. The farms should enable beneficiaries in the predominantly cattle farming areas to generate from their allocation revenues levels similar to those generated by small stock farmers in the south. More flexibility is needed in order to give beneficiaries the right to transfer their land allocation to somebody else. However, the evidence that is available suggests that poor asset beneficiaries are unlikely to make a success of their land allocations.

NSA (2018) identifies that there is a huge need for responsible institutions to generate central land statistics on a database through website where these statistics can be easily located. Namibia would need to adopt clear guidelines on its land tenure classification

system which should be regularly updated and reported. In order for an efficient and effective recording service there is a need to classify land correctly for both development and planning to be able to classify what constitutes as state land.

2.8 Dualistic agricultural farming system

One of the colonial legacies is the existence of a dual agricultural system in Namibia. According to (Phololo, 2001) Namibia is characterised by a dualistic agricultural sector where a strong commercial sector exists alongside a subsistence sector which is comprised of households in communal areas. This dualistic character of the sector was inherited from the apartheid government where the minority of the population obtained most of its land. A small-scale sector occurs on land that is communally-administered, whereas the commercial sector largely exists on the title deeds. White farmers were given subsidies for settlements, dams, breeding stock and loans, during the colonial period or Apartheid era. As described above the Namibian agricultural sector faces challenges of agricultural land reform and resettlements which are the key pillars of the legal framework which should be put in place (Alden and Anseeuw, 2000). Such framework consist of agricultural development policies, which includes restructuring of existing commercial sectors, the improvement of skills and the creation of investments on communal farms.

2.8.1 Commercial Farming

According to (NSA, 2018) there is 39,728,364 million hectares of freehold agricultural (commercial) land which constitutes to 27,863,813 hectares which is equivalent to 70.1 % of the land which is acquired and owned by previously advantaged Namibians. There are about 4000 designated commercial farms (World Development Bank, 2016). About 3 000 of these farms are owned by whites, of which most are fenced-in and are

accessible by constructed farm roads. Namibia’s commercial farms are usually large and produce more meat products for domestic consumption as well as for export markets. The Meat Board of Namibia, statistics has estimated that 4500 commercial farmers own title deeds. Commercial livestock production accounts for almost 70% of agricultural output. The commercial farmers in Namibia mainly farm with cattle and sheep. The majority of the sheep produces lamb and mutton, while cattle produce meat, especially beef, which is mainly used for own consumption and for exports to the EU countries, as well as to South Africa, particularly. It has also been acknowledged that beef accounts for the largest share of the sector and according to the meat board its export is expected to increase as it is the main export product within the agricultural sector. During the German colonial rule many European settlers bought or leased land for commercial farming purposes.

Table 2.4 Agricultural (Commercial) land by ownership

OWNERSHIP	NUMBER OF FARMS	% FARMS	HECTARES	% HECTARES
Total	12 382	100.00	39 728 364	100.00
Individual	7 839	63.31	20 729 734	52.18
Companies (PTY & CC)	2 859	23.09	12 518 657	31.51
Government	1 265	10.22	5 491 110	13.82
Estate	172	1.39	95 795	0.24
Trust	159	1.28	697 742	1.76
Church	61	0.49	136 088	0.34
Farmers Association	18	0.15	18 137	0.05
Foundation	9	0.07	41 102	0.10

***Source: Namibia Land Statistics 2018**

Table 2.4 indicates that there is a total of 12 382 commercial farms and these portions of farms within the country account for 39.7 million hectares of which 97.7 % is owned by Namibians. This benefit is broken down to 39.7 million hectares of land of which (34 million hectares) are privately owned which equals to 86 % while government owns the remaining 5.4 million hectares of land which equates to 14%. According to

the Agricultural Survey conducted by the (NSA, 2004) covering the period 1996 – 2003, gives the breakdown of livestock in commercial sector as indicated in Table 2.5

Table 2.5 Number and distribution of cattle by type

Season	Bulls	Female Calves	Cows	Male Calves	Heifers	Oxen	Tollies	Barren Cows	Total Cattle	
									Male	Female
1996/97	38,109	87,232	260,844	80,216	76,460	94,316	60,923	9,147	273,562	433,684
1997/98	31,293	76,460	229,871	67,714	98,732	72,908	54,759	32,109	226,672	437,171
1998/99	52,734	133,515	313,959	106,949	102,042	118,208	83,447	11,455	361,335	560,971
1999/00	30,371	73,328	184,218	61,071	67,929	79,702	47,556	4,913	218,698	330,390
2000/01	39,638	113,916	336,986	89,219	99,313	108,852	84,306	10,083	322,015	560,300
2001/02	34,180	95,148	281,490	75,545	94,061	114,409	78,975	6,393	303,110	477,091
2002/03	40,302	92,932	266,074	76,156	91,940	113,295	75,655	5,789	305,406	456,140

**Source: Namibia Statistics Agency 2004*

The results indicate that for the period 1996 – 2003, there has been a gradual increase year-on-year with the different types of livestock. However, the separation of the commercial farming areas by cordoning off the Veterinary Cordon Fence (VCF) has an adverse effect on the growth of Namibia’s livestock. Although there is an increase in cattle being slaughtered through abattoirs, mainly south of the VCF, this exceeds cattle slaughtered at abattoirs north of the veterinary cordon fence livestock has increased over the period 1996 – 2003.

Table 2.6 Number and distribution of cattle by type

Type of Cattle	Total Number of Cattle	Number of Cattle owned by female house hold members	%	Number of Cattle owned by male house hold members	%
Bulls	70,856	13,280	18.7	57,576	83.6
Cows	364,963	84,691	23.2	280,272	79.7
Heifers	121,717	24,924	20.5	96,793	82.1
Female calves less than 1 year	88,921	21,558	24.2	67,363	78.8
Male calves less than 1 year	72,755	13,899	19.1	58,856	83.3
Tollies 1-3 years	77,204	14,982	19.4	62,222	83
Oxen	75,812	16,143	21.3	59,669	81.4
Total	872,228	189,477	21.7	682,751	78.3

**Source: Namibia Statistics Agency 2015*

When looking at table 2.6 and comparing it to figures in Table of 2.5, the statistics indicates figure has almost doubled over the years. Besides the European exports,

livestock transported to Angola has also increased over the year 2017 and declined during the 2018; this was due to limited trade allowed to prevent the sell-out of Namibian cattle genetics with the neighbouring country.

Table 2.7 Cereal Production (tons) by Region and type of crop

Financial year	Area planted (ha)	Local production marketed (t)	Grain imports (t)**	Flour exports (t)*	Flour exports in equivalent of grain (t)*	Netto domestic consumption (t)	Floor price (N\$/t)
2005–2006	2 435	12 987	73 411	3 065	2 759	83 639	1 851.00
2006–2007	2 136	12 312	58 227	85	77	70 462	1 855.18
2007–2008	2 369	12 163	61 665	4 623	4 161	69 667	3 065.90
2008–2009	2 734	11 626	51 014	5 543	4 989	57 651	3 466.07
2009–2010	1 852	12 448	64 661	500	450	76 659	2 716.35
2010–2011	2 389	11 511	69 519	-	-	81 031	2 699.74
2011 - 2012	2 136	11 930	84 543	11 100	9 990	86 483	3 138.49
2012 - 2013	2 314	14 819	87 726	1 000	900	101 645	3 947.95
2013 - 2014	2 198	11 312	85 257	2 644	1 983	94 586	4 197.02
2014 - 2015	2 032	11 600	103 035	0	0	114 635	3 923.11
2015 - 2016	2 077	11 411	95 190	0	0	106 601	4 624.84
2016 - 2017	1 832	9 822	121 261	0	0	131 083	4 849.59

*Wheaten Flour exported: Exported tonnage of flour = approximately 25 % to equal tonnage of unmilled grain for the calculation of a realistic total consumption

** Import/export information (volumes) based on border receipts and permits issued. Imports via Walvis Bay only based on permits issued.

***Source: Agronomic Board 2017**

The cereal production relates to cereals including mahangu, sorghum and maize, according to statistics, crop production has had a seesaw period of good production in times of good rainfall periods and a slowed growth in times of drought. During the period from 2005 the crops that were marketed were 12,987 tonnes but decreased in 2017 to 9,822 tonnes. However, the analysis of the area of crops planted in 2005 was 2,435 hectares whereas in 2017 only 1,832 hectares was planted, which could have affected the figures. The statistics indicate that domestic wheat consumption grew drastically as larger quantities of wheat were imported due to the increased demand in pasta. Table 2.7 indicates that a total of 1,832 hectares were used to plant wheat in the Hardap irrigation scheme for the 2017 year, whilst 2077 hectares were planted during the previous year. However, the harvest of 9,822 tonnes was the lowest wheat harvest the industry has seen over the years. The cost of producing mahangu increased in 2017, to N\$5,400 per tonne from the price of N\$4,386 per tonne. The increase has

negatively impacted on the actual price of the mahangu seed, related labour costs and the cost of equipment maintenance and has caused these prices to increase (Agronomic Board, 2017).

2.8.2 Subsistence Farming

Livestock farming has become one of the few options for land use in many parts of the country. Namibia has a climatic rainfall that affects the aridity and poor soil that produces livestock production. The country is very dry where most communal farms have smaller portions of land unlike commercial farms which are much larger pieces of land. However, subsistence farming in Namibia constitutes mainly of animal products, live animals such as cattle, goats and sheep and crop farming, which includes vegetables cereals, main crops such as maize, wheat, mahangu which are referred to as pearl millet, and sorghum. Such harvests are mostly consumed by the farmers themselves or either sold to local markets in order to earn a living. Some of these harvests are affected by poor rainfall, which compels farmers to ensure that they store some of the harvests that are harvested during good years.

Table 2.8 Area under crop production and yield by type of crop

Major crop	Number of Households	Area under crop (ha)	Yield (tonnes/ha)	Production (tonnes)
Maize	17 620	34 991	1.60	55 985.60
Sorghum	24 646	7 043	1.24	8 733.32
Millet/mahangu	129 029	421 212.6	0.97	408 576.22
Total		463 247.6		473 295.1

**Source: Namibia Statistics Agency 2015*

The majority of households produce mahangu as the major crop. The area which is under crop production of mahangu covers an estimated area of production of 421 212.6

hectares. As indicated in table 2.8 the biggest crop produced is mahangu which totals 408 576 tonnes followed by maize 55 985 tonnes and sorghum with 8 733 tonnes.

There is about 25–40 % of Namibians who depend on subsistence agriculture and herding, as their main source of income. Thus, the majority of Namibians live in rural areas and one can say they depend on a subsistence way of life. Subsistence crop farming is usually practiced in the north and north eastern parts of the country, where it is the biggest producers of wheat and maize.

Table 2.9 below indicates the different small stock by their type. The table indicates that the boerbok goats were the largest goats reared in Namibia, followed by the dorper and thirdly the damara goats. Although subsistence farmers may not have a lot of cattle to farm with, it is indicated in the table above that the majority prefer to farm with goats in order to sustain a profitable business.

Table 2.9 Farms by type of small stock reared during the past 12 months

Type of small stock	Number of farms	%
Goats		
Boerbok	1036	40.5
Kalahari red	58	2.3
Savanna	21	0.8
Other goats	325	12.7
Sheep		
Swakara	171	6.7
Damara	355	13.9
Dorper	670	26.2
Meatmaster	75	2.9
Persian	120	4.7
Other sheep	447	17.5
Total*	2 555	

**Source Namibia Statistics Agency 2015*

Table 2.9 above indicates the numbers of livestock owned by region. The statistics indicate that from 1996 -2003 livestock has increased over good years and decreased during the years of drought. In the good years, livestock has increased due to reproduction of the cattle. From these statistics one can determine that there has been accelerated growth over the years, which has negatively impacted the economy.

Table 2.10 Number of cattle owned by type and region

Region	Season	Bulls	Female Calves	Cows	Male Calves	Heifers	Oxen	Tollies	Barren Cows	Total Cattle	
										Male	Female
Caprivi	1996/97	2,433	18,098	54,466	13,574	10,930	20,535	10,345	1,825	46,887	85,319
	1997/98	1,755	11,883	35,801	6,374	6,247	16,794	2,148	1,108	27,071	55,039
	1998/99	3,905	24,339	59,017	17,369	16,128	24,757	15,043	2,660	61,074	102,144
	2000/01	4,282	20,331	92,358	18,430	12,135	23,151	13,182	1,429	59,045	126,253
	2001/02	3,527	21,989	65,149	16,684	20,210	28,738	14,585	1,303	63,534	108,651
	2002/03	3,534	21,208	62,503	16,042	19,279	27,457	13,737	1,311	60,770	104,301
Kavango	1996/97	2,281	12,170	36,782	8,860	8,909	18,411	6,010	1,432	35,562	59,293
	1997/98	1,975	10,800	32,090	7,627	8,908	15,697	3,322	3,772	28,621	55,570
	1998/99	3,420	12,691	33,323	9,823	5,217	15,185	4,356	1,464	32,784	52,695
	2000/01	3,957	20,372	45,708	13,133	4,827	17,785	6,214	5,277	41,089	76,184
	2001/02	3,760	12,569	40,465	8,935	7,276	17,661	7,534	745	37,890	61,055
	2002/03	6,664	18,732	53,004	11,942	10,350	35,536	9,048	2,061	63,190	84,147
Ohangwena	1996/97	13,221	24,093	62,534	28,889	22,821	32,559	13,850	953	88,519	110,401
	1997/98	9,592	17,869	51,198	17,232	28,625	18,279	17,262	1,224	62,365	98,916
	1998/99	13,763	32,067	68,395	31,622	27,054	27,159	28,937	2,757	101,481	130,273
	1999/00	14,087	27,047	62,860	21,890	22,284	40,891	14,422	1,756	91,290	113,947
	2000/01	8,670	18,433	61,939	16,323	20,371	30,923	21,116	1,208	77,032	101,951
	2001/02	5,112	15,944	46,057	10,303	15,581	30,898	11,397	1,118	57,710	78,700
	2002/03	6,669	15,111	40,647	13,396	14,253	23,665	12,784	299	56,514	70,310
Omusati	1996/97	9,626	11,452	40,799	10,207	12,015	11,204	17,057	1,460	48,094	65,726
	1997/98	8,395	14,849	46,143	15,682	32,842	6,839	16,324	23,125	47,240	116,959
	1998/99	17,355	29,876	69,626	23,350	31,176	33,030	18,286	2,911	92,021	133,589
	1999/00	7,401	20,711	53,892	19,198	19,042	20,357	15,240	986	62,196	94,631
	2000/01	11,955	22,968	57,256	17,982	31,030	14,823	23,709	1,043	68,469	112,297
	2001/02	11,033	20,068	52,974	17,950	20,254	15,095	16,138	2,338	60,216	95,634
	2002/03	14,228	14,731	46,652	12,936	21,924	10,987	19,165	1,269	57,316	84,576
Oshana	1996/97	5,749	5,566	22,362	5,143	5,746	2,146	3,762	786	16,800	34,460
	1997/98	3,476	6,196	24,640	5,604	8,224	3,914	4,247	2,334	17,241	41,394
	1998/99	8,247	15,950	30,735	12,228	8,974	6,967	8,277	908	35,719	56,567
	1999/00	3,510	10,951	33,303	8,688	8,021	1,695	7,654	1,627	21,547	53,902
	2000/01	5,685	14,088	29,314	8,012	12,344	5,201	6,675	511	25,573	56,257
	2001/02	3,769	7,935	25,784	7,645	10,179	4,888	9,156	263	25,458	44,161
	2002/03	4,388	6,695	24,631	10,021	7,098	4,367	6,691	170	25,467	38,594
Oshikoto	1996/97	4,798	15,854	43,900	13,542	16,040	9,459	9,901	2,691	37,700	78,485
	1997/98	6,098	14,862	39,999	15,194	13,886	11,385	11,457	546	44,134	69,293
	1998/99	6,044	18,592	52,862	12,555	13,494	11,109	8,548	755	38,256	85,703
	1999/00	5,374	14,619	34,164	11,294	18,582	16,758	10,239	545	43,665	67,910
	2000/01	5,090	17,725	50,411	15,340	18,607	16,968	13,409	615	50,807	87,358
	2001/02	6,979	16,643	51,060	14,030	20,561	17,128	20,165	626	58,302	88,890
	2002/03	4,818	16,454	38,636	11,818	18,444	11,283	14,230	678	42,149	74,212

**Source Namibia Statistics Agency 2003*

Whilst there are a number of communal farmers who have a considerable amount of cattle, the majority of communal farming households' cash income results from non-farming sources. Based on this, it is apparent that the Namibian subsistence farmers need more financial support in order to boost their agricultural activities. Despite these challenges, Government has been working tirelessly to focus on increasing the primary production on its communal lands.

2.9 Agricultural exports and imports

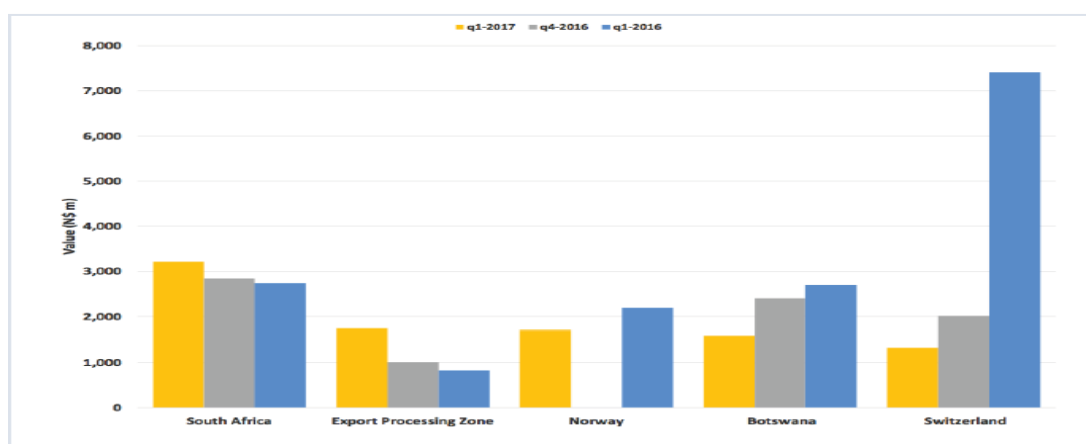
The total agricultural sector contributes 3.4% towards the (GDP) of the country, whilst the total goods that were exported was 17.6% of the total value of exports (BON, 2017). Regardless of the agricultural sector which contributes significantly to the livelihood of most of the population it contributes marginally towards GDP. Live animals form part of the top ten products that are exported out of the country which contribute 163.10 % (NSA, 2017). However commercial farming is considered to contribute between 5% and 6% of GDP (Odendaal, 2005), of which animal products entail sheep, goats, cattle, livestock products and crops which constitute the Namibian exports sector (Odendaal, 2005). The total trade statistics indicates that imports have once again exceeded the exports for the year 2018.

2.10 Agricultural exports to key markets

Exporting of products plays an important role as the country is unable to produce all its required goods and services. Exports have allowed free trade to occur with different markets as long as the respective country requirements are adhered. High standards need to be maintained especially when trading with EU Countries in order to meet the set requirements. Agricultural products are divided into two groups mainly livestock farming and crop farming and forestry. The agricultural products under livestock farming include, live animals, beef products, animal hides, dairy products, meat and edible meat offal. Whilst for crop farming and forestry it includes mahangu, maize, sorghum, wheat, sugar, cereals, horticulture products such as vegetables and fruits. The majority of Namibia's agricultural products are exported to EU countries more especially to neighbouring South Africa which dominates with the highest amount of goods exported. Whereas live cattle and beef products are exported to Angola, Japan, Switzerland, Germany, Italy, China and most recently to the United States of America.

Nevertheless South Africa receives mostly beef and beef products which are exported from Namibia, the demand for these products have also increased over the years.

Table 2.11 Main export destination



***Source Namibia Statistics Agency 2018**

Table 2.12 Main export destinations

Partner	q1-2017		q4-2016		q1-2016		%Δy/y	%Δq/q
	Value (N\$ m)	% share	Value (N\$ m)	% share	Value (N\$ m)	% share		
South Africa	3,213	19.0	2,844	18.7	2,741	12.5	17.2	13.0
Export Processing Zone	1,746	10.3	1,008	6.6	826	3.8	111.4	73.2
Norway	1,706	10.1	5	0.0	2,191	10.0	-22.1	32,774.9
Botswana	1,598	9.5	2,404	15.8	2,696	12.3	-40.7	-33.5
Switzerland	1,330	7.9	2,015	13.3	7,408	33.7	-82.0	-34.0
Belgium	811	4.8	643	4.2	364	1.7	122.6	26.1
Spain	718	4.2	551	3.6	667	3.0	7.7	30.3
United Arab Emirates	716	4.2	671	4.4	255	1.2	180.8	6.6
Italy	676	4.0	807	5.3	715	3.3	-5.4	-16.2
France	625	3.7	336	2.2	400	1.8	56.1	86.0
Other	3,765	22.3	3,886	25.6	3,701	16.9	1.7	-3.1
Total	16,905	100.0	15,171	100.0	21,963	100.0	-23.0	11.4

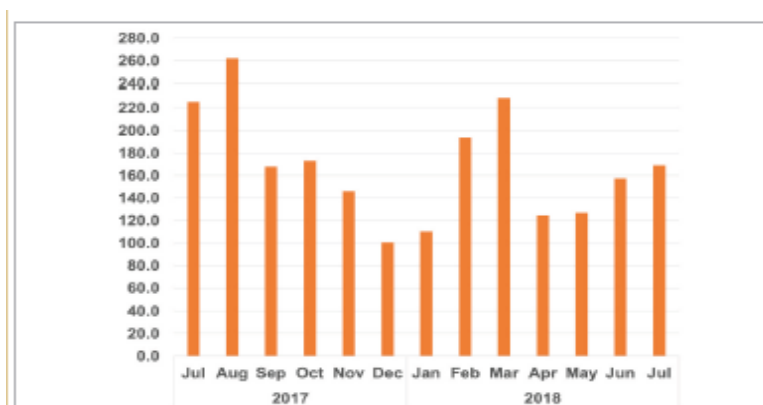
***Source Namibia Statistics Agency 2017**

Europe is becoming the leading market for fish and meat. Meanwhile the total value of goods exported was destined for Southern African Customs Union (SACU) which is Namibia's largest export destination, while the European Union (EU) occupies the second position. Equally, SACU remained the largest domestic imports destination,

accounting for more than 70% of the total imports (NSA, 2016). Both table 2.11 and 2.12 indicates the top countries where goods are exported to where table 2.11 indicates the main export destination in graph whilst table 2.12 indicates the main export destination in figures. As specified above, the major trading partners have not varied much in terms of trade over the past few years. Meanwhile, the total value of goods exported was destined for Southern African Customs Union (SACU), which is Namibia’s largest export destination. Equally, SACU remains the largest domestic imports accounting for more than 70% of the total imports (NSA, 2016).

2.11 Agricultural Products

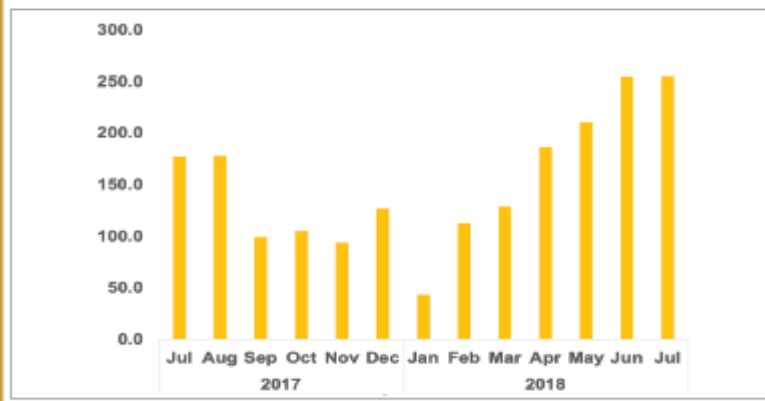
Table 2.13 Cattle live exported on hoof



** Source NSA livestock 2018*

As indicated in Table 2.13 Namibia’s live or marketed cattle are exported to South Africa and Angola. The total heads of cattle that was sold amounted to 420 646 (BON, 2018). The increase was due to higher marketing activities as most farmers anticipated drought whereas good rainfalls had been received during the past year.

Table 2.14 Live small stock exported to South Africa and Angola



**Source NSA livestock 2018*

Table 2.14 above indicates the statistics for small live stock which are exported to Small stock marketed includes goats and sheep which has been increasing over the past few months. The reason for increases in live cattle as well as small stock is due to effects resulting from veterinary restrictions imposed by South Africa during the 2016 year. Higher prices were also offered for the livestock by South African feedlots.

Table 2.15 Agricultural products

Main activity	Status of main Activity					Total
	Own account worker	Employer	Paid worker	Un-paid family worker	Task worker	
Crop production	127 247	967	5 088	128 167	4 458	265 927
Livestock production	17 913	752	5 214	13 584	751	38 214
Fisheries	470	64	161	31	-	726
Forestry	324	17	32	118	13	504
Horticulture	72	-	22	22	-	116
Fruit culture	-	-	78	51	18	147
Trader	2 258	396	1 457	309	48	4 468
Artisan	975	198	1 294	141	90	2 698
Agricultural paid job outside holding	212	331	2 566	65	155	3 329
Namibia	149 471	2 725	15 912	142 488	5 533	316 129

**Source Namibia Statistics Agency 2014*

Table 2.15 indicates the various agricultural products that are produced within the agricultural sector. This table indicates that crop production is with no doubt on the fore front as the majority of Namibians plant crops for daily consumption as well as for a source of living. The statistics indicates that exports together make up 67 % of the total value of goods that are exported. The highest growth rates for exports were

recorded with China, Belgium, Italy, and Botswana. Although the majority of goods being exported are directed to South Africa, this trade only grew by 2% whilst China's subsequently grew by 18.3 % of the total exports. This growth rate was attributed to an increase in mineral products, which was mainly exported to China, Belgium, Italy and Botswana.

2.12 Constraints to Agricultural Exports

The agriculture and forestry's contribution, which was significant in the early 1980's, have however started showing a steady decline. The agricultural sector is dominated by livestock farming, followed by crop farming. Years prior to 2005, crop farming had contributed more to the GDP than livestock farming. Lately, livestock farming is contributing more towards GDP than crop farming.

Table 2.16 Trade in Agricultural and livestock products

Product	Exports			
	1980	1990	2000	2002
Total	1,712	1,220	1,558	1,403
Agricultural	188.4	146.8	176.5	187.4
% agricultural	11.0	12.0	11.3	13.4
Livestock	188.4	146.8	93.7	68.1
% livestock	11.0	12.0	6.0	4.9

***Source Total trade in goods and services expressed in current US\$. Source: World Bank (2002) Agricultural trade refers to all agricultural products, while livestock trade refers to trade in livestock products and live animals. Source FAO (2005).**

Table 2.16 indicates the agricultural and livestock products which were exported in the early 1980's where the decline over the years has been observed. Marketing of livestock and crops is one of the constraints which are experienced by Namibian farmers, who compete with neighbouring countries, especially South Africa.

Table 2.17 Gross Domestic Product by Activity

Percentage Activity

Industry	2012	2013	2014	2015	2016
Agriculture and forestry	4.9	3.4	3.9	3.3	3.4
Livestock farming	3.0	1.9	2.4	1.9	2.0
Crop farming and forestry	1.9	1.5	1.6	1.4	1.4
Fishing and fish processing on board	3.1	3.0	2.8	2.6	2.9
Mining and quarrying	12.7	13.2	12.2	11.4	11.3
Diamond mining	7.6	8.7	9.0	7.9	6.6
Uranium	2.1	1.5	1.1	0.9	1.2
Metal ores	1.0	1.1	1.1	1.9	3.0
Other mining and quarrying	2.0	1.8	1.1	0.6	0.5
Primary industries	20.7	19.6	18.9	17.4	17.6

***Source Bank of Namibia 2017**

Table 2.17 indicates agriculture's percentage towards GDP where the percentage contribution has been on the decrease. Thus, one can conclude that the agricultural sector remains the back bone of the economy regardless of the declining contribution towards GDP.

This is where most of the goods are imported from, whereby transportation charges are added to the costs price which results in the consumer price increasing. When goods are imported it increases the overall production costs and limits the economies of scale. However, there is a limited market to export Namibian products to as not all products are allowed to be exported due to the restrictions enforced by government. Some of those restrictions are that Namibia's beef products are deboned before it can be dispatched to EU countries. Financial resources are another essential factor that affects the industry, especially in the production of animals, crop species such as

grapes, poultry, beef, hoodia, carcass and horticulture. This could affect the exchange rates where the country can be disadvantaged due to the appreciation of the domestic currency. This will have an effect by reducing the income received which will then affect the profit and reduce it.

According to the (Food and Agricultural Organisation, 2018) there is a scarcity of available land and as well as a lack of skills. Land is scarce and is not easily nor readily available at a fast pace. Despite land being scarce, crop farming and livestock compete for the same land, thus there is a shortage of land for both crop production and grazing. Most farmers do not produce sufficient harvests to last them throughout the year. Such households end up buying maize or millet for several months in order to sustain themselves throughout the remaining period of the year. The lack of skills refers to the fact that most farmers do not have the expertise or skills to grow crops. They neither have the skills for breeding livestock. This proves that in the past decade the self-sufficiency of the (NCA) have declined extremely.

Water is an essential part of this consideration as plants and animals rely on it for survival. Freehold land in Namibia is suited to livestock farming where there is a lot fertile land and plenty of rainfall. However, poor rainfalls affects the crop productivity, disabling them from growing as per expected levels especially during long periods of drought (Amadhila, 2016, Frøystad, Hoffman & Schade, 2008, Schmokel, 1985). Namibia has unpredictable weather conditions which could affect the production of wheat, maize and grapes. A vast part of the country's land is not suitable to grow wheat and crops due to poor soil texture. However, in the northern parts of the freehold commercial areas, more rainfall occurs where fertile land exists which is used for large-scale crop cultivation.

2.13 Agriculture: The Answer to Namibia's Unemployment

Most of the country's population are poor, as more than half of the population falls below the poverty line (NPC, 2014). The recent statistics of the country's, income share indicates that Namibia is a country with a substantive income disparity. A review of Namibia's labour market trends reveals that Namibia is not consistent with economic and social indicators. Namibia has recorded a negative growth in its labour, despite the country having a positive growth giving an indication that the population is growing. According to (Mwinga, 2012), there is a negative relationship between GDP growth and employment with the level of employment declining with positive growth of the economy.

Table 2.16 Unemployment by rate, sex and area 2014

	Number Employed	Labour Force	Unemployment rate
Namibia	278,245	990,998	28.1
Urban	138,793	529,187	26.2
Rural	139,453	461,810	30.2
Female	159,563	502,639	31.7
Male	118,682	488,359	24.3

**Source: Namibia Statistics Agency 2014*

Despite a high average economic growth (NSA, 2016) indicates that Namibia has a high unemployment rate of 34% of the work force compared to 28.1 percent reported in the 2014 year as indicated in table 2.16 above. According to the employment statistics (NSA, 2016), indicates that 207 000 people were employed in the agricultural sector in 2014, which represents 29 percent compared to 2016 year where this figure

drastically reduced to 136 000 people which represents 20 percent of the national workforce.

Table 2.19 Unemployment rate by sex and age group

Age group	Both Sexes			Male			Female		
	Unemployed	Labour force	Rate %	Unemployed	Labour force	Rate %	Unemployed	Labour force	Rate %
15 - 19	36,409	51,725	70.4	15,754	25,522	61.7	20,655	26,203	78.8
20 - 24	93,417	170,238	54.9	38,563	84,526	45.6	54,854	85,712	64.0
25 - 29	71,982	189,830	37.9	32,180	95,157	33.8	39,802	94,672	42.0
30 - 34	44,453	155,206	28.6	19,501	77,577	25.1	24,952	77,629	32.1
35 - 39	34,450	127,163	27.1	15,329	63,862	24.0	19,121	63,302	30.2
40 - 44	25,679	103,856	24.7	11,220	51,117	22.0	14,459	52,739	27.4
45 - 49	18,969	79,414	23.9	8,481	39,283	21.6	10,488	40,131	26.1
50 - 54	12,478	61,168	20.4	5,564	29,480	18.9	6,914	31,688	21.8
55 - 59	7,078	41,141	17.2	2,739	19,240	14.2	4,339	21,901	19.8
60 - 64	2,186	18,193	12.0	1,038	9,505	10.9	1,148	8,689	13.2
65 +	2,282	28,333	8.1	1,404	14,775	9.5	878	13,558	6.5
Namibia	349,383	1,026,268	34.0	151,774	510,044	29.8	197,609	516,224	38.3

**Source: Namibia Statistics Agency 2015*

Table 2.19 above indicates that despite employees being employed whether in the public or private sector, there is a huge amount of people who are still unemployed. Out of the 1,026,268 employed employees there are 349,383 people who are unemployed whether they are educated or not. The statistics also indicate that females are more unemployed than the male counterparts. The high unemployment in Namibia indicates that the economy is underperforming and is poor in shape, as too many people are jobless as work is scarce. Despite these fluctuations which are mainly due to climatic conditions, agriculture holds the key to reducing unemployment in Namibia. During his state of the nation address (SONA) 2018, the President announced a major initiative to mechanise agriculture in order to boost productivity. Increased productivity could lead to higher levels of employment in the sector through a number of value addition activities. Whereby such initiatives could help to boost the country's skills, knowledge and abilities, which would indeed have a positive effect

on people's abilities, confidence and competence levels, which would also then increase the productivity rates.

2.14 Summary

This chapter reviewed the historical as well as the current trends of the Namibian agricultural sector. It described how Namibia was colonised under the German and South African administration. The paper reviewed how land was acquired after the country became Independent. It provided the background to the dual nature of the sector, which is how commercial and subsistence farming came into existence. Considering that land reform has received lots of attention where black Namibians expected white previously advantaged Namibians to be removed, from their land. This study reviews how the agricultural exports affect the GDP of the country. Agriculture is considered to be the back-bone of the economy as it has widely affected the economy. This is because many people can be employed within the agricultural sector in order to reduce poverty and stimulate an increase in the production of agricultural products and the growth of industries/enterprises allied to agriculture.

CHAPTER THREE

LITERATURE REVIEW

3.1 Theoretical review

According to (Daneshjo, 2014) exports are defined as the exchange of goods or services between countries. Whilst analysing the benefits to trade, it is important to note in which sector goods being traded falls as it will impact the growth-rate which comes from exporting. Hwa (1988) clearly argues that agriculture is an engine of growth and added agriculture to the standard growth equation as a measure of linkages between the rural industrial sectors of the economy. There are numerous ways in which exports can cause an increase in productivity by imposing local demand into their products, utilisation of quality resources which can be offered to chosen countries.

In Namibia exports play a pivotal role in terms of trade for the development and growth of a national economy. Exports are part of the contributing factors towards the growth of the economy, as exports increases its growth helps the economy to grow. Economic growth is defined as an increase in the productive potential of the economy and is measured by the increase in a country's output over a period of time (Todaro, 2011). It has also been observed that most literature focus on exports as the only source of growth towards the economy but agricultures share towards exports has been significant in developing countries.

In theory the study by (Tilton, 2012) indicated that prices of most goods are dependent on their production costs thus a fall in prices of primary products is often accompanied by a corresponding or increasing fall in cost of production. The profits, producer surplus and wealth that the country realizes are rising, increasing the benefits it reaps

from its primary product production and trade. Thus, the price spike in agricultural commodity prices and the economic growth in many African countries lead to a renewed interest in the role of agriculture in development (World Development Report, World Bank, 2008) with focusing on agriculture as a landmark.

It is thus on this basis the relationship of exports to economic growth or simply the export led growth hypothesis is considered to be one of the main determinants of growth. Export-led economic growth can be used by developing countries to identify its strategies. One of the strategies will be to come up with projects that can generate profit which enables the investment to balance out and to exceed its liabilities. Export led growth can increase productivity by removing inefficiencies from the economy (Nshiinda and Ogbokor 2013). Whereas a high level of investment should stimulate growth, agricultural productivity is expected to have a positive effect on aggregate economic growth. Medina-Smith (2001) highlighted the increasing amounts of labour, capital within the economy, expanding exports, impact of investment, government expenditure and exports on the economy. Such factors take a look at macro-economic factors that drive the economy; one can consider the export of goods and services. Despite the fact that requests will always arise on whether exports contribute directly or indirectly to economic growth. The literature is however broad and it is important to identify the export-led hypothesis.

Past studies have indicated that exports are a contributing factor to economic growth through factors that were identified; (Toyin, 2016) claims that export-led growth explains that export focused countries have a greater capacity to attain advanced technologies that have been generated in leading countries. He further identified that output drives exports due to skills enhancements and technology. This will help to

increase efficiency and promote a comparative advantage for the country to be able to export more of its own products. Simon and Sheefeni (2016) claimed that exports and imports of goods and services from one country to another country plays an important role in the economic growth and development of a country. Many developing countries have since then realised how important it is to diversify exports despite absolute comparative advantage and primary commodity endowment.

3.2 Empirical Literature

There are a number of studies that were conducted in determining the causal relationship between agricultural exports and economic growth. A few selected studies are presented below:

The study by (Sharma and Dhakal, 1994) investigates causal relationship between exports in general and economic growth in 30 developing economies for the period of 1960 to 1988. The results confirmed the mixed impact of exports on these developing countries. In some countries, they observed export led growth while in some the results observed that growth led export, whereas no causal relationship was observed between export growth and output growth in the remaining countries. The study identifies a causal relationship between exports and output growth in five countries, export growth causes output growth in another six countries; and no causal relationship was observed between export growth and output growth in the remaining 11 countries. They also found that in 15 countries the foreign exchange rate caused export growth and that in 12 countries world output caused export growth. The study reveals that there can be a mixture of results when you have a cross sectional or many countries of results being assessed. As for Namibia, observing the fact that the wider the countries

the more mixed results will be obtained. The study suggests that Namibia, being relatively small, it will be doubtful that it would have a mixture of results.

Another study by (Krugman, 1985) was conducted which shows that export growth leads to income growth via the foreign trade multiplier where foreign exchange from exports can be used to finance imported manufactured and capital goods and technology which contributes to growth. He further argues that by combining the international market with the domestic market it facilitates larger-scale operations than does the domestic market alone. The Namibian market needs to make room for more exposure in international and domestic market in order for it to expand thoroughly.

Examining the causal relationship between economic growth and export growth (Ekanayake, 1999) used the error correction and co-integration models. The study covered eight Asian developing countries covering the period between the years of 1960 to 1997. The results of the study concluded that there was a bi-directional causality between export growth and economic growth in all the developing countries included in the analysis except for Malaysia. The study concludes that there was strong evidence for long run Granger causality in all the countries observed. The need arises to identify the countries developmental needs through economic growth and the production of agricultural products. Both variables are dependent on each other to determine their significance of error correction term. The study further suggests that agricultural exports performance is more adaptable to change in domestic factors.

Whilst the study by (Pandhi, 2002) analysed the theories behind the role that exports play in growth by applying regression analysis on four African countries namely, Democratic Republic of the Congo, Guinea Bissau, Malawi and Nigeria covering the period from 1981 to 2003. The results of the study showed a positive relationship

between exports and growth and mixed results for the other independent variables, such as investment and population. During the same period, (Hatemi-j, 2002) examines a causal relationship between export growth and economic growth in Japan by using a Granger causality test. The results showed that there is bi-directional causality in exports. This indicates that exports are an integral part of the economic growth process in Japan. The study however suggests that expansions of exports are an integral part of economic growth processes. Whilst another study by (Konya, 2004) analysed export-led growth and growth had driven export by applying Granger causality and auto regressive VAR model using time series for the period 1963 to 1999. The findings showed no causality between exports and it also indicated that there was a two-way causality between exports and growth in Sweden and in the UK. However, in the other countries the results are too controversial to make up a simple choice.

A study by (Dawson, 2005) analysed the impact of agricultural exports on macroeconomic performance in Pakistan. This study employed the Johansen co-integration technique by using secondary data for the period 1972 to 2008. The results of the study indicated that agricultural exports have a negative relationship with the economic growth of Pakistan whilst non-agricultural exports have a positive relation with economic growth. There is a bi-directional causality in agricultural exports and real GDP. Based on empirical results the study proposes that Pakistan should have a structural change in agricultural exports by converting its agricultural exports into value added products. Arguably both exports and imports growth rates of these commodities fluctuate over time. As for the policy, the results suggest that promotion on exports policies should be balanced.

During the same period, (Shoombé, 2008) investigated a causal relationship among agricultural GDP, manufacturing GDP and total exports in Tanzania and was using time series data for the period 1970 - 2005. The study employed a variety of analytical tools including unit root test, co-integration analysis and granger causality test. The empirical results of the study showed that in both sectors there is a Granger causality where agriculture causes both exports and manufacturing. The three variables of manufacturing, exports and agriculture together are cointegrated showing that they share long run relation such as establishment of export processing zones so as to speed up industrialisation for export markets. Fewer studies have been conducted as to whether export from a certain sector can promote economic growth.

Francis, Iyare & Lorde (2007) examined the relationship between agricultural export diversification and economic growth in the Caribbean countries. The cointegration and error-correction model was explored on agricultural exports over the period of 1961 to 2000. The results of the study revealed that a short run, diversification in agricultural exports results in economic growth in Belize and Barbados, whilst in the long run Jamaica, Costa Rico and Haiti showed the same results. The study further revealed that non-causality exists in Trinidad and Tobago. There is no evidence of bi-directional causality in any of the countries in either the short or long run. The findings reveal that export growth linkage holds in the face of a trade strategy in some Caribbean countries.

During the same period (Jordan and Eita, 2007) analysed the causality between exports and economic growth. The methodology used was time-series econometric techniques to test the hypothesis of a growth strategy from economic growth to exports using quarterly data for the period 1970 – 2005. The results revealed that exports granger

cause economic growth and GDP per capita. The study suggests that export-led growth strategy through various incentives has a positive influence on growth.

Muhammad (2010) examined the contribution of agricultural export to economic growth of Pakistan by estimating the relationship between agricultural exports and non-agricultural exports to economic growth. He employed the Johansen co-integration technique for the period 1972 -2008. The results of the study found that there was a negative and insignificant relationship between economic growth and agricultural exports which had an elasticity of 0.58. The study further suggested that non-agricultural exports should be promoted more than agricultural exports.

Another study by (Ziramba, 2011) investigated the causal relationship between exports and economic growth in South Africa by applying the bound test co-integration and Toda and Tamomto Granger causality approach. The Granger causality results found that the presence of a long-term relationship between the examined variables that, a bi-directional causality between export and GDP growth was confirmed. A long run co-integration relationship was also confirmed. On the above findings it can be concluded that a direct relationship can occur from exports to economic growth. These findings do not necessarily mean that an export promotion in all export sectors is the appropriate strategy to enhance economic growth.

During the same period (Mahdi and Masood, 2011) analysed the relationship between interest rates and inflation in Iran by using the Johansen's co-integration approach and the vector error model (VECM) approach. The results revealed that there is a co-integration relation, thus there should be a co-integration equation as well. A conclusion was reached that there is a long run relationship between the variables used

in Iran. The method used by Mahdi & Masood is similar to that of Ziramba as they both use the co-integration approach.

Similarly, in the same period, (Izuchukwu, 2011) examined the contribution of the agricultural sector on the Nigerian economic development. He used multiple regressions to analyse the data for the period 1986 to 2007. The results of the study indicated there was a positive relationship between GDP and domestic saving; government expenditure on agriculture, foreign direct investment exists. The study further revealed that 81 % of the variation in GDP could be explained by domestic savings, government expenditure and foreign direct investments. The above concludes that there is a positive relationship of cause and effect between GDP in Nigeria and economic growth.

Ogbokor and Niishinda (2013) investigated the long-run relationship between export and economic growth in Namibia. The purpose of this study was to investigate to see whether export expansion can be reasonable economic growth strategy for Namibia. The study made use of annual time series data running from the period 1972 -2010. The study employed the Johansen co-integration test, the vector-error correction model (VECM) and the Granger causality tests. The results of the Granger causality test revealed that a uni-directional causation from export to economic growth. This result confirms the validity of the export-led growth hypothesis in the case of Namibia. The findings also suggest that economic growth is dependent on export performance in a way.

The role of agriculture in the process of economic growth has been considered quite differently over time. Another study was covered in the same period by (Chang, Simo-Kengne, Gupta, 2013) who explored the causality relationship between export and

economic growth at a provincial disaggregated level consisting of nine provinces in the country. Employing a panel causality analysis with accounts for cross section dependency and heterogeneity across regions, the study found no causality between export and economic growth in seven provinces of the country. The results found that uni-directional causality between export and economic growth was confirmed by the Gauteng Province. According to (Chang *et al.*, 2013) the relationship between imports and economic growth is quite complex. However, imports are expected to improve the productive efficiency of domestic import-substituting forms through innovation and restructuration which, in turn enhances the performance of the economy. Such an assumption may lead to different conclusions depending on the market structure and institutional factors. They also state that theoretical models have documented both positive and negative causalities from economic growth to imports. Economic growth improves the productivity of the import-substituting firms, causing the domestic market to increase and thus the imports fall. It is thus believed that a rise in economic activity stimulates imports through consumption.

In developing countries agriculture was not found to be declining in terms of its contribution to economic growth (Siboleka 2014). However, in emerging economies agriculture is an engine for economic growth. It plays a stronger role as a result of increased value addition which has increased economic benefits such as employment, skilled human resources and a reduction on poverty levels.

(Ijirsha 2015) argues that agricultural exports can be as lucrative and profitable as any other sector of the economy with respect to returns on investment. Presently, there is a negative perception and a discriminatory approach regarding the agricultural sector because the majority of the livelihood that depend on subsistence farming. This perception should be addressed for the agricultural sector to optimally contribute

towards GDP through channelling investment to agriculture because of high potentials for employment, food security and exports.

Yifru (2015) investigated the causal relationship between agricultural exports and economic growth in Ethiopia. The study used time series data for the period 1973 to 2013 and used the Augmented Dickey Fuller and Phillips-Peron to test the unit root and Granger causality. The results of the unit root test reveal that the variables were stationary at the first difference. The Granger causality test found that there is a bi-directional relationship between pulses export, oilseed export and economic growth whereas unidirectional relationship between pulses export and economic growth policies were found.

Toyin (2016) clearly argues that Export-led growth hypothesis through agricultural exports is not valid for some countries. The non-causality between agricultural export components and economic growth in South Africa indicates that the level of agricultural export in South Africa either does not exclusively rely on the level of processed and unprocessed agricultural export. The causality direction between processed and unprocessed agricultural exports and economic growth was examined for the time period 1975 to 2012. The results found that there was no existence of causality between agricultural export components and GDP. The empirical investigation indicates that there is no existence of causality between the agricultural export components and GDP. The specific country analysis reveals variations regarding impact of export led growth among countries.

Simasiku and Sheefeni (2017) investigated the relationship between agricultural export and economic growth. The study made use of time series quarterly data covering the period between 1990 – 2014. The study employed the Augmented Dicky

Fuller Test, Johansen co-integration test and error correction techniques. The results of the study showed that the agricultural exports have a positive and insignificant effect on the growth of the economy whilst non-agricultural exports have a positive and insignificant effect on Gross Domestic Product (GDP). The study suggests that there is a long run relationship between agricultural export and economic growth in Namibia. The study by (Simasiku and Sheefeni, 2017) did not focus on the causality of these two variables; and only looked at the relationship between agricultural exports and economic growth, thus the need to determine which variable cause the other variables growth.

The studies for specific countries depict a strong effect of exports on economic growth, while the studies for non-country specific indicate that exports have a significant positive impact on economic growth. The study suggests that there seems to be a similar pattern of processed and unprocessed exports. Processed exports appear to be increasing more than the unprocessed agricultural exports. However, the study suggests that an export-led growth from agricultural sector necessitates an increase in domestic and foreign investment, including agricultural export participation through strategic incentives.

3.3 SUMMARY

Most of the empirical studies focus on the relationship between agricultural exports and economic growth. The studies conducted used a combination of various techniques; however, the Granger causality test seems to be the most dominant one. Most of the studies which are country specific indicated that export led economic growth whilst others that were not country specific indicated that they were conducted on different economics. The majority of the studies conducted found that there was a

bi-directional relationship between exports and economic growth (Ekanayake, 1999; Francis *et al.*, 2007; Ziramba, 2011; Dawson, 2005 and Yifru, 2015). Some of the studies found causality to be running from both sides (Konya and Laszlo, 2004; Shoombe, 2005). Some of the researchers have found a strong positive relationship between export and economic growth; (Izuchukwu, 2011; Simasiku and Sheefeni, 2017). However, there were a few cases that no causality was found (Sharma and Dhakal, 1994; Konya and Laszlo, 2004; Toyin, 2016).

In a nutshell (McMichael 2009) indicated that the agricultural sector generally contributes to economic development in four critical components; market contribution, foreign exchange contribution, production contribution and factor contribution. This surely has a major impact on economic growth prospects.

In light of the literature review that investigates the relationship between agricultural exports and economic growth in Namibia over the period 1998 – 2016. It can be safely concluded that there are mixed findings due to environmental differences and data used in different studies. This can also be as a result of different methodologies that were used in researching this issue. There seemed to be no study on Namibia that has specifically looked at this subject, this study therefore intends to give an insight regarding the Granger causality between exports and economic growth in Namibia of which this paper intends to cover.

CHAPTER FOUR

RESEARCH METHODS

4.1 Introduction

Chapter four discusses the methodology used in the study. Section 4.2 outlines the econometric framework and model specification estimated in this study. Section 4.3 presents the discussion on data sources.

4.2 Research Design

The study adopted the quantitative research method that made use of a statistical (regression) model to help analyse and interpret or explain the findings by using annual time series data. This study applied a causal comparative research design to study the cause and effect of the relationship between agricultural imports and economic growth in Namibia.

4.3 Econometric Framework and Model Specification

This study adapted the approach by (Mahdi & Masood 2011) in examining the causal relationship between agricultural exports and economic growth in Namibia. The approach used by the previous authors involved a three-step approach because the Granger causality was conducted within the vector auto regression framework. This study used the simple pairwise Granger causality approach to determine the existence of such a relationship. The Granger causality equation can be expressed as follows:

$$EG_t = \beta_0 + \sum_{i=1}^k \beta_{1i} EG_{t-i} + \sum_{i=1}^k \beta_{2i} AE_{t-i} + \xi_{1t} \dots \dots \dots (3.1)$$

value of the ADF is greater than at least one of the critical values at a given level of significance and vice versa. In addition, the Granger causality is sensitive to the lag included in the regression. For this reason, both the Akaike (AIC) and Schwarz Information Criteria have been used in order to find an appropriate number of lags in many studies (Foresti, 2006). This study also followed suit.

In this study, the Granger causality test was used to see how much of a current series of EG can be explained by the past values of EG. Furthermore, to also know whether adding lagged values of another series AE can improve the explanation of the variance of EG or not. This procedure follows the F-test to jointly test for the significance of the lags on the regressors or explanatory variables. This actually tests for ‘Granger causality’ between these variables. The Granger causality test can have various possible outcomes which are likely to occur. It is possible to have causality running from variable EG to AE, but not AE to EG; from AE to EG, but not EG to AE and from both EG to AE and AE to EG. From equation 3.1 and 3.2, determining the relationship among the variables can be demonstrated as follows:

$$\beta_{2i} \neq 0 \text{ and } \beta_{1i} = 0$$

This means that economic growth leads to agricultural exports, alternatively, agricultural exports lag economic growth. There is unidirectional causality.

$$\alpha_{1i} \neq 0 \text{ and } \alpha_{2i} = 0$$

This means that agricultural exports lead to economic growth or economic growth lag agricultural exports. There is unidirectional causality.

$$\beta_{2i} = 0 \text{ and } \alpha_{2i} = 0$$

This suggests that both variables are independent so there is no causality from any direction among the variables.

$$\beta_{2i} \neq 0 \text{ and } \alpha_{2i} \neq 0$$

This implies that both variables are interactive of each other and have a feedback relationship. Hence, there is bidirectional causality among the variables.

4.4 Data Sources

The data collected was of a secondary nature. The study used quarterly time series data for the period 1998: Q1-2016: Q4. The data obtained would be retrieved and analysed by using Econometric Views (EViews) statistical package. The variables are: Economic growth (EG) and Agricultural exports (AE). The data was obtained from the Namibia Statistics Agency (NSA).

4.5 Ethics

The researcher identified the research to be conducted and requested permission from the managers of NSA to conduct the study. The data was collected from Namibia Statistics Agency (NSA), where the permission to conduct the study was granted and data was received from NSA. Although the data is of a secondary nature it was used in confidence and was used solely for the purpose of this study. The data was used with integrity and in an ethical manner.

CHAPTER FIVE

EMPIRICAL FINDINGS AND ANALYSIS

5.1 Introduction

The unit root test is shown prior to any estimation since most macroeconomic variables are trended and are mostly non-stationary (Wadad, 2011; Asteriouse & Hall, 2009). This chapter presents the findings of the study.

5.2 Empirical Findings and Discussions

This study adapted the approach by (Mahdi & Masood 2011) in examining the causal relationship between agricultural exports and economic growth in Namibia.

5.2.1 Unit root

Table 5.1: Unit Root test: ADF in levels and first difference

Variable	Model Specification	ADF		Order of Integration
		Levels	First Difference	
LNEG	Intercept	-1.861	-4.568**	I (1)
	Trend and Intercept	-1.605	-4.698**	I (1)
LNAE	Intercept	-1.362	-9.300**	I (1)
	Trend and Intercept	-1.191	-9.342**	I (1)

Source: Author's compilation using E-views. a) Note:

**** means the variable is stationary at 5% level of significance respectively.**

Table 5.1 shows the results of the Augmented Dickey-Fuller unit root test. The results for the variable economic growth reveal that the variable is stationary in the first difference. Thus, economic growth is integrated of order one, implying the covariance stationary is after differencing the variable once. Similarly, the table shows that the variable agricultural export is also stationary at first difference. Thus, it is integrated of order one. Therefore, it can be concluded that the null hypothesis of nonstationary could not be rejected in levels but at first difference. The next step was then to determine the lag length.

5.2.2 Lag length

Table 5.2: Optimal Lag Length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-132.9233	NA	0.192398	4.027561	4.093372	4.053603
1	-63.40372	132.8135	0.027218	2.071753	2.269188	2.149878
2	-49.30695	26.08954	0.020144	1.770357	2.099415*	1.900566
3	-47.34928	3.506280	0.021431	1.831322	2.292004	2.013615
4	-36.16740	19.35967*	0.017326*	1.616937*	2.209243	1.851314*
5	-33.49987	4.459166	0.018078	1.656712	2.380641	1.943173
6	-32.63741	1.390224	0.019932	1.750371	2.605923	2.088915

*** indicates lag order selected by the criterion**

Source: Author's compilation using E-views

Table 5.2 displays the different lag lengths suggested by the different criterion namely: Sequential modified LR test statistic (LR), Final prediction error (FPE), Akaike

information criterion (AIC), Schwarz information criterion (SIC) and Hannan-Quinn information criterion (HIQ). This study used the Akaike information criterion (AIC) and Schwarz information criterion (SIC) as it is a norm in most empirical studies. The AIC revealed an optimal lag length of four while the SIC suggests the optimal lag length of two. The next step was to conduct the Granger causality test.

5.2.3 Granger Causality

The Granger causality test was carried out using the different optimal lag length as suggested by the two criteria. The results are presented in tables 5.3 and 5.4 respectively.

Table 5.3: Granger Causality results: using lag 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNAE does not Granger Cause LNEG	71	0.46158	0.6323
LNEG does not Granger Cause LNAE		0.10772	0.8980

**Source: Author's compilation using E-views*

Table 5.3 shows the results of the Granger causality between economic growth and agricultural exports. Following the p-value approach, the p-value of 0.63 is greater than 0.05 level of significance. Therefore, the null hypothesis is that agricultural exports do not Granger cause economic growth could not be rejected. Similarly, the p-value of 0.89 is greater than the 0.05 level of significance. Hence, the null hypothesis that economic growth does not Granger cause agricultural exports could not be

rejected. It can be concluded that using the lag of two as suggested by the SIC, there was no causality running from either economic growth or agricultural exports. The same exercise was repeated using the optimal lag length of four as suggested by the AIC.

Table 5.4: Granger Causality results: using lag 4

Null Hypothesis:	Obs	F-Statistic	Prob.
LNAE does not Granger Cause LNEG	69	0.32458	0.8604
LNEG does not Granger Cause LNAE		1.22480	0.3099

**Source: Author's compilation using E-views*

Tables 5.4 reveals that a p-value of 0.86 is greater than the 0.05 level of significance and thus, the null hypothesis that agricultural exports does not Granger cause economic growth could not be rejected. Similarly, the p-value of 0.30 is greater than the 0.05 level of significance, the null hypothesis indicates that economic growth does not Granger cause agricultural exports could not be rejected. Therefore, it can be concluded that even using the lag of four as suggested by the AIC, there was no causality running from either agricultural exports or economic growth.

It is evident in both cases that there was no causality from either of the variables of interest. Therefore, it can be concluded that economic growth is not a good indicator for predicting future agricultural exports. Similarly, agricultural exports are also not a good indicator for predicting future economic growth. This suggests that both variables are independent so there is no causality from any direction among the variables.

As from this perspective the results of this study are similar to the findings of (Sharma and Dhakal, 1994) on various countries: (Konya and Laszlo, 2004) in Sweden and the UK; and (Toyin, 2016) in South Africa. The results of these studies clearly indicated that the unit root test indicates all variables tested were stationary in first difference, which resulted in the series being tested for co-integration and Granger causality. The tests also showed that there is no form of causality between agricultural exports and economic growth.

The results of this study were similar as the unit root test also indicated that the variables were stationary of first difference. Whilst the Granger causality test shows that agricultural export do not Granger cause economic growth and similarly, economic growth does not Granger cause agricultural exports. However, this study indicates that both variables are independent so no causality was running from either direction among the variables. The fact that the variables are independent could have affected the results whilst the variables could be the determining factor of having a different number of years. The study is thus in line as it conforms to studies in which a similar methodology was applied and the outcomes were also similar.

The results of the study agree with the results of similar studies carried out in various countries, as specified in the literature review. It can thus be concluded that although different variables were used, the historical data of these variables cannot be used to support and increase the future values of each variable. This shows that the same test could have different results which vary from the variables used as well as its history to test the granger causality.

CHAPTER SIX

CONCLUSIONS AND POLICY IMPLICATIONS

6.1 Conclusions

The aim of the study was to examine the causal relationship between agricultural exports and economic growth in Namibia. Aggregated annual data covering the period 1998 – 2016 was used to explore whether there was causality between agricultural exports and economic growth. The Granger causality test confirms that there was no causality from either of the variables of interest from both directions. The results indicate that both variables are independent of each other. Based on this observation we accept the null hypothesis that there is no causal relationship between agricultural exports and economic growth. The study aimed at ascertaining whether it is growth that causes agricultural exports to expand in the economy or whether it is the expansion in the economy that causes the growth in agriculture. There is no causal relationship therefore it can thus be concluded that agricultural exports does not cause growth in the economy.

6.2 Policy Recommendations

Despite the fact that agriculture supports a large population and contributes towards economic growth, agricultural exports remain low and hence its insignificant contribution to economic growth. It is thus important for policy-makers to understand the impact and effectiveness of agricultural policy on agricultural exports and its potential for economic growth. It would be advisable for Government to issue subsidies and assist local producers by promoting development within the agricultural sector with local products. Government should also consider banning or limiting imports of agricultural products, only allowing imports when there are shortages of

local produce. As far as policy implications are concerned it is imperative that recommendations are given for Namibia to try out in developing and expanding domestic agricultural food supplies. Although agricultural exports do not seem to have an effect on the economy of Namibia, it would be prudent to have procedures in place for the long run. Hence government should promote and diversify agricultural exports in order to promote economic health and increase the benefits of this sector.

There is a need to promote an expansion in agricultural exports to achieve a higher economic growth. This could be in the form of training to farmers to understand international value-chains and tap into them in order to increase agricultural exports.

Hence the farmer's livelihoods and income will be sustained; it will also increase productivity and affordability and increase food security. There is a need to develop policies to give confidence to both domestic and foreign investors in assisting the agricultural sector. Government should encourage the concept of farming in particular to small and medium size farmers.

6.3 Areas for Future Study

This study could not exhaust all aspects of agricultural exports, in relation to economic growth. Some of the factors that need to be addressed in the Namibian economy are the issues on the effects of exports towards economic growth as well as the effects of non-agricultural exports to economic growth. These are not discussed in this paper.

Farmers should be encouraged to specialise in fewer commodities, and improving the quality of agricultural products produced and exported. Efforts should be directed towards policies that will enhance economic growth, activities which improve the quality of the products produced and sold by government. Hence the need to improve

on the access to finance where capacity should be strengthened to enhance productivity.

As a recap this chapter discussed the conclusions and policy implications based on the results in chapter 5. The chapter also provided policy recommendations.

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Annexures



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LANGUAGE & COPY-EDITING CERTIFICATE

29th October 2018

RE: LANGUAGE, COPYEDITING AND PROOFREADING OF KLAUDIA EK MBEELI'S THESIS FOR THE MASTER OF BUSINESS ADMINISTRATION DEGREE OF THE NAMIBIA BUSINESS SCHOOL OF THE UNIVERSITY OF NAMIBIA

This certificate serves to confirm that I copyedited and proofread **KLAUDIA EK MBEELI'S** Thesis for the **MASTER OF BUSINESS ADMINISTRATION DEGREE** entitled: **AN ANALYSIS OF THE CAUSAL RELATIONSHIP BETWEEN AGRICULTURAL EXPORTS AND ECONOMIC GROWTH IN NAMIBIA**

I declare that I professionally copyedited and proofread the thesis and removed mistakes and errors in spelling, grammar, and punctuation. In some cases, I improved sentence construction without changing the content provided by the student. I also removed some typographical errors from the thesis and formatted the thesis so that it complies with the University of Namibia's guidelines.

I am a trained language and copy editor and have edited many Postgraduate Diploma, Masters' Thesis, Dissertations and Doctoral Dissertations for students studying with universities in Namibia, Zimbabwe, Swaziland, South Africa and abroad. I have also copy-edited company documents for companies in the region and abroad.

Please feel free to contact me should the need arise.

Yours Sincerely,

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20 June 2017

TO WHOM IT MAY CONCERN

Re: MBA STUDENT – KLAUDIA KK MBEELI – STUDENT NO: 201154625

As part of our Master of Business Administration Programme, students are expected to submit a research paper after completion of their course-work. They need to explore in detail, some concepts and issues pertaining to finance. To do that effectively, they need to conduct research and obtain practical examples.

Ms. Mbeeli has chosen your organisation to approach for information. It is against this background that I wish to kindly request you to assist Ms. Mbeeli with the information she requires. Accept our assurances that the data will be used for academic purposes only. A copy of the completed document will be available at the Namibia Business School for perusal. Her research synopsis indicates that her topic touches on **“AN ANALYSIS OF THE CAUSAL RELATIONSHIP BETWEEN AGRICULTURAL EXPORTS AND ECONOMIC GROWTH IN NAMIBIA”**.

Your kind assistance is highly appreciated.

Yours sincerely

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