



ROOIBOS INDUSTRY FACT SHEET 2018

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1. WHO IS THE SOUTH AFRICAN ROOIBOS COUNCIL

1.1. SARC mission and vision

The South African Rooibos Council (SARC) is an independent organization, representing rooibos processors, packers and branders. Its mission is to responsibly promote rooibos and its attributes, and protect the interests of the rooibos consumer and Industry stakeholders. This mission is supported by effective research and communication.

SARC's vision is to:

1. Use available resources to effectively and efficiently promote, grow and protect the rooibos industry of South Africa for its stakeholders, locally and internationally.
2. Support appropriate research and communication to promote the benefits of rooibos.
3. Respond to threats and crises in the rooibos industry on behalf of its stakeholders and to protect the interests of the consumers.
4. Disseminate relevant information to encourage consistent product quality and adequate supply (SARC (D), 2016).

The main activities, and the bulk of SARC's funding, is dedicated to product research into the benefits of rooibos. SARC uses the research results to promote rooibos products both locally and internationally and grow the industry. SARC also has a strong focus on communication with and protection of the rooibos consumer.

1.2. The Members of SARC

SARC currently has eight member-companies. Six of the member-companies have representatives on the Board of SARC, each with his or her specific portfolio. SARC is managed by a Board of Directors elected from and by its members to represent the various stakeholders in the rooibos value chain.

Please see below details of the members, including the portfolios of the Board of Directors.

<i>Company</i>	<i>Representative</i>	<i>Director</i>	<i>Portfolio</i>
<i>Rooibos Ltd</i>	Martin Bergh	Yes	Core function and membership
<i>Annique Health and Beauty</i>	Adele du Toit	Yes	Marketing and promotion
<i>Cape Natural Tea Products</i>	Dawie de Villiers	Yes	Compliance, legal and GI
<i>Joekels Tea Packers</i>	Joe Swart	Yes	Research
<i>Cape Rooibos</i>	Déan Nigrini	Yes	Finance
<i>National Brands Limited</i>	Nicie Vorster	Yes	Corporate communication
<i>Unilever South Africa</i>	Shahir Jinabhai	No	<i>General member</i>
<i>The Red T Company</i>	J.W. Ferreira	No	<i>General member</i>

1.3. The Secretariat of SARC

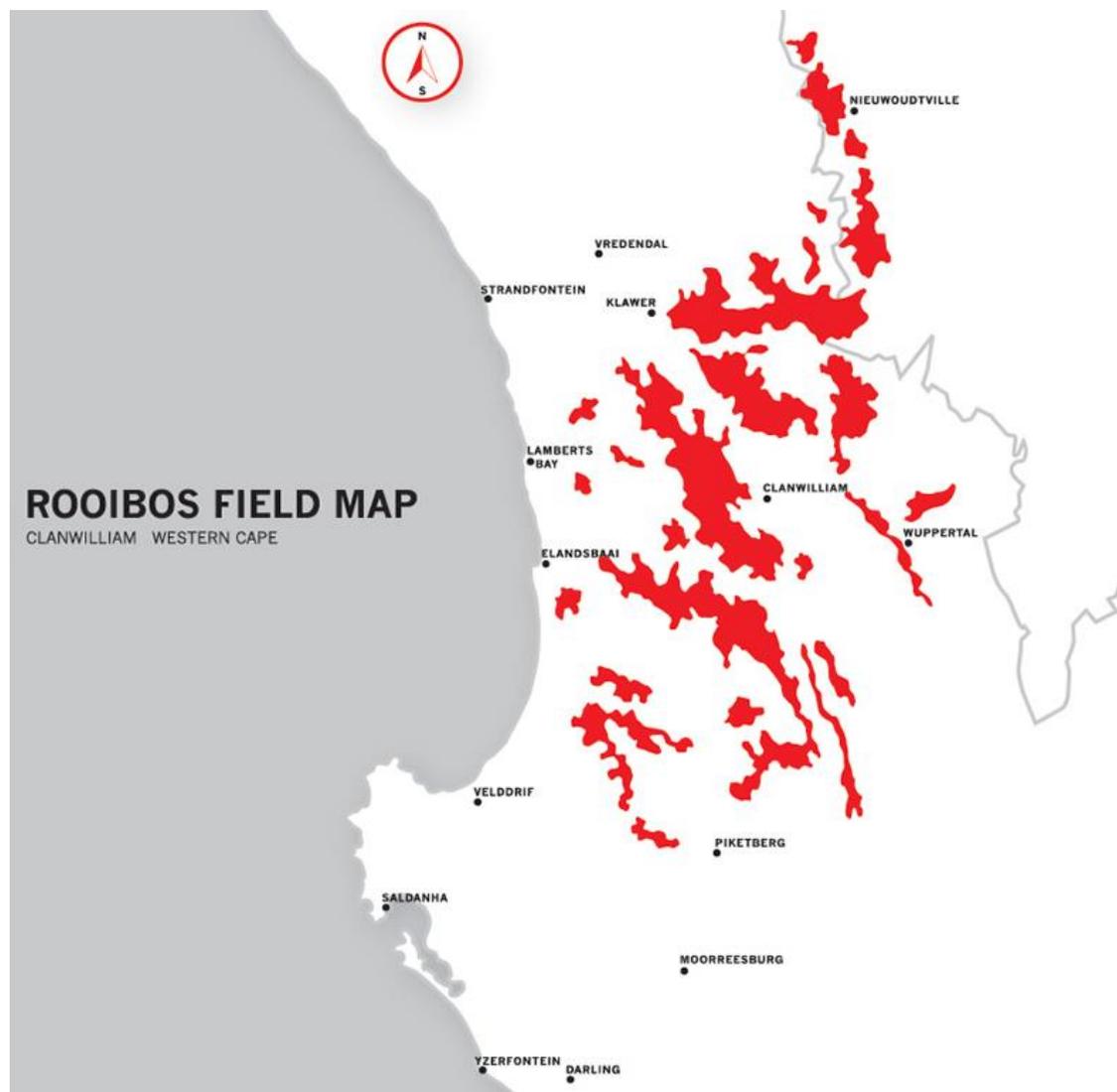
Kruger Swart & Associates (<http://www.skaa.co.za>) acts as the Secretariat for The South African Rooibos Council. Any enquiries can be directed to Marthane Swart as per details below.

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2. INDUSTRY PROFILE

2.1. Rooibos Production Areas: Western & Northern Cape of South Africa



(Rooibos Ltd, 2016)

2.2. Rooibos at a glance

- Rooibos provides income and employment to approximately 8 000 farm labourers in South Africa. Further employment is created in upstream activities such as processing, packaging, retailing etc.
- Rooibos is a dryland crop and production vary according to the amount of rainfall. In the past ten years, production has varied between 10 000 and 18 000 tons a year.
- Global consumption of rooibos has reached 15 000 tons in 2016.
- The increasing global demand for rooibos pushed exports up to more than 6 000 tons per annum in 2016.
- The total rooibos sales in 2016 was equal to 6 billion cups of tea – that is close to one cup per human on earth.

- Rooibos is exported to more than 30 countries across the globe. Germany, the Netherlands, Japan, the United Kingdom and the United States of America are the biggest importers of rooibos (SARC (D), 2016).

2.3. Where and how Rooibos grows

Aspalathus Linearis – Rooibos – is endemic only to South Africa. Production areas are mostly in the Cederberg and Sandveld areas (Fynbos Biome) of the Western Cape and the Bokkeveld area (Succulent Karoo) of the Northern Cape (O’Donoghue & Fox, 2009). This tiny geographical region provides the perfect environment for rooibos cultivation. Vital characteristics of this environment are the Mediterranean climate with a winter rainfall between 200 mm and 450 mm per year; deep, coarse and acidic sandy soils; and temperatures that can range from zero degrees Celsius in winter months, to up to forty-five degrees Celsius in summer. No irrigation is used on the rooibos plant and this hardy dry land crop is often subjected to drought conditions. The survival mechanism of the rooibos plant is its tap root that digs down 3m or more into the well-drained soil (DAFF, 2010).

2.4. The rooibos plant

Rooibos is one of 278 species of the *Aspalathus* genus. The second part of its name – *Linearis* – refers to the shape of the plant’s needle-like leaves. Rooibos bushes grow to a height of approximately 2m (SARC, 2016). The rooibos plant’s narrow leaves have very limited surface areas, which minimizes the loss of moisture on hot days (O’Donoghue et al, 2009: 8).

The rooibos plant has an average lifespan of 6 years and delivers an average of 4 crops. It is good agricultural practice to allow a rest period of 2-3 years before re-planting fields. In a full cycle (growing period plus rotation period) the plant’s average lifetime yield is 18000 kg/ha (SARC, 2016).

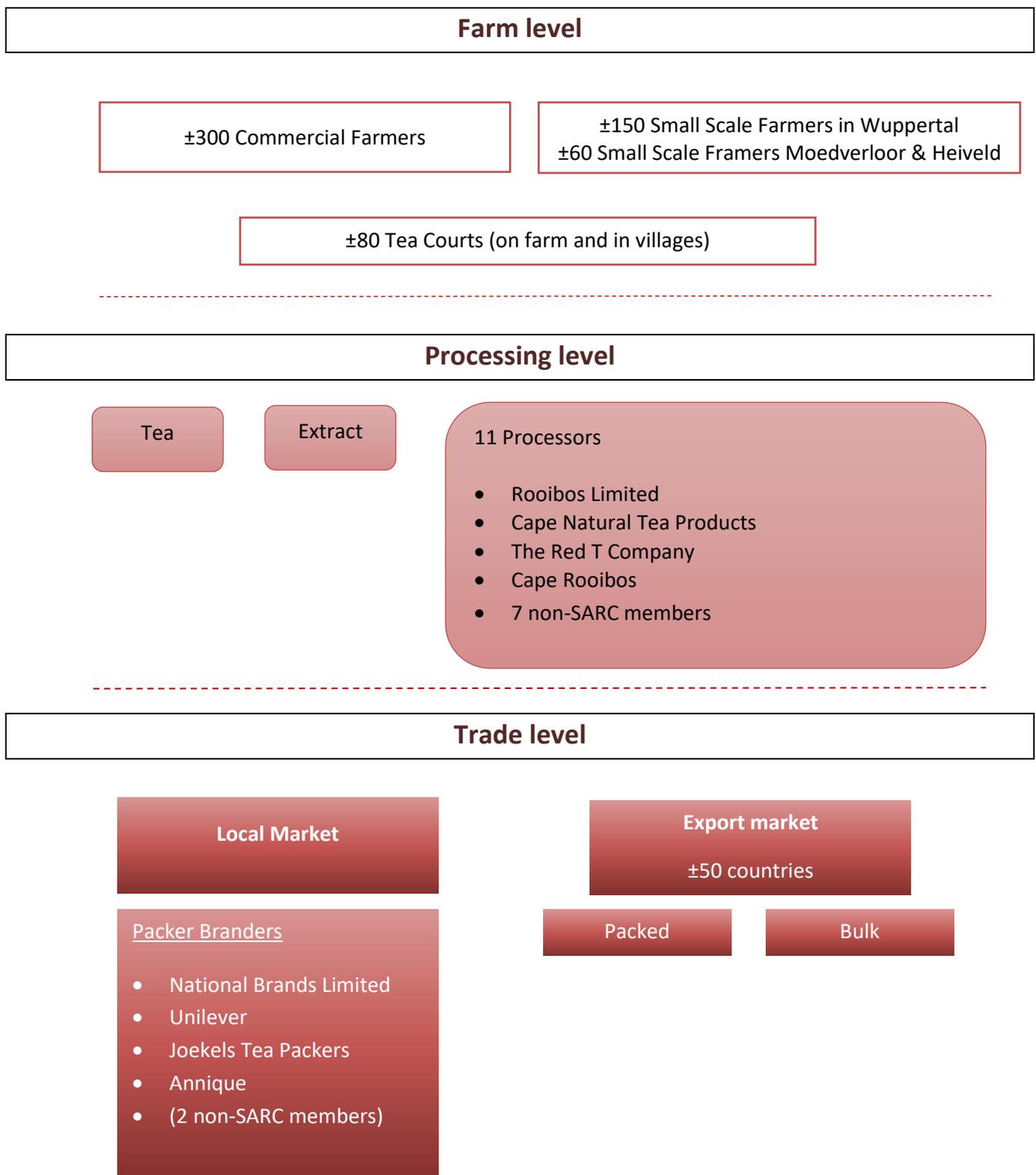
2.5. Different types of Rooibos

“Rooibos” refers to rooibos prepared through the traditional process of fermentation. This process includes cutting, bruising and wetting the leaves with water; after which the damp leaves left to ferment for 12 hours. A process of enzymatic oxidation takes place, during which the product changes from green to the distinctive amber hue. Finally, the rooibos is spread out in the sun to dry (Rooibos Ltd 2016; SARC 2015).

Green – or unfermented rooibos – is harvested, cut and then dried immediately, without the fermentation step. When served, it has a lighter colour compared to traditional rooibos (SARC (A), 2016). Both traditional and green rooibos contain polyphenols, although different types, and have anti-mutagenic properties.

Organic rooibos (red or green) is grown without the use of any artificial fertilisers or pesticides. The organic status of the product is monitored by various international organizations that provide organic certification (SARC (B), 2016).

2.6. Rooibos industry structure



3. PRODUCTION OF ROOIBOS

3.1. Value Chain



FARM:

About 18 months after plantations have been established the plants are pruned for the first time and thereafter it is harvested annually by cutting of the branches 50 cm above the ground.



PROCESSOR:

After proper airing and watering the rooibos is left in low heaps to ferment. A process of enzymatic oxidation takes place. Rooibos is then spread out in large drying yards to dry. Special machines collect the dried rooibos, after which it is delivered to the factory for further processing.



PACKER-BRANDER:

The product is graded according to length, colour, flavour and aroma.

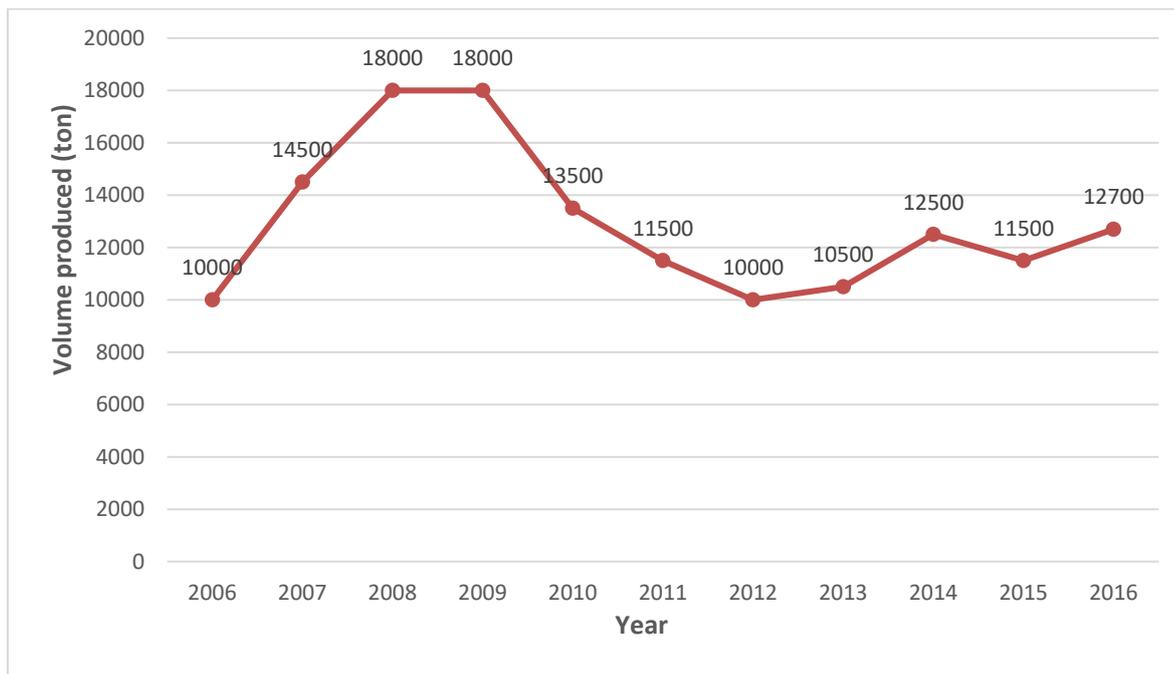


CONSUMER:

Consumers around the world enjoy a cup of healthy, hearty rooibos.

(SARC, 2016)

3.2. Crop



(SARC, 2017)

4. INDUSTRY REGULATIONS AND STANDARDS

4.1. Industry Legislation

4.1.1. Government Gazette Notice 911 of 2013: Final Prohibition on the Use of Certain Words

The main purpose of Notice 911 of 2013 of the Merchandise Marks Act is to govern the use of the name “rooibos” in order to prevent the misuse of the name locally and internationally. Trademarks registered *before* the effective date (6 September 2013) are not affected by this regulation, but all new products that want to make use of the word rooibos need to ensure that it contains 100% rooibos, *or* has rooibos as its main ingredient. Such regulations will protect the consumer from misleading claims. The notice further stipulates that the terms ‘Rooibos’, ‘red bush’, ‘Rooibostee’, ‘Rooibos tea’, ‘rooitee’ and ‘Rooibosch’ may only be used when the dry product, infusion or extract is 100% pure rooibos (derived from *Aspalathus Linearis*). Furthermore, the notice stipulates that the above terms (referring to rooibos) can only be used when the product was grown in the geographic area as described in the application, i.e. the winter rainfall area of South Africa. A product blended with teas, infusions and other products may also be called the above terms if the *main* ingredient is rooibos.

4.1.2. Agricultural Product Standards Act

The Directorate Food Safety and Quality Assurance of the Department of Agriculture, Forestry and Fisheries published the Agricultural Product Standards Act (Act no 119 of 1990) and the Amendment Act (no 18 of 2015). The purpose of this legislation is to stipulate the standards and requirements applicable to the export of rooibos and rooibos mixtures. The Act further specifies the requirements pertaining to the type of rooibos that may be exported; the safety standards for rooibos and rooibos mixtures; the containers used for exporting

and the accompanying labelling; the obtainment of a representative sampling; and the methods of inspection. To download any of these industry regulations, please visit: <http://sarooibos.co.za/legal-and-branding>.

4.2. Labour and employment legislation

The table below summarises all legislation pertaining to employment of labour on rooibos farms.

<i>Act</i>	<i>Purpose</i>
<i>Basic Conditions of Employment Act 75 of 1997</i>	Regulates working hours, leave, termination of employment and all other matters related to employment.
<i>Sectoral Determination 13: Farm Worker Sector</i>	Specifically regulates minimum wages, working hours and general conditions of employment for farm workers.
<i>Compensation for Occupational Injury and Diseases Act 130 of 1993</i>	Provides compensation for injuries, diseases and death that occurred during an employee's normal course of employment.
<i>Employment Equity Act 55 of 1998</i>	Provides a framework for employers to implement affirmative action and protect workers and job seekers from unfair discrimination.
<i>Labour Relations Act 66 of 1995</i>	Aims to promote peace and democracy in the workplace, as well as economic development and social justice.
<i>Occupational Health and Safety Act 85 of 1993</i>	Aims to provide healthy and safe working conditions for all employees.
<i>Skills Development Act 97 of 1998</i>	Aims to increase the skills of the South African workforce and, in doing so, improve their prospects for work and thus their quality of life.
<i>Skills Development Levies Act, 1999</i>	Regulates the skills development levies that employers must pay towards the National Skills Fund.
<i>Unemployment Insurance Act, 2001</i>	Aims to protect workers who find themselves unemployed and lays out the benefits available to them in such an event.
<i>Unemployment Insurance Contributions Act 4 of 2002</i>	Provides for matters connected to the collection and obligations of the Unemployment Insurance Fund (UIF).

(Pretorius et al, 2011: 26)

The Department of Labour establishes the minimum wage for farm workers, which is then published in a Sectoral Determination on 1 March every year.

5. VALUE OF THE INDUSTRY

5.1. Export per market destination 2016

<i>Rank</i>	<i>Country</i>	<i>Volume (Kgs)</i>	<i>Percentage of total export</i>
1	Germany	1644198	25,94%
2	Japan	1399230,64	22,07%
3	Netherlands	842251,22	13,29%
4	UK	634254,6	10,01%
5	USA	554990,5	8,76%
6	Poland	153000	2,41%

Rank	Country	Volume (Kgs)	Percentage
7	Zimbabwe	145200	2,29%
8	Belgium	119500	1,89%
9	Australia	111564,8	1,76%
10	Sri Lanka	100041,5	1,58%

(SARC, 2017)

5.2. Rooibos export volumes

Rooibos exports in the early part of the 21st century grew strongly to more than 7 000 tons in 2007. There was a boom in 2007, especially in Germany. Rooibos was very affordable at this stage and the health properties were widely acclaimed. Since 2007, growth of rooibos exports has slowed (SARC, 2016). In 2015, 6 560 tons of rooibos were exported. The total export volume for 2016 was 6 338 tons (SARC, 2017).

5.3. Domestic Rooibos Sales

In last ten years, growth in rooibos consumption in Southern Africa has been strong, spurred by a growing awareness of health in a burgeoning middle class. In 2016 domestic rooibos sales reached 8 000 tons.

6. TRANSFORMATION IN THE INDUSTRY

6.1. Corporate Social Responsibility (CSR)

The Rooibos Council members are involved in different CSR initiatives and engage particularly with the upliftment of the communities surrounding their business operations. Community-based projects in the rooibos industry aim to create employment opportunities and improve income, improve access to education, and so-doing contribute towards the sustainability of the industry.

6.2. Small scale farmers: Wuppertal and Heiveld Cooperatives

In Wuppertal, there are various Cooperatives. The Cooperative members work together and support each other in capacity development, skills training and marketing under their own brand. A group of small-scale rooibos farmers of Suid-Bokkeveld in the Northern Cape formed the Heiveld Cooperative. The driving force behind their Cooperative was to build an organisation that promotes social justice and community development. The Cooperative received organic and Fairtrade certification and export rooibos globally (Fairtrade South Africa, 2011).

6.3. Sustainability

Sustainable agriculture refers to farming methods that protect natural resources such as water, soil and air. Our planet bears the brunt of poor agricultural practices conducted in previous years which resulted in depleted soils, polluted water resources and increased greenhouse gas emissions. Sustainable farming practices actively aim to increase farm productivity and profitability, which will enhance water and soil supply and improve food security and rural livelihoods (Feenstra, 2015).

Rooibos grows naturally in an ecological sensitive area of the Cape Folded Mountains, where Fynbos predominantly occurs. Adopting a biodiversity conservation approach to rooibos farming in these areas will support the protection of natural resources and result in lower farming input costs (Ferreira, 2015).

Sustainable agricultural practices will also assist in weathering the impact of climate change as experienced throughout sub-Saharan Africa (IOA, 2012).

Sustainability can only be achieved if producers link and combine the environmental, social and economic aspects of their production in an integrated system. Such a system will address the following aspects: Employment conditions, social equity, financial management, environmental conservation and food safety (Pretorius, Harley & Ryser, 2011).

6.4. Standards and Certification

The international standards applicable to the rooibos industry include Organic certification, Sustainability certification, and Social certification. Relevant standards include:

<i>Standard</i>	<i>Type</i>	<i>More information</i>
<i>UTZ Certified</i>	Sustainability; Social	https://www.utz.org/
<i>Sustainable Agriculture Network</i>	Sustainability; Social	http://san.ag/web/
<i>Fairtrade International</i>	Sustainability; Social	http://www.fairtrade.net/
<i>SA-GAP</i>	Quality Management	http://www.sagap.co.za/index.php
<i>HACCP</i>	Food Safety	
<i>Rainforest Alliance</i>	Sustainability; Social	http://www.rainforest-alliance.org/
<i>British Retail Consortium</i>	Social	http://www.brc.org.uk/brc_home.asp

In broad terms, the purpose of these standards is to ensure that the producer adheres to the promises made to the consumer. The standards also focus on aspects such as product quality, sustainability, environmentally friendly production processes, fair treatment of workers, fair price to producers, and product safety (Pretorius, Harley & Ryser, 2011).

7. HEALTH BENEFITS OF ROOIBOS

7.1. Polyphenols

Polyphenols are organic chemicals with great antioxidant capabilities (Organic Facts, 2016). The polyphenols in rooibos have anti-inflammatory, antiviral and anti-mutagenic properties. These phenolic compounds protect the body from free radicals which can cause cancer and heart disease. Several research studies have proved the health benefits of rooibos in fighting heart disease and premature ageing, and in reducing the occurrence of cancer and diabetes (Joubert et al: 2008).

7.2. Hypertension and cardiovascular health

Rooibos assists in combatting hypertension by reducing blood pressure in general, and acts as a bronchodilator in relieving respiratory problems. The tea supports the formation of HDL cholesterol (good cholesterol) and reduces the ability of LDL cholesterol (bad cholesterol) to form a layer on the inside of blood vessels (Joubert, Gelderblom & Louw: 2008).

7.3. Healthy skin and bones

The antioxidants in rooibos slow down the ageing process and seek out free radicals that damage the skin by making it vulnerable to disease and degeneration (Organic Facts, 2016). Rooibos is also rich in manganese and calcium, which stimulate enzymes needed to build and repair bones (Organic Facts, 2016).

7.4. Diabetes

The antioxidant aspalathin in rooibos helps to balance blood sugar levels and improves the absorption of glucose. For diabetics, this health property is beneficial in preventing blood sugar spikes and lows (Joubert et al: 2008). The polyphenol aspalathin, that is uniquely present *only* in rooibos, helps to balance blood sugar levels and improve the absorption of glucose by the cells of the body, by breaking down insulin resistance in cells. For diabetics, this health attribute is beneficial in preventing blood sugar highs and lows.

8. CURRENT RESEARCH PROJECTS

Much research has been done, both in South Africa and internationally, on the various health benefits of rooibos. Below we outline some of the research that is currently being done.

Dr Muller and Prof Joubert of the South African Medical Research Council (SAMRC) are doing research on the *Effects of Rooibos polyphenols on Microbiota Regulation, Bioavailability and Bioactivity*. The study is looking at a group of vervet monkeys of which a part of the group is normal and healthy, a part of the group is prediabetic (glucose intolerant), and the other part of the group is diabetic. The monkeys are then given rooibos extracts of different strengths to see whether this will influence gut bacteria to such an extent that it may be beneficial in addressing metabolic disorders such as diabetes.

Dr Sylvia Riedel-van Heerden of the SAMRC is doing research on *chronic inflammation as a target for prevention and/or alleviation of metabolic diseases*. Chronic inflammation is a common underlying condition for and may even cause the development of diseases, such as type 2 diabetes and cancer. The fact that such diseases may be prevented or alleviated through better lifestyle choices are often overlooked. There is evidence that low-grade inflammation may start in the gastrointestinal tract due to unhealthy diets. This research explores the possibility that rooibos can reduce the low-grade inflammation in the gastrointestinal tract and through this eliminate one of the factors that may cause non-communicable diseases, such as type 2 diabetes and cancer.

Prof Amanda Swart from the Department of Biochemistry, University of Stellenbosch, is doing research on the *metabolism of antioxidant compounds and antihypertensive effects of Rooibos*. The aim of the study is to establish the activity of unfermented and fermented rooibos in cells and to use this to investigate the hypertensive effects of rooibos in people with high blood pressure. The process for this research includes the isolation of different flavonoids present in rooibos and establishing how the different flavonoids react within cells and what the effect of this on high blood pressure may be.

Prof Maryna van Deventer and Dr Trevor Koekemoer from the Nelson Mandela Metropolitan University (NMMU) is studying the *therapeutic potential of Rooibos in the treatment of chronic wounds*. Wound healing is a complex, yet natural process involving several stages. Certain health conditions can disrupt the progression through these different stages of the healing process resulting in delayed wound healing, also known as chronic wounds. Chronic wounds are often associated with diseases such as diabetes, obesity and ageing.

Considering the prominent role of inflammation in chronic wounds, rooibos extracts are being evaluated for their potential to influence the inflammatory response.

Dr Lynne Chepulis from Waiariki Institute of Technology in New Zealand is doing research to assess whether *antioxidants in Rooibos Tea extract can be used to improve blood glucose control in people with prediabetes*. Obesity and diabetes are highly prevalent in Western Countries. However, a state of ‘prediabetes’ also exists where blood glucose levels are higher than normal but not yet high enough to be classified as diabetes. Several research studies have shown that antioxidants (from foods such as green tea, berries and various herb extracts) can improve blood sugar control, both in healthy subjects and in people with diabetes. This research focus on exploring how rooibos extract can be used as an antioxidant to improve blood glucose control in people with prediabetes and prevent the development of diabetes.

Boris Gorelik is a Russian writer and researcher based in Moscow and Johannesburg. He is busy with research for a Rooibos Encyclopaedia, which traces the process of substituting Asian tea with rooibos as a preferred tea. The Encyclopaedia will address, amongst other things, the origins of rooibos tea; the establishment of the rooibos industry; cultivation of rooibos; rooibos as a national beverage and its international success; and the health benefits of rooibos.

Dr Jonny Peter from the University of Cape Town’s Lung Institute (Allergology and Clinical Immunology) is doing research on the *immunomodulatory effects of Rooibos tea on IgE-mediated allergic responses*. The purpose of the research is to investigate the ability of rooibos to abrogate allergic responses on two common aeroallergens. The study will be conducted on patients with known sensitisation to these aeroallergens and to evaluate the adjunctive rooibos tea intake for the treatment of different atopic diseases.

Prof Wentzel Gelderblom from the Institute of Biomedical and Microbial Biotechnology at the Cape Peninsula University of Technology is doing research on the *interactions between herbal tea polyphenols and fatty acids in the regulation of inflammatory responses during skin carcinogenesis*. The aim of the research study is to determine the effect of rooibos and omega-3 fatty acids (DHA) on oxidative and inflammatory mechanisms in UVB exposed keratinocytes; and to develop biomarkers of chemoprevention in relation to inflammatory responses utilising gene expression and proteomics analyses.

Prof Simeon Davies from the Cape Peninsula University of Technology is doing research on the use of *Rooibos as a prophylaxis for hypoxia (high altitude) exposure*. This study focuses on the efficacy of the anti-oxidant capacity of rooibos to prevent and or attenuate the deleterious effects experienced when exposed to hypoxic environmental conditions during exercise.

Dr Dee Blackhurst from the University of Cape Town is doing research on the *comparison of total antioxidant capacity of fermented and unfermented Rooibos teas*. This project aims to compare the concentrations of total phenolic compounds and total flavonoids in a set of locally-available fermented and unfermented rooibos teas. Also, the total antioxidant capacity will be determined by a set of different assays, as well a functional assay to determine the ability of the different teas to protect low-density lipoproteins against copper-induced lipid oxidation.

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