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Rooibos Tea: The story of the Overberg

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Rooibos Tea – The story of the Overberg

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TABLE OF CONTENTS

List of Tables:.....	3
Table of Figures:	3
Executive Summary	4
1. Introduction	5
2. The history of rooibos in South Africa	7
3. The South African rooibos.....	9
3.1. Production.....	9
3.2. Exports.....	13
3.3. Value chain and Industry structures	16
4. Potential for the Overberg	17
4.1. Production cost, yields and prices.....	23
5. Conclusions and Recommendations	28
References	29

List of Tables:

Table 1: The project's strategic alignment	7
Table 2: 2017 Flyover hectares compared to the 2019 hectare survey	18
Table 3: Crops currently planted on the suitable areas for rooibos production	20
Table 4: Gross margin analysis for rooibos compared to wheat and canola	22
Table 5: Comparison: Establishing cost - Overberg versus Cederberg.....	23
Table 6: Comparing the production years - Overberg versus Cederberg area for one .	25
Table 7: Labour cost (including casual labour and drying & cutting cost).....	26
Table 8: Yield and price comparison.....	27

Table of Figures:

Figure 1: Hectares under rooibos production in South Africa	10
Figure 2: Rooibos gross value of production and tons produced	11
Figure 3: Main areas in the Western Cape that produces rooibos	12
Figure 4: Volume and value of rooibos exports, 2001 – 2019	14
Figure 5: Export unit price (Rand/Ton), 2001 – 2019	15
Figure 6: Export destinations of South African rooibos tea: 2012 – 2019	16
Figure 7: The value chain of the rooibos industry.....	17
Figure 8: Rooibos tea production in the Cape Agulhas area.....	19
Figure 9: Suitable areas for the production of rooibos tea in the Elim/Cape Agulhas Municipal Area	20
Figure 10: Suitability for Rooibos Tea Production - Total hectares	21
Figure 11: Labour cost and Yield (Kg per 1 hectare)	27

Executive Summary

South Africa has a world-renowned rooibos tea industry with a history dating back to the 1600's. In recent years, the increasing global demand for rooibos tea provides opportunities for the industry to expand and create jobs in rural areas of the Western Cape. Rooibos tea production has mainly been concentrated in the surrounding areas of the Cederberg, an area already heavily impacted by climate related impacts such as droughts. In an attempt to counteract these realities, as well as diversify the risk associated with climate change, rooibos tea manufacturers are looking to expand production in other potentially suitable areas. Furthermore, international markets are also changing and most of the exported rooibos tea finds markets in Asia (Japan) and the European Union (EU) (Germany and the Netherlands). In the past, the EU was the frontrunner when it came to rooibos tea imports but that picture is slightly changing as Japan is taking the lead.

In order to explore suitable production areas for rooibos expansion, this report sets out to compare the Overberg area with the Cederberg region in terms of growing potential, farm income and expenses and difference in costs associated with being in different regions (transport). The findings suggest that rooibos tea production is feasible in the Overberg and ample, suitable growing areas exist for further development. The relatively high gross margin per hectare of between R12 500 to R25 000 per hectare presents farmers in this area with alternatives further diversify their farming enterprises.

1. Introduction

South Africa has a long history of rooibos production, which is particularly concentrated in the Western Cape's Cederberg region and some parts of the Northern Cape (Tshitiza, 2019). The history and how the rooibos plant and its health properties were discovered are still under debate and are summarised in Section 2 (DEA, 2014; Wynberg, 2016). The rooibos plant, *Aspalathus linearis*, is a leguminous (nitrogen fixing) scrub of about two meters in height and has reddish-brown branches. The plant belongs to the Fynbos Biome and has needle-like leaves and pea-shaped yellow flowers at the tip of the branches (DEA, 2014). It can be harvested from plants grown in the wild, as well as harvested from cultivated ones and is native to South Africa (SmartAgri, 2016). The commercial production of rooibos tea in the Cederberg has led to local job creation of approximately 8 000 on-farm jobs, as well as many more throughout the value chain activities such as processing, packaging, marketing, logistics, etc. (Rooibos Council, 2019). The Cederberg region is known as the hub for rooibos tea production and in 2014 rooibos was registered as a Geographic Indicator (GI) product (Tshitiza, 2019).

The demand for rooibos tea is growing globally as it is regarded as a healthy beverage, high in anti-oxidants. Farmers are eager to enter this market but the availability of suitable land, with the right climatic conditions is currently limiting expansion in the Cederberg area. The effects of climate change presents a further challenge, especially in the Western Cape where there is currently a trend of increasing average temperature, coupled with changes in annual rainfall and spatial distribution (SmartAgri, 2016). The Cederberg climate is characterised by very hot summers, with cooler winters and very cold winter nights in the mountainous areas. It is a low rainfall area with rainfall mainly occurring in winter, from late May to mid-August (SmartAgri, 2016). Studies focussing on climate modelling in the Cederberg area have shown several potentially devastating changes. Increased variability of precipitation, potential for longer dry spells, delayed winter rainfall seasons, heavier and late summer rainfall with higher temperatures and more frequent and intense heat waves may occur (SmartAgri, 2016; Rooibos Limited, 2018). A recent bioclimatic modelling study for rooibos showed that "suitability will remain the same in the higher elevation areas of the traditional rooibos production area. In the western areas along the coast, considerable decreases are projected, especially in the lower-lying regions. The most significant increases in terms of suitability are expected in the mountainous region toward the southeast, and at higher altitudes. Most of the areas where range expansion was indicated are located in existing conservation areas or

include conservation-worthy vegetation, which could place agricultural adaptation in conflict with conservation needs" (SmartAgri, 2016, p. 9).

Due to these realities, the Overberg region has been identified by the rooibos tea buyers' technical teams as a suitable area for rooibos production (Pretorius, 2019). Wild rooibos has been growing in the Strandveld area for many decades. Evidence of this is provided in the very first Agricultural Census (1918) conducted in South Africa which suggest that of the 304 800 pounds of "Bush tea" harvested, 20% were from the Caledon area. However, it is only as recent as 2010 that commercial rooibos tea production has started to expand. This begs the question, is the Overberg region suitable for rooibos from both an environmental, as well as economic perspective given the location differential and different climate. In an attempt to inform regional economic development, the Western Cape Department of Agriculture (WCDoA) through the Overberg District Manager, has conducted this research to gain an understanding of rooibos production and potential for expansion in the Overberg. As expected, the overarching objectives of this assessment is well aligned to the strategic and policy directives as indicated in Table 1 below, with a particular focus on the National Development Plan's (NPC, 2011) Chapter 6 which focus on creating an inclusive rural economy. The creation of jobs and economic growth are therefore encouraged through increased investment in agricultural production in a sustainable manner, growing the economy by means of export-led, innovative and resilient farming systems.

It is also well aligned with the strategic direction of the Western Cape Government in that the focus area under the Vision Inspired Priority 2 and 4 sets out to increase investment by export growth opportunities. Furthermore, the WCDoA's Departmental Outcomes of increased agricultural production in a sustainable manner to create resilient rural economies are evident in this research effort.

This report has three objectives: 1) to provide an overview of rooibos production in South Africa and the Overberg, 2) to develop rooibos tea budgets for the Overberg in an attempt to assess the feasibility for production using Gross Margin Analysis and 3) to compare Overberg's production potential to that of the Cederberg region. The key findings will be discussed, followed by concluding remarks and recommendations.

Table 1: The project's strategic alignment

International	National	Provincial	Departmental
Sustainable Development Goals (SDG) – Goal 9 <ul style="list-style-type: none"> • Industry innovation and infrastructure 	National Development Plan (NDP) 2030 – Chapter 6 <ul style="list-style-type: none"> • Inclusive rural economy 	Provincial Strategic Goal (PSG) 1 (old) <ul style="list-style-type: none"> • Create opportunities for growth and jobs 	WCDOA's vision <ul style="list-style-type: none"> • “A united, responsive and prosperous agricultural sector in balance with nature”.
SDG – Goal 12 <ul style="list-style-type: none"> • Responsible consumption and production 		Vision – inspired priority (VIP) 2 – Focus area 1 <ul style="list-style-type: none"> • Increasing investments (VIP) 2 – Focus area 3 <ul style="list-style-type: none"> • Growing the economy through export growth (VIP) 4 – Focus area 2 <ul style="list-style-type: none"> • Creating spatially and economically vibrant growth points. 	Departmental Outcomes <ul style="list-style-type: none"> • Increased agricultural production in a sustainable manner • Transformed and Inclusive Agricultural Sector • Innovative and Resilient Rural Economies
			Ministerial Priorities <ul style="list-style-type: none"> • Market access • Farmer support

Source: Own Compilation (2019)

2. The history of rooibos in South Africa

Carl Thunberg, a Swedish naturalist, discovered the rooibos plant and the brewing of the plant in 1772 when he became aware of the indigenous people (Khoisan) climbing the mountains to get to the wild rooibos plant so that they can harvest the fine, needle-like leaves (Rooibos Council, 2020). The indigenous people used axes to cut the leaves and hammers to bruise the leaves, thereafter it is left in the sun to dry (Rooibos Council, 2020). Dutch settlers to the Cape learned to drink rooibos tea as an alternative to the expensive black tea, which was imported from Europe (Rooibos Council, 2019). In 1904 a variety of experiments at Rondegat Farm was conducted by Benjamin Ginsberg, he was a young Russian immigrant whose father owned a trading post near Clanwilliam (Rooibos Council, 2020; Stellenbosch Visio, 2017). He dried rooibos using the traditional Chinese and Indian

methods (Rooibos Council, 2020; Stellenbosch Visio, 2017). Benjamin Ginsberg became the first exporter of rooibos tea (Rooibos Council, 2020). One of the struggles with rooibos was that the plant could not be commercially grown due to the seeds being difficult to find and to germinate (Rooibos Council, 2020; Stellenbosch Visio, 2017). This led to experiments being conducted by Dr Pieter Le Fras Nortier, who was a local district surgeon and botanist at the time (Rooibos Council, 2020; Stellenbosch Visio, 2017).

Dr Nortier saw the commercial potential that the rooibos plant held for the Cederberg/Clanwilliam region and therefore started the cultivation experiments of the plant in the 1920 (Stellenbosch Visio, 2017). In the 1930's Dr Nortier were able to cultivate the first rooibos plant on his farm which was situated in Clanwilliam and he subsequently showed many local farmers how to germinate their own seeds. The research done by Dr Nortier turned an indigenous drink into an iconic national and international commodity (Rooibos Council, 2020; Stellenbosch Visio, 2017).

In the 1950's the rooibos industry started to get organised with the formation of the Clanwilliam Tea Cooperative which later became the Rooibos Tea Control Board after an successful request by the then Minister of Agriculture (WIPO, 2018). The post-World War 2 collapse of the industry meant that the regulations to stabilise rooibos prices and to improve the quality of the product made the distribution of rooibos to wider markets possible. In line with the deregulation of agricultural marketing board in the 1990's, the Tea Board privatized to become Rooibos Limited, a company that is today part of a wider group of players in the rooibos industry. In April 2005, a number of rooibos industry role players, which includes producers, processors and other parties, formed the South African Rooibos Council based on voluntary levied membership. Today, the Rooibos Council is an independent, non-profit organisation that is responsible for promoting the interest if the industry.

Another important feature of the success of the rooibos industry relates to a long-standing Intellectual Property (IP) dispute. Since rooibos has many other applications apart from its use as a beverage, the use of rooibos in cosmetic and skin care resulted in an application in the United States to reserve the word "Rooibos" as a Patent when used in skincare products in 1994. The granting of this use prompted Rooibos Limited, with the assistance from the South African government to object to the registration arguing against its validity because "rooibos" is a generic term, which should not be monopolized by any one company. The dispute continued, but intensified, when Burke International

bought the trademark and started sending “cease and desist” letters to tea cafes and internet resellers to ensure they do not use the “Rooibos” name. The long legal dispute and litigation ended in 2005 when the US Company and Rooibos Limited reached a settlement in which both parties agreed to cancel trademark registrations (WIPO, 2018).

Two developments since then has had a dramatic impact on the rooibos industry. The first was when the plant was recognised for its importance as a South African GI by the Minister of Trade and Industry in the Intellectual Property Laws Amendment Bill in 2008. The registration of rooibos as a GI helps to protect the name from further misuse and imitation and it sets specific guidelines for high quality production. Rooibos meets all the requirements for GI protection as defined by the World Trade Organisation's (WTO) Agreement on the Trade-Related Aspects of Intellectual Property Rights such as that it is only grown in one part of the world and that the properties of the plant is directly related to the unique geographical conditions in which it grows. The GI then links the area to the product and can therefore be used as a powerful marketing tool and helps to preserve the unique biodiversity in the region. Rooibos was granted GI status in 2014.

As will be unpacked in a later section, the rooibos industry today is made up of a complex value chain, delivering high quality rooibos product in South Africa and international markets.

3. The South African rooibos

There is two types of rooibos produced for consumption, those traditionally fermented and the unfermented green rooibos. Both types can be produced either organically or the traditional way by using fertilisers and pesticides (Rooibos Council, 2019). Apart from this main consumption as a tea beverage, the plant also has numerous other uses such as medicinal, herbal, and cosmetic amongst others.

3.1. Production

In South Africa there are approximately 67 000 ha under rooibos tea production, mainly found in the Western and Northern Cape (Pretorius, 2019). Figure 1 below shows how rooibos hectares have been increasing from around 13 000 hectares in 1993 to more than 67 000 hectares in 2019. The statistics in Figure 1 comes from the various agricultural censuses conducted by Statistics South Africa from 1993 to 2007, whilst the 2014 and 2017 values are from the Western Cape Flyover (WCDOA, 2018). Finally, the 2019 area under

production of 67 000 hectares are from the rooibos industry. The area expansion in rooibos in this period corresponds to the expanding harvested supply of rooibos.

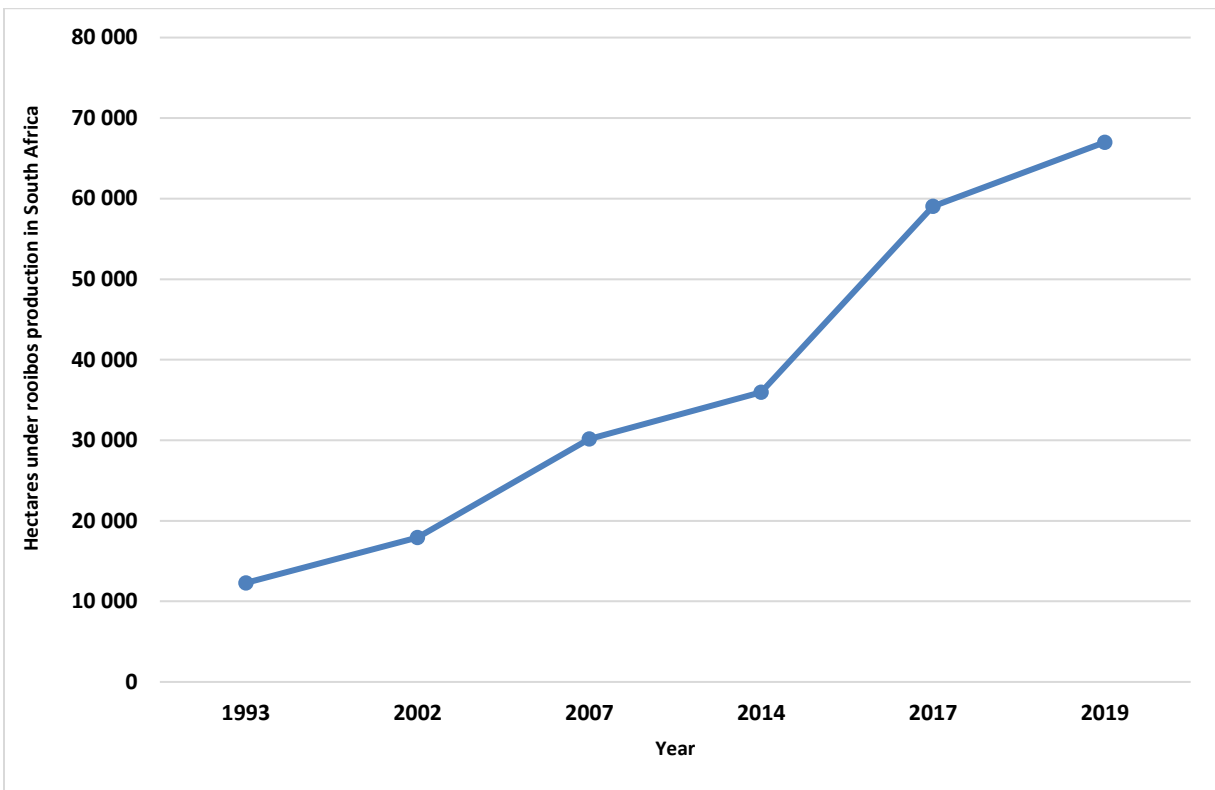


Figure 1: Hectares under rooibos production in South Africa

Source: Central Statistical Service (1998); StatsSA (2010; 2005); WCDOA (2018) & Pretorius (2019)

In order to get a sense of the output of the rooibos industry Figure 2 provides the Gross Value of Production (DAFF, 2019; 2018 & 2017), as well as the total production in tons as provided by the Rooibos Limited (2018) and Rooibos Council (2019). The past two decades have seen the rooibos industry going through different stages. At the turn of the century, production levels was in a declining trend, after which strong growth was prevalent from 2000 to 2009. In the same period, income generated for rooibos did not increase with the same pace as total supply, probably putting prices under pressure. The onset of the Global Financial crises in 2008/9 impacted trade volumes significantly and saw prices for rooibos drop in 2009 and 2010.

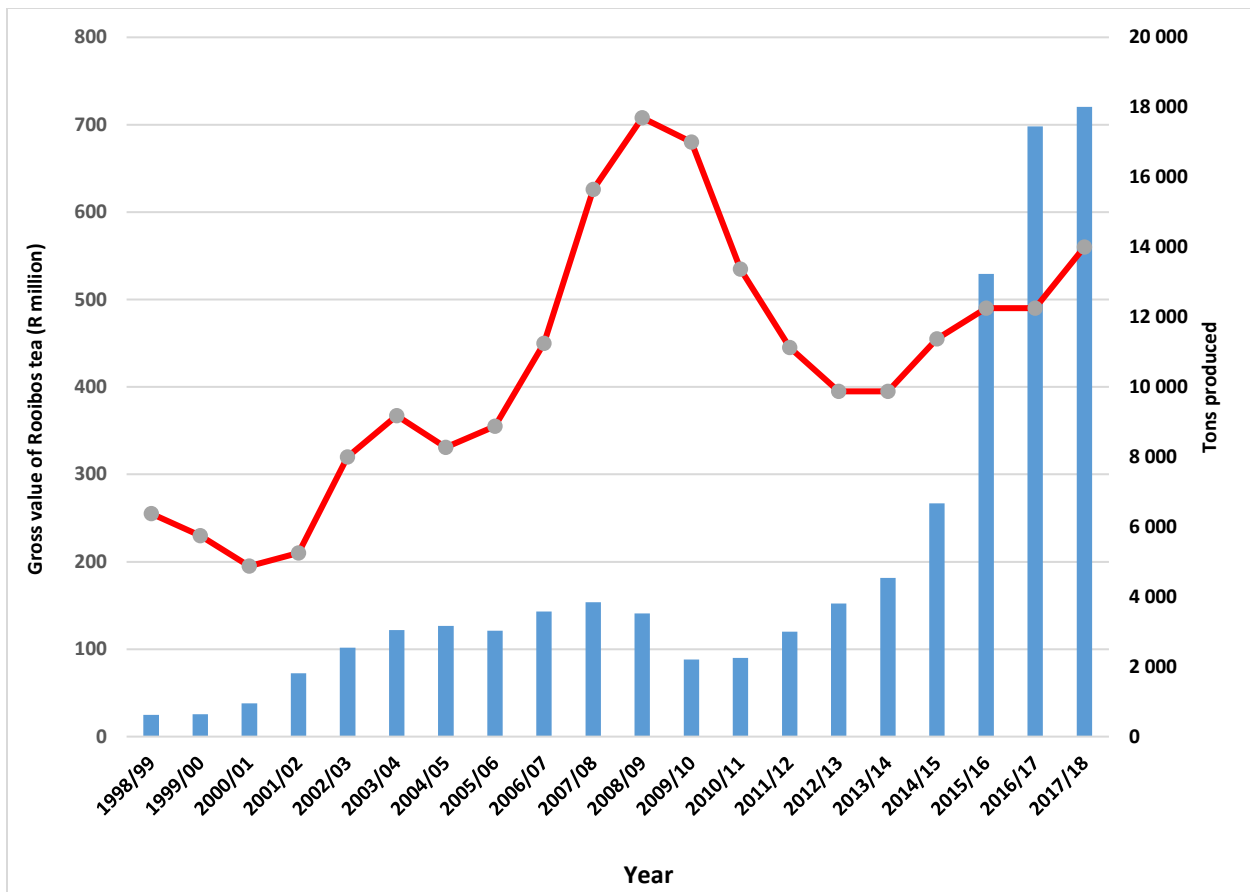


Figure 2: Rooibos gross value of production and tons produced

Source: DAFF (2019); DAFF (2018); DAFF (2017); Tshitiza (2019) & Own Compilation (2020)

By 2014, the industry was going through some consolidation, bringing total supply to around 10 000 tons. Rooibos was granted GI status in 2014, which coincide with the industry regaining some output growth in tons, at higher prices than before the crises was the shift that the industry needed to regain earlier growth (Tshitiza, 2019; SmartAgri, 2016).

By far the largest concentration of rooibos tea production is located in the Western Cape's West Coast area, with a much smaller share in parts of the Cape Agulhas area in the Overberg, as indicated in Figure 3.

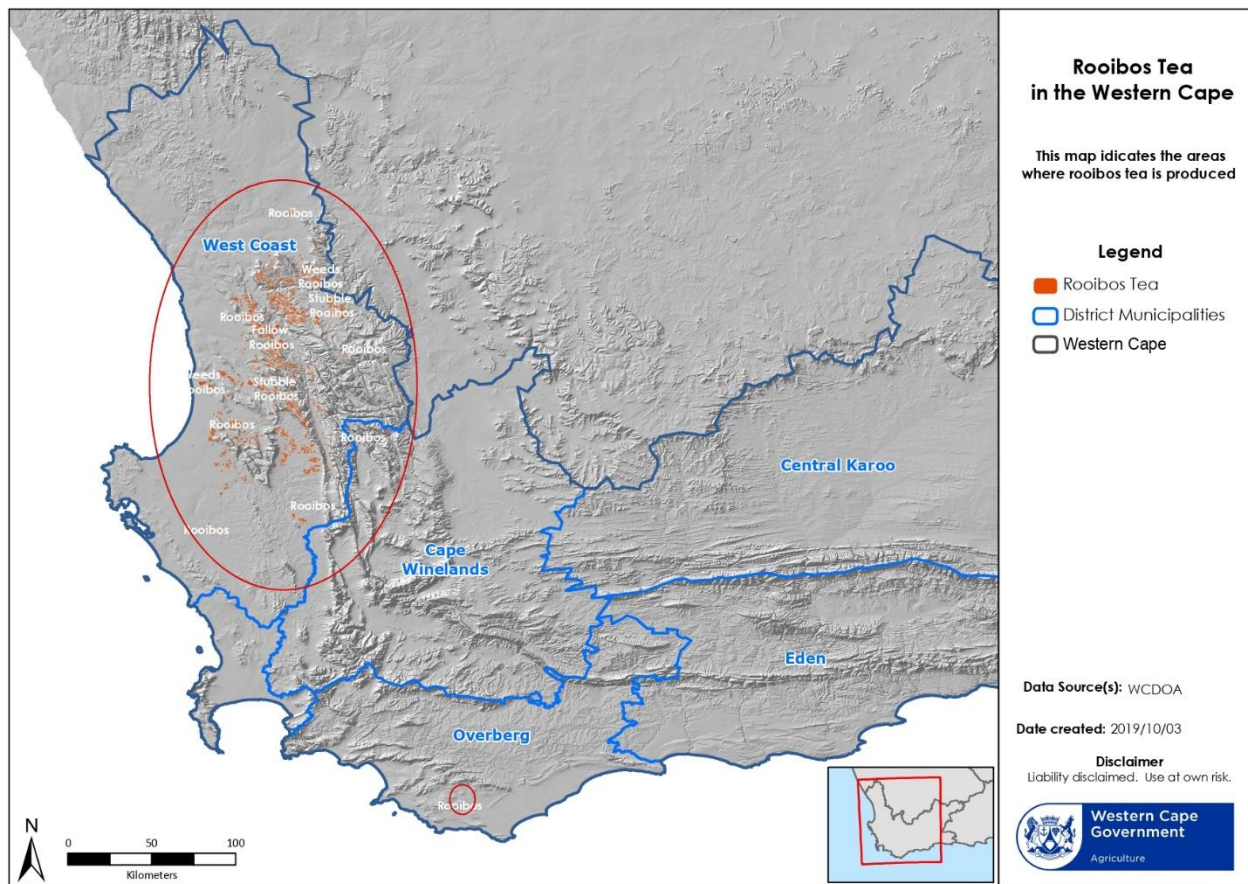


Figure 3: Main areas in the Western Cape that produces rooibos

Source: Wessels (2019); Wessels (2020)

The rooibos plant requires specific climate and geographical conditions. Rooibos grows naturally in higher altitudes of around 200 to 1 000 meters above sea level, but are successfully grown in the Overberg region at much lower altitudes. In terms of climatic conditions, areas where rooibos tea thrives are generally characterised by hot and dry summers and cooler wet winters (annual rainfall of 300-350 mm and minimum winter temperatures during the coldest months of between 2 to 6°C). The rooibos plant grows in arid land, infertile, well-drained soils, with a preference for sandy soils (Rooibos Council, 2019; Pretorius, 2019). Rooibos is mostly grown under dryland conditions and is therefore highly dependent on winter rainfall that replenishes soil moisture and stimulates seed germination and establishment.

The average lifespan of a rooibos plant is six years of which it can deliver a crop four times in this period (Rooibos Council, 2019). A crop rotation system is essential due to the importance of resting the soil for a minimum of two years before re-planting a field (Pretorius, 2019; Rooibos Council, 2019). According to research done by the Rooibos

Council (2019), an average yield of 1.8 tons per hectare can be expected over the lifespan of the plant.

In the South African local tea market, rooibos made up about 29% in market share, whilst black tea was much bigger with 68% for the 2017 period (Tshitiza, 2019). This occurrence is due to poor local economic performance, as well as lowered consumer spending which influenced the local sales of rooibos tea and its product mix offerings (Insight Survey, 2018). Rooibos tea and its product mixes are seen as luxury items by some consumers when compared to the more affordable black teas (Insight Survey, 2018).

3.2. Exports

The global tea market is primarily made up of 60% black tea, 30% green tea and 10% other tea¹ (Insight Survey, 2018). The South African rooibos tea market has grown with a 27% in value and 5% in volume per annum between the 2012 and 2019 period (ITC, 2020). The health benefits of tea is the main driver of the continued growth in demand, ranging from detoxification to healing of scars, to weight management and skin care, in addition to its anti-ageing properties (Insight Survey, 2018).

The South African rooibos industry is particularly focussed on exporting products and South Africa's rooibos exports volumes has grown from 721 tons in 2001 to 9 486 tons in 2019, which can be seen in Figure 4 (ITC, 2020). This good growth has been somewhat offset by lower export volumes in the past three years, but the remarkable improvement in export values is indicative of much improved market access conditions related to the GI marketing efforts. The value of exports has increased from R 201 million in 2012 to more than R936 million in 2019, an average annual growth of 27% in nominal terms.

¹ "Other tea" includes fruit and herbal (rooibos and honeybush) teas. Kenya and Sri Lanka are the predominant producers and exporters of black tea. China is known for its green tea production and consumption (Insight Survey, 2018).

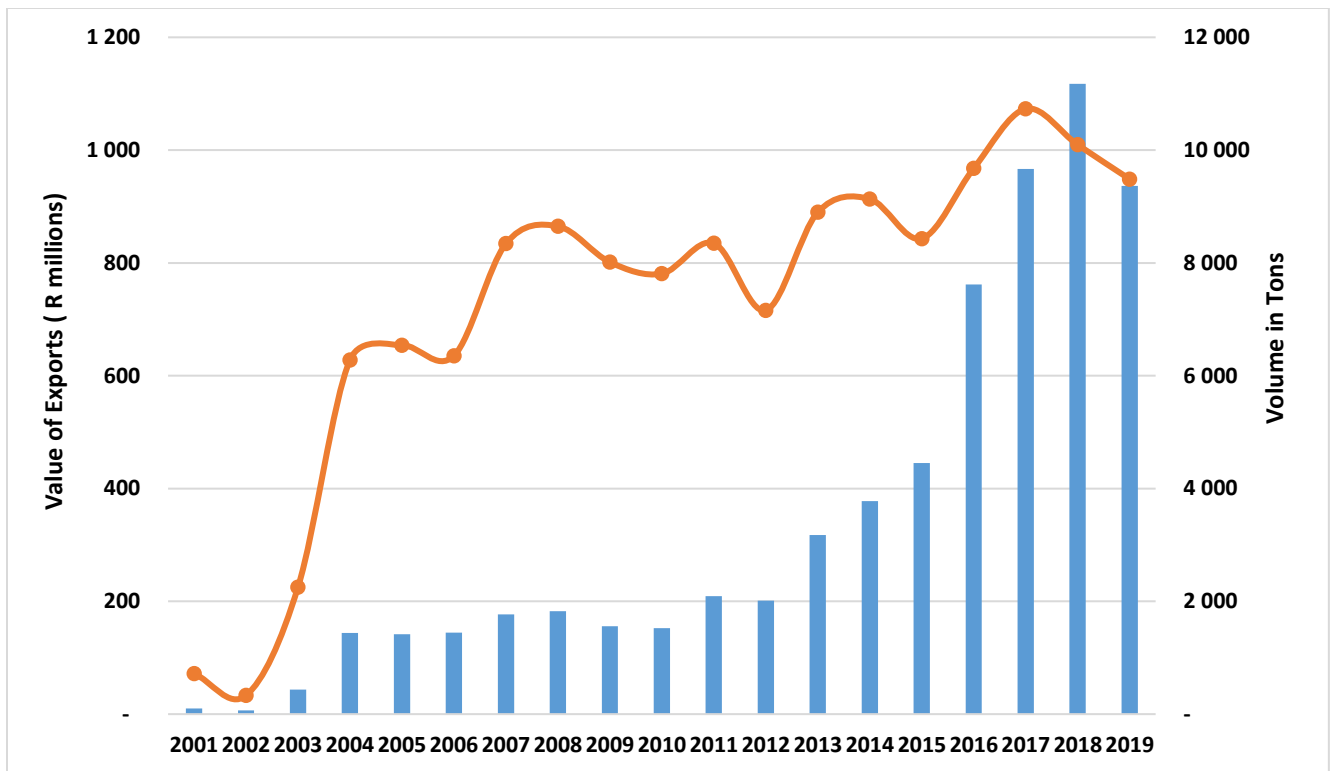


Figure 4: Volume and value of rooibos exports, 2001 – 2019

Source: (ITC, 2020)

This strong growth in the value of export was mainly driven by a significant improvement in price levels, especially compared to the period prior to 2010. Figure 5 gives the trend in export unit prices from 2001 to 2019. The Rand value per ton of exported rooibos was R28 000 per ton in 2012, which increased to its highest peak in 2018 of R110 000 per ton. In 2019 this price level dropped back to around R98 000 tons.

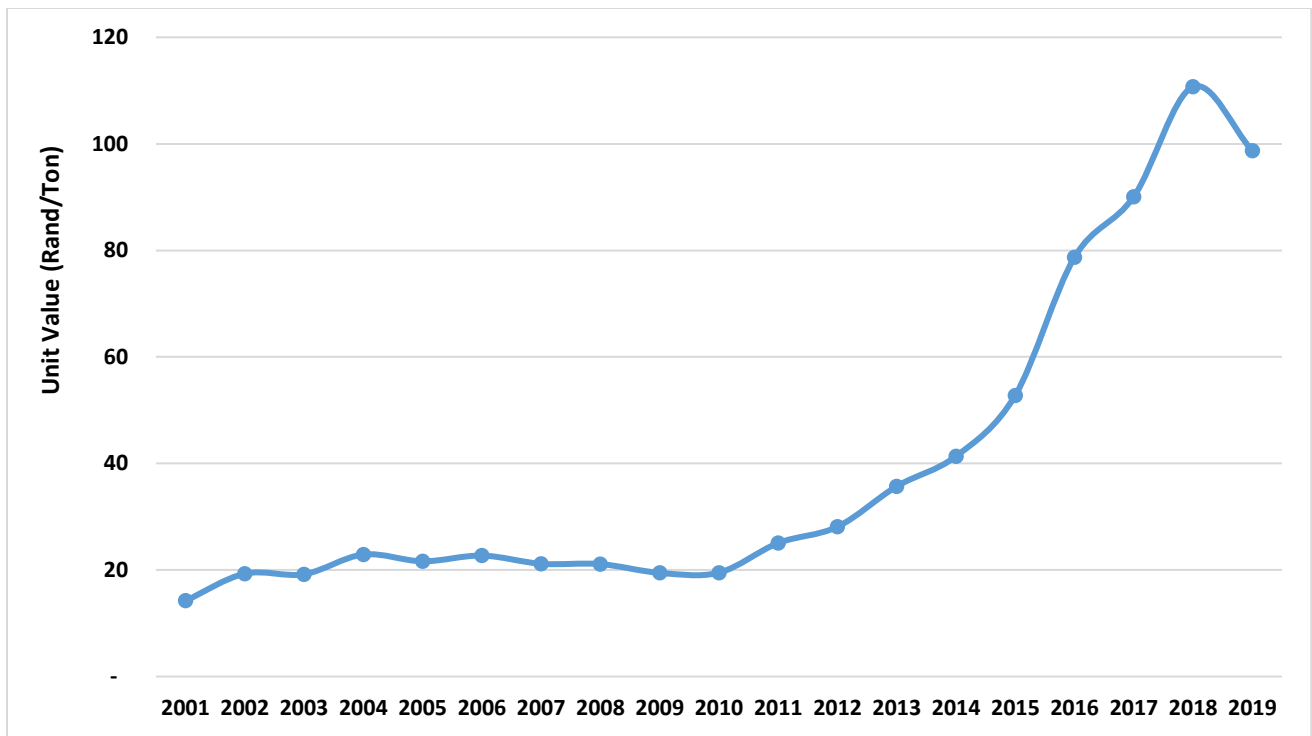


Figure 5: Export unit price (Rand/Ton), 2001 – 2019

Source: (ITC, 2020)

In Figure 6, the top five rooibos tea importing countries for 2012 as given were Germany (42%), followed by the United Kingdom (9%), Netherlands (7%), Japan (7%) and United States (5%). Over time, this picture has changed with Japan's share increasing from 2013 to 2019, after declining slightly. In 2019, Germany continues as the top export market for South Africa rooibos making out 36% of the total export volumes in 2019, followed by Japan (21%), United Kingdom (8%), the United States (7%) and the Netherlands (5%).

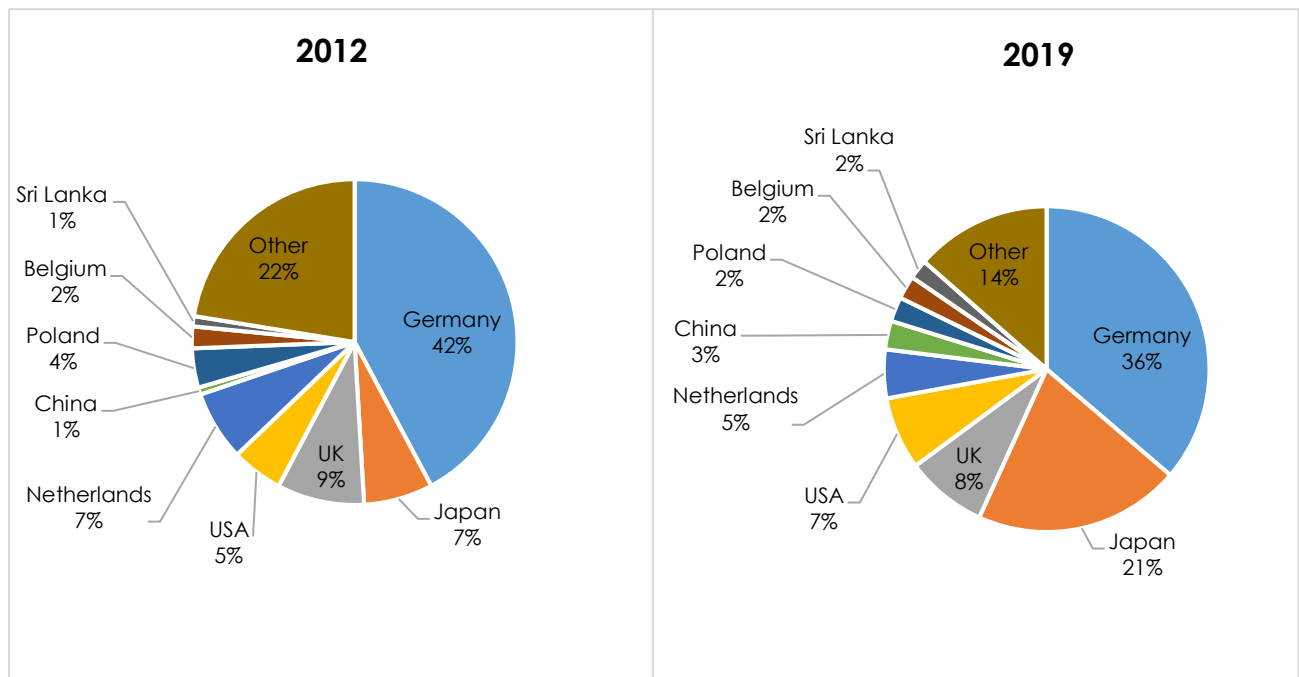


Figure 6: Export destinations of South African rooibos tea: 2012 – 2019

Source: SARS (2020)

3.3. Value chain and Industry structures

The South African Rooibos industry's structure mainly consists out of three levels: the farm level is where the primary production and tea courts are utilised, followed by the processing level (including both 2nd stage processing and final processing) and lastly the trade level (also known as the marketing stage). According to the Rooibos Council (2019), there were around 510 rooibos farmers in South Africa, of which 300 were commercial farmers.

In terms of further processing of rooibos tea, around 11 processors buy raw tea stems from farmers, which are then fermented, dried and graded. The final product is then sold in various local and international markets, either branded or in bulk. Figure 7 provides further details of this process, describing the value chain of the Rooibos industry and sums it up in five steps.

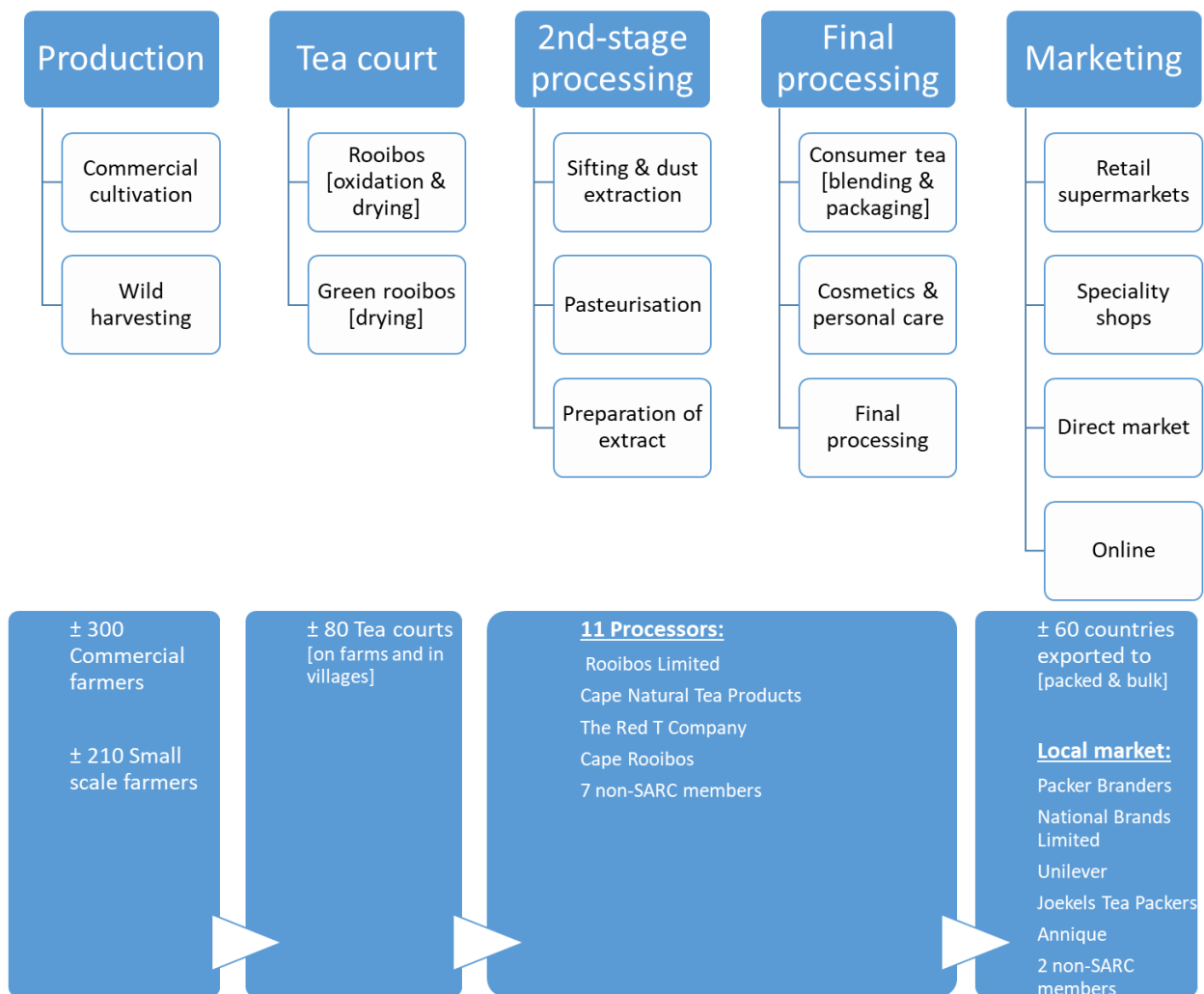


Figure 7: The value chain of the rooibos industry

Source: Troskie (2019); Rooibos Council (2019); Insight Survey (2018)

4. Potential for the Overberg

The production performance discussed in the previous section highlighted a number of realities and characteristics of rooibos farming in South Africa. Since climate has a dramatic impact on yield performance, alternative growing regions for rooibos needs to be considered. Not only is this a prudent step towards a diversification strategy, but an opportunity for economic growth and job creation in an industry that South Africa has a distinct comparative advantage. One option to develop the rooibos tea industry is in the Overberg region, which although more known for its honeybush tea production, presents a compelling case for rooibos expansion (WCDOA, 2013).

The Overberg region has had rooibos tea planted before, but it is not well captured in official statistics. The 2002 census of commercial agriculture reports 10 hectares of rooibos hectares planted close to Bredasdorp and October (2020) suggests that rooibos tea was planted in the Elim/Strandveld area before 2010. Fortunately, the WCDoA's flyover project in 2017 captured and totalled 58ha of rooibos tea production in the Overberg of which all of this was located in the Cape Agulhas municipal area. Since then there has been a rapid expansion in rooibos tea production with the most recent estimate being around 682 ha as shown in Figure 8 below (Wessels, 2019). This survey of rooibos area was done by Esther Wessels and Gary Jones from the Department of Agriculture, Bredasdorp office. They interviewed Mr October on 10th of October 2019 to get the GPS coordinates and the hectare sizes of the new rooibos plantings. When the WCDoA's flyover project was conducted in 2017, the crops that were produced on the 682 ha can be seen in Table 2. Clearly, farmers in the region have opted to replace existing land use, the majority formerly used for lucerne& medics and other planted pastures to now plant rooibos tea.

Table 2: 2017 Flyover hectares compared to the 2019 hectare survey

Crops planted or present with the 2017 flyover	Hectare under production 2017	Current crops on the 2017 flyover area	Hectares under current production – 2019
Fallow	50	Rooibos	682
Lucern/Medics	298		
Planted pastures	75		
Proteas	70		
Rooibos	58		
Small grain	54		
Wheat	25		
Other	52		

Source: Wessels, 2020

Figure 8 shows the exact location of where the new rooibos planting were established.

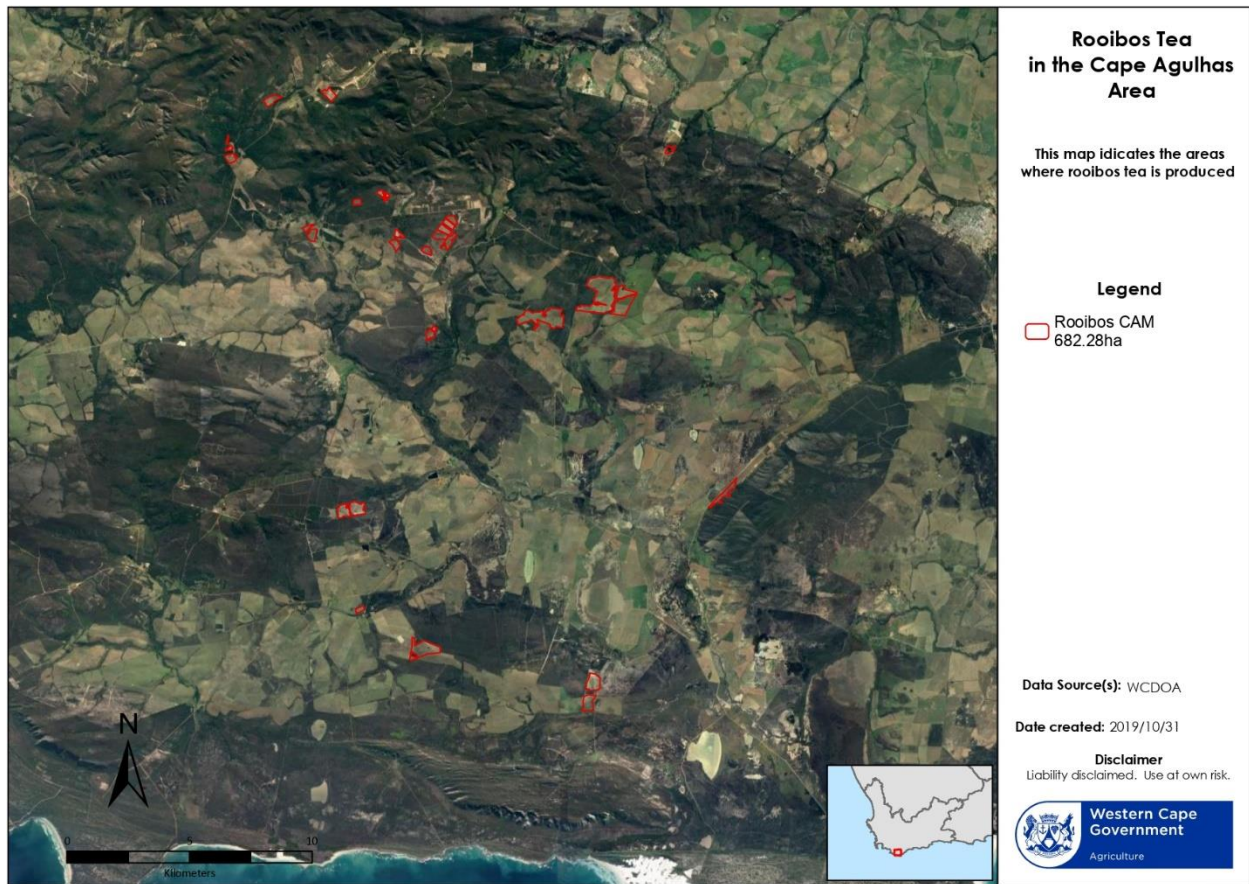


Figure 8: Rooibos tea production in the Cape Agulhas area

Source: Wessels (2019)

As already mentioned, rooibos flourish in a particular climate and topography. Using these requirements, Figure 9 shows the most suitable (green) growing areas for rooibos tea in the Overberg. Clearly, the areas surrounding Bredasdorp, Elim and Napier which have higher altitudes are also the region where current production are currently taking place (given in red boundaries). The Figure also shows that vast areas of high potential exist in the Cape Agulhas municipality.

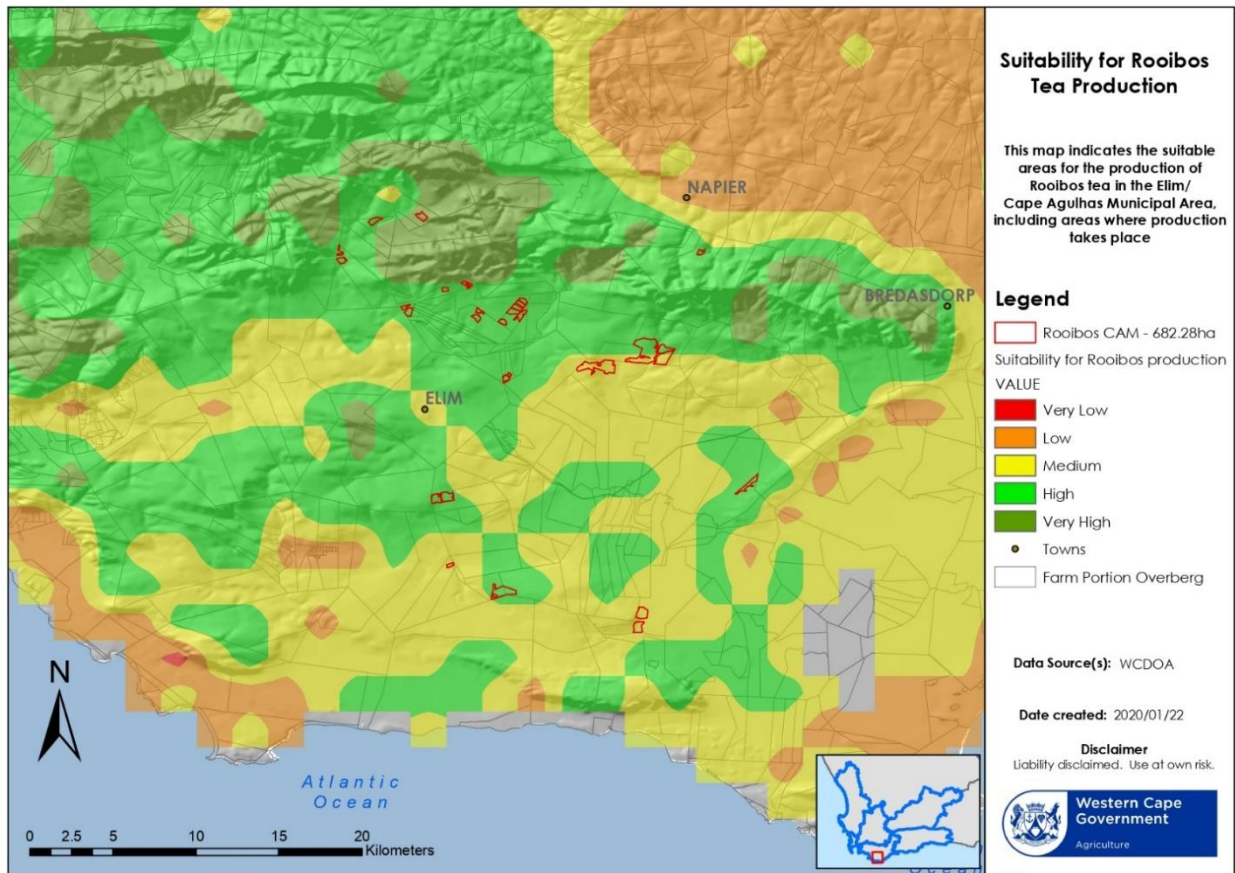


Figure 9: Suitable areas for the production of rooibos tea in the Elim/Cape Agulhas Municipal Area

Source: Wessels (2020)

This high potential areas for rooibos production should however also be seen in the context of what land use is currently taking place. The development and investment in more rooibos hectares will primarily be driven by economic returns per hectare and its feasibility. Table 3 shows the breakdown of the suitability classes developed, broken down by the amount of protected area, areas where current crops are farmed and natural grazing.

Table 3: Crops currently planted on the suitable areas for rooibos production

Current uses of the suitable rooibos areas	
Protected areas	55 884
Crops	58 948
Grazing/Pastures	35 616
Fallow and natural veld	4 389
Urban area/structures/housing	172

Source: Wessels (2020); Own Compilation (2020)

In addition, as is shown in Figure 10, some areas within the Overberg are protected biodiversity areas and not available for production. Comparing current production, 682 ha to potential, 266 798 ha², in the Overberg area shows great potential for expansion of the rooibos industry as can be seen in Figure 10 below. Keep in mind that if the current planted areas and the urban areas are excluded from the 266 798 ha that is very high and highly suitable for rooibos production, the hectares left will add up to **168 354 ha**. These available hectares are areas that are natural areas, high lying areas, alien vegetation areas and small pockets for possible plantings without EIA's approval.

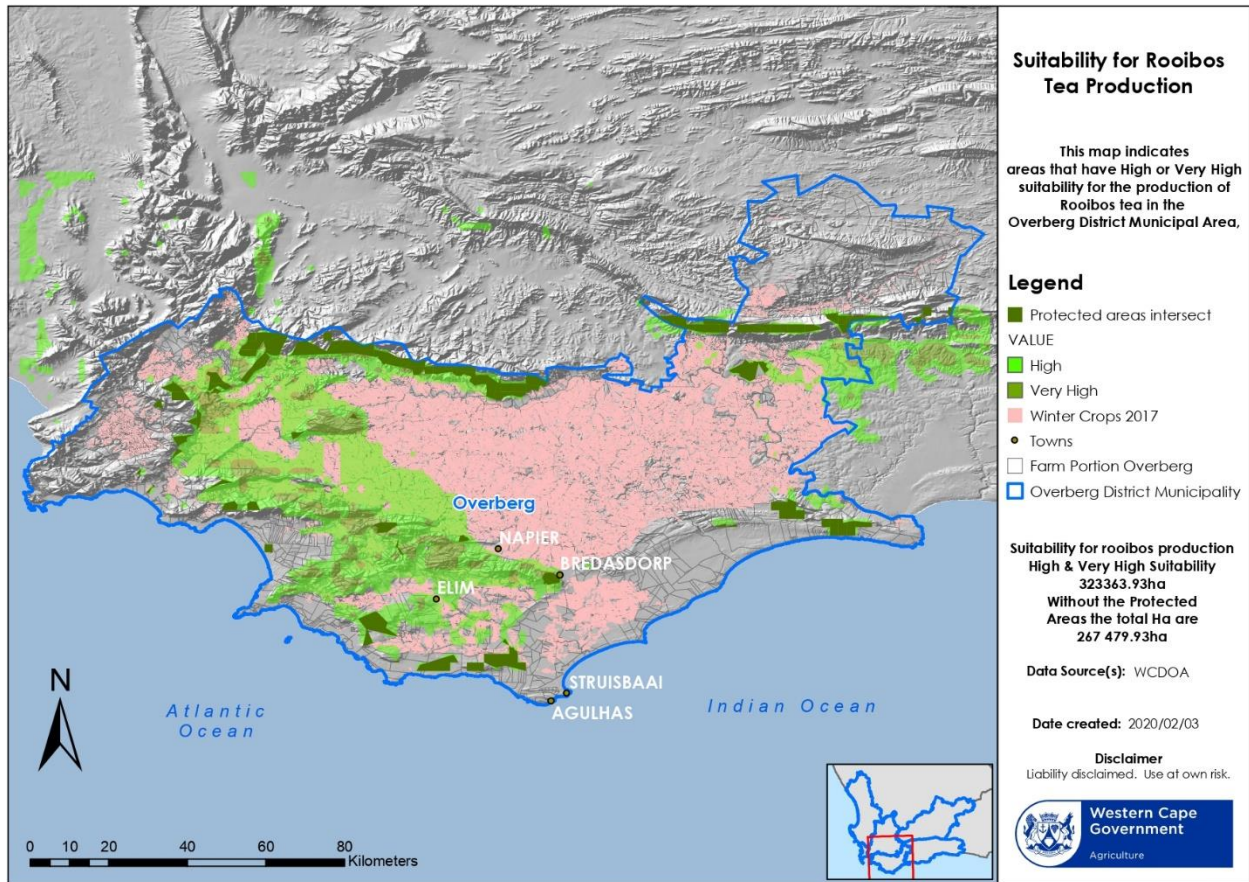


Figure 10: Suitability for Rooibos Tea Production - Total hectares

Source: Wessels (2020)

Figure 10 also indicates that the total hectares suitable for rooibos production is 323 364 ha but it includes the protected areas, as well as the winter crop areas. Therefore, the actual hectares available is less and before any expansion plans can be developed, the value of the winter crops must also be considered.

²267 479.93ha are suitable for rooibos tea production, this includes the current hectares under production.

The gross margin analysis conducted in this study, Table 4, will also provide some comparison on the level of returns of rooibos compared to wheat and canola. In order to assess the economic opportunity for rooibos, detailed information of yields, production costs and prices are needed. This information was compiled by developing enterprise budgets for two producers (1 larger producer who owns and rents various farms on which rooibos is produced. The other producer is smaller and only been in production for 1 rooibos cycle), aggregated to get an average income and costing for rooibos enterprises in the Overberg region for the 2019 season. This is then compared to rooibos enterprises located in the more traditional growing areas of the Cederberg. Industry averages were used for the Cederberg region.

Table 4: Gross margin analysis for rooibos compared to wheat and canola

Product income			
Product	Rooibos OB	Wheat (3.5 ton per ha – priced at R3 600 per ton)	Canola (2 ton per ha – priced at R5 300 per ton)
	R/Ha	R/Ha	R/Ha
	12 497	12 600	10 600
Cost of production			
	Rooibos	Wheat	Canola
	R/Ha	R/Ha	R/Ha
Fertiliser	907	2 077	2 460
Plant material	4 143	630	460
Weed Control	15 332	435	916
Pest Control	Labour cost sums up weed control, pest and fungal control for rooibos – farming organically.	202	586
Fungal control		710	353
Fuel	1 451	2 134	2 134
Repair and maintenance	855	1 931	1 931
Interest	1 758	396	368

Source: Maqqibelo, 2020

4.1. Production cost, yields and prices

Enterprise budgets were developed for comparisons to be made between the Overberg and Cederberg in terms of yields, income and expenses. An enterprise budget was developed for the Overberg region and the 2018 Cederberg region enterprise budget was updated in May 2020. Table 5 gives a summary of the cost involved in establishing one hectare of rooibos tea for the respective areas. Table 5 indicates that once all directly and indirect allocatable costs are included, it cost around R5 767 more to establish one hectare of Rooibos in the Overberg, compared to the Cederberg.

Table 5: Comparison: Establishing cost - Overberg versus Cederberg

Activities	Overberg	Cederberg
Directly allocatable costs (R)		
Planting material	4 143	1 150
Fertiliser	907	9 221
Chemicals (Herbicides, Pesticides and Fungicides)	0	462
Labour	15 332	4 827
Indirect allocatable variable costs (R)		
Fuel	1451	865
Repairs & maintenance	854	494
Interest on working capital	1758	1 659
Total costs	24 445	18 678

Source: Lingani (2020)

The analysis and comparison provides some distinct differences in the on-farm costing between the two regions. The first big difference was the cost per hectare of planting material for the Overberg enterprises. In general, this difference is associated with the Overberg region importing the planting material from the Cederberg region. A trial has been conducted on one of the farms in the Overberg to start producing their own seedlings but only 20% of the seeds germinated and could be used as seedlings (van Schalkwyk, 2019).

It should also be worth noting that the much smaller cost of fertiliser and chemical applications were not due to transport differences, but rather that the bulk of production in the Overberg is grown organically. This then also explains to a large degree why the expenditure on labour is much higher compared to the Cederberg area.

Looking at the breakdown of activities for the Overberg, labour, planting material, fuel, repairs and maintenance are the activities that are more expensive when compared with the Cederberg area. Fertiliser cost is much higher in Cederberg mainly due to the soil quality and the fact that the enumerated farms in the Overberg utilise organic production methods which require little fertiliser application.

A reason for the high labour cost in the Overberg as confirmed by the farmers and by looking at the different rooibos systems, organic and traditional, is that rooibos tea in the Overberg is farmed organically which is more labour intensive than the traditional production in the Cederberg area. In the Overberg, labour is used to remove weeds mostly in the first year to prepare the land for planting. The high fuel spends reflected for the Overberg is due to the use of machinery for weeding and later on for the transporting of their product to the market, which is around 300 km from the market as opposed to the 40km distance for the Cederberg. Planting material was another cost item with a large difference between the two regions, the Overberg's cost higher due to farmers having buy seeds that must be planted in a nursery to get seedlings. The nursery cost is more than R3 000 together with the cost of transplanting is again an additional cost for the farmer.

Table 6 compares the production cost for a one-hectare rooibos tea farm portion in the Overberg and Cederberg for year 2 to year 6. For reporting purposes and comparison, the cost for packaging material was excluded from the Cederberg calculation, as well as insurance. The interviewed farmers indicated that they do not have insurance or they do not want to disclose what their insurance premiums are. Casual labour includes labour for weeding, harvesting and for drying. The Overberg does not have drying yards, which means that drying is done by the processors with farmers paying a drying and cutting fee. For the Cederberg farmers, drying and cutting cost is done on the farm and therefore its cost is mostly included in the labour cost, but for this report it is separated from the labour category for ease of comparison.

Table 6: Comparing the production years - Overberg versus Cederberg area for one

Activities	Year 2		Year 3		Year 4		Year 5		Year 6	
	Over berg	Ceder berg	Over berg	Ceder berg	Over berg	Ceder berg	Over berg	Ceder berg	Over berg	Ceder berg
Directly allocatable costs (R)										
Planting material	0	0	0	0	0	0	0	0	0	0
Fertiliser	0	0	0	0	0	0	0	0	0	0
Herbicides	0	201	0	201	0	201	0	201	0	201
Chemicals	0	261	0	261	0	261	0	261	0	261
Casual labour	1 491	3 218	4 579	5 851	5 929	5 119	5 455	4 388	2 740	3 218
Drying and cutting cost	874	0	3 383	3 510	4 508	2 925	4 067	2 340	1 774	1 462
Indirect allocatable variable costs (R)										
Fuel	6 568	740	6 661	1 059	6 661	1 032	6 661	705	6 568	705
Repairs & maintenance	3 401	515	3 383	641	3 496	619	3 496	389	3 401	389
Interest on working capital	956	481	1 404	1 123	1 596	990	1 525	807	1 122	608
	13 290	5 416	19 410	12 646	22 190	11 147	21 204	9 091	15 605	6 844

Source: Lingani (2020)

Table 6 shows that the fuel category is the most expensive activity for the Overberg rooibos farmers, followed by repairs and maintenance (almost constant annual amount). Looking at each year, it is clear that Overberg producers spend more on production and operational costs than those in the Cederberg region. Year 2, 5 and 6 shows that the total cost for the Overberg is more than double that of the Cederberg region.

Table 7 was created to add casual labour cost and the cost for drying and cutting ³ together, to get to the total labour cost per region, as labour cost is a large portion of the total production/operation costs. Table 7 below shows the same trend for both regions, a steep increase in labour cost, followed by a gradual decrease than a steep decline, especially in the case of the Overberg.

Table 7: Labour cost (including casual labour and drying & cutting cost)

Production year: Casual labour & drying and cutting cost	Production Area	
	Overberg (R)	Cederberg (R)
2Yr	2 366	3 218
3Yr	7 963	9 362
4Yr	10 438	8 045
5Yr	9 522	6 729
6Yr	4 514	4 681

Source: Lingani (2020); Own compilation (2020)

Figure 11 looks at the labour cost per region and yield per hectare, illustrating the same pattern for both regions. For example, as yield increases, labour costs will increase and as yield decreases, labour costs will decrease. In the Overberg, yield increased at a steep upwards trend from year 2 to 3 and more than tripled in yield. The same pattern is observed for the Overberg's labour cost. Year 2 to 3 delivered a quadrupled yield production for the Cederberg and it doubled in labour cost.

Year 3 to 4 shows another increase for the Overberg region, for both yield and labour cost, but is not such a steep increase as the previous year. The Cederberg, on the other hand, shows a decline for both yield and labour cost from year 3 to 4. From year 4 until year 6 a decline in yield, as well as labour cost can be seen for both regions. Year 5 to 6 shows a steep decline for both categories.

³ Drying and cutting cost is seen as normal labour cost in the Cederberg region.

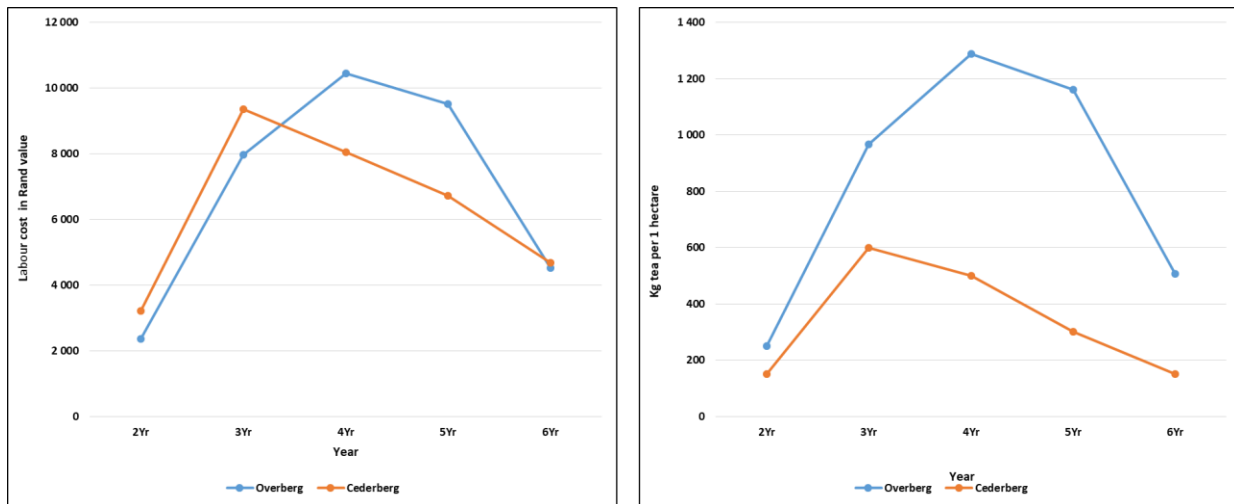


Figure 11: Labour cost and Yield (Kg per 1 hectare)

Source: Lingani (2020); Own compilation (2020)

Table 8 shows that rooibos tea farmers receive R50 per kg of rooibos tea⁴ (Lingani, 2020). Farms in the Overberg have a yield advantage over the Cederberg farms, as it produces more than double that of the Cederberg farms every year. This can be due to the higher soil carbon in the Overberg, but more research is required (Pretorius, 2019). The highest yields produced for the Overberg is in year 4 and 5, 1 288 kg and 1 162 kg respectively, compared to year 3 (600 kg) and 4 (500 kg) for the Cederberg.

Table 8: Yield and price comparison

Production year:	Production Area			
	Overberg		Cederberg	
	Kg per 1ha	Price per kg	Kg per 1ha	Price per kg
2Yr	250	50	150	50
3Yr	967	50	600	50
4Yr	1 288	50	500	50
5Yr	1 162	50	300	50
6Yr	507	50	150	50

Source: Lingani (2020); Own compilation (2020)

⁴ This value was given when the study was conducted from February to March 2020.

5. Conclusions and Recommendations

This report set out to show what is currently happening in the Overberg in terms of Rooibos production, and to compare Overberg's production to that of the Cederberg region. The findings show that Overberg presents an opportunity for rooibos expansion. Of the total of 169 036 ha which was classified as suitable for rooibos expansion, only 682 ha is currently under production, leaving 168 354 ha available for production. The new and updated enterprise budgets assisted with the comparisons between the Overberg and the Cederberg highlighted the significantly higher yield obtained in the Overberg produces when compared to the more traditional growing averages of the Cederberg. It was also evident that establishing cost was much higher in the Overberg due to high labour costs and planting material. The other production years, year 2 till 6, also showed that the Overberg is spending more on production costs, the high expenses items were fuel, repairs and maintenance and labour cost. The Overberg makes use of more manual labour as producers are following an organic farming approach. The distance from the market also contributes to the high fuel expense. Despite the differences in production costs and approaches, both regions receive the same price for a kilogram of rooibos tea. The review of the history and growth of the rooibos industry in recent years suggest that that expansion in the Overberg present economic opportunities to this area.

Future recommendations and research are:

- ***For the Overberg farmers to get a better price for their organic rooibos, they need to get organic certifications;***

This implies that further investigation is needed to determine what the process and the financial implications will be for the farmers to obtain organic certification.

- ***The need for a drying and cutting facility;***

A study needs to be conducted that will look at what will the cost be to establish a drying and cutting facility for the farmers in the Overberg and what volumes need to be delivered to this facility to make it feasible. The management and business model would need to be identified i.e. who will be in charge of such a facility? What business model will be used to sustain this facility?

- ***Access to direct markets;***

Normally the producers deliver to processors that will sell it to local or international tea companies. Farmers get the price that the tea processor is willing to pay that will

usually depend on how saturated the tea markets are, as well as what is currently trending in the international tea markets.

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