



ROOIBOS INDUSTRY FACT SHEET 2019

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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.

SARC dedicates the majority of its funding and activities to research on the benefits of rooibos. The research results are also used to promote rooibos products both locally and internationally and grow the industry. Furthermore, SARC has a strong focus on communication with and protection of the rooibos consumer.

1.2. The Members of SARC

SARC currently has ten 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.

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

1.3. The Secretariat of SARC

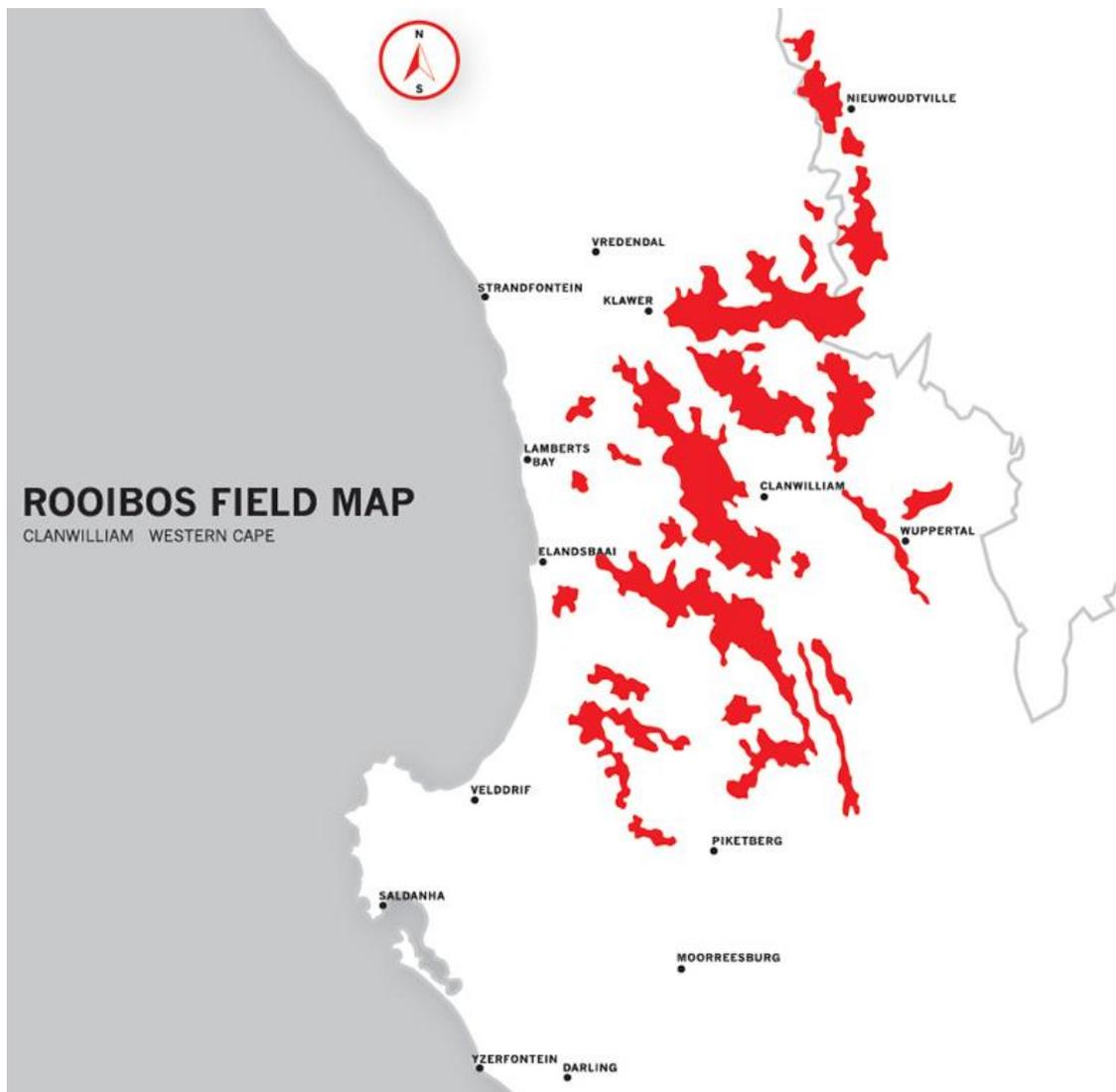
Kruger Swart & Associates (<http://www.skaa.co.za>) acts as the Secretariat for The South African Rooibos Council. Any enquiries can be directed to Marthane Swart as per details below.

 ROOIBOS COUNCIL	Marthane Swart
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www.sarooibos.co.za	Tel: +27 (0) 21 885 2347
info@sarooibos.co.za	Cell: +27 (0) 84 511 8937
PO Box 6304 • Uniedal • Stellenbosch • 7612	• Skype: Marthane.swart

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 varies 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 just more than 14 000 tons in 2018.
- The increasing global demand for rooibos pushed exports up to between 7 000 and 8 000 tons per annum in 2018.
- The total rooibos sales in 2018 was equal to just more than 6 billion cups of tea – that is close to one cup per human on earth.

- Rooibos is exported to more than 60 countries across the globe. Germany, the Netherlands, Japan, the United Kingdom and the United States of America are the biggest importers of rooibos.

2.3. Where and how Rooibos grows

Aspalathus Linearis – Rooibos – is endemic to a small area in the Cederberg mountain range of the Western Cape province, rooibos requires specific climatic and geographical conditions to grow. Rooibos only grows naturally in higher altitudes (200 to 1 000 meters above sea level) and has adapted to survive in the unique geographical conditions of the Cederberg mountain range. The region is predominantly arid, experiences hot, dry summers and cooler, wet winters. It boasts many sandstone rock formations (some of which are up to 500 million years old), and vegetation is a mixture of mountain fynbos and succulent Karoo plants.

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. Roots of the plant extend two meters or more below the surface to reach water, which helps the plant survive in the region’s generally arid conditions. The plant requires winter rainfall and its active growth starts in early summer and increases towards midsummer. Humidity, water availability, air temperature, slope angle, the coarse sandy soil and latitude all play important roles in the plant’s lifecycle. Shrub-like in nature, rooibos has a central, smooth main stem that subdivides into a number of strong offshoots near the surface soil. These offshoots are connected to delicate branches that bear soft, needle-like leaves up to ten millimetres in length. Left to grow in its natural environment, rooibos will reach a height of up to 1.5 meters. Cultivated plants may be anywhere from 0.5 to 1.5 meters, depending on their age and the climate and soil conditions. The rooibos plant’s narrow leaves have very limited surface areas, which minimizes the loss of moisture on hot days. 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 1 800 kg/ha.

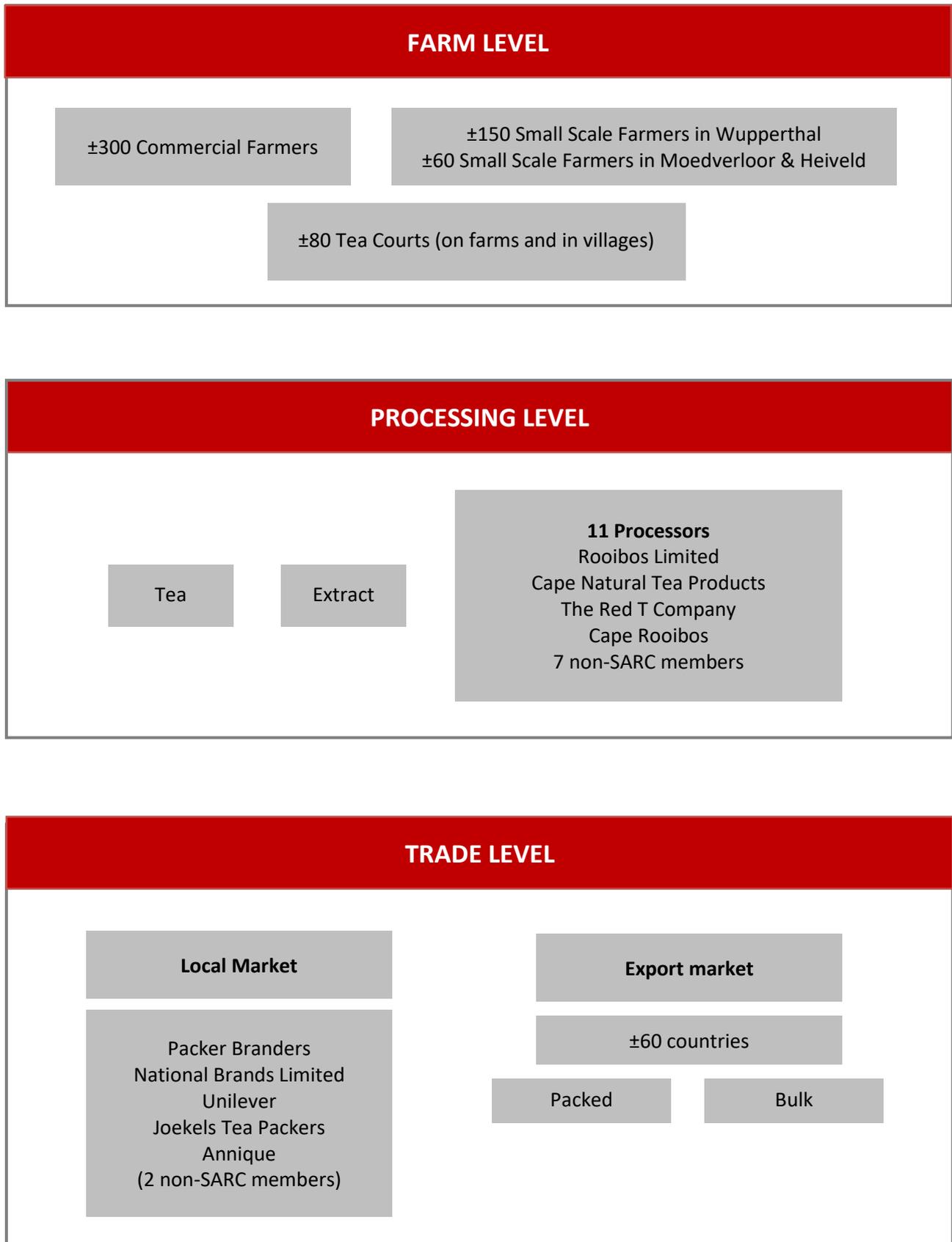
2.5. Different types of Rooibos

“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 are 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.

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. 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.

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. Thereafter the plants are harvested annually by cutting off 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

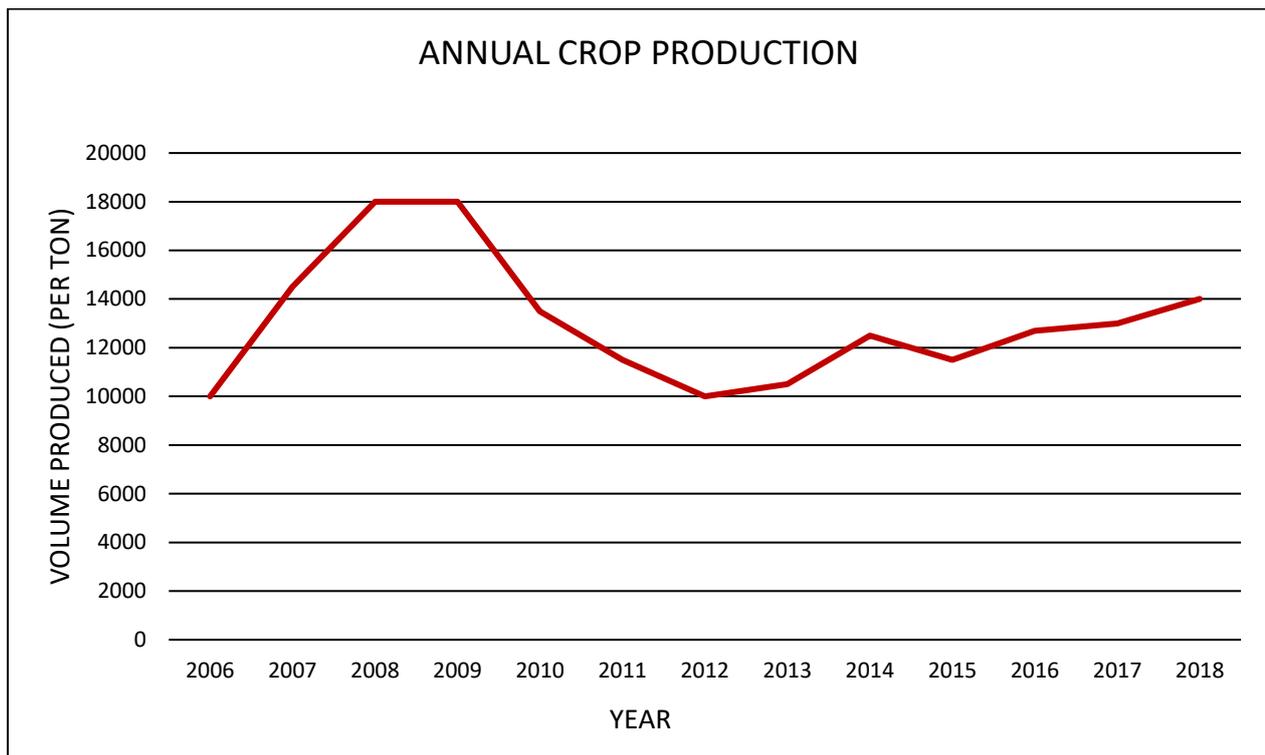
The product is graded according to length, colour, flavour and aroma.



CONSUMER

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

3.2. Crop



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 rooibos terms can only be used when the product was grown in the geographic area of the Cederberg region of South Africa.

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. Geographic indicator (GI)

The Rooibos industry united around a common cause for the protection of rooibos, and finally, in 2014, rooibos received status as the first geographical indication (GI) for a South African product other than wine and spirits.

Rooibos meets all of the requirements for GI protection, as defined in the World Trade Organization (WTO) Agreement on the Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement): it is only grown in one part of the world and the properties of the plant are a direct result of the unique geographical conditions in which it grows. Furthermore, the knowledge of the rooibos plant and the cultivation expertise is unique to South Africa, as it only occurs here. The plant is truly part of the South African identity, and therefore SARC and the rooibos industry championed for the registration of rooibos as a GI for the following reasons:

1. GI registration helps protect the name from misuse and imitation, while allowing all those involved in the rooibos industry in the region – from farmers to exporters – to use it without fear of litigation in foreign markets
2. As the GI links an area to a product, it would be a powerful marketing tool for the region and could be used to promote other activities such as tourism
3. Rooibos is produced in a fragile ecosystem, and GI registration will help protect the unique biodiversity of the region

4.1.3. 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 and at processors.

Act	Purpose
Basic Conditions of Employment Act 75 of 1997	Regulates working hours, leave, termination of employment and all other matters related to employment.
Sectoral Determination 13: Farm Worker Sector	Specifically regulates minimum wages, working hours and general conditions of employment for farm workers.
Compensation for Occupational Injury and Diseases Act 130 of 1993	Provides compensation for injuries, diseases and death that occurred during an employee's normal course of employment.
Employment Equity Act 55 of 1998	Provides a framework for employers to implement affirmative action and protect workers and job seekers from unfair discrimination.
Labour Relations Act 66 of 1995	Aims to promote peace and democracy in the workplace, as well as economic development and social justice.
Occupational Health and Safety Act 85 of 1993	Aims to provide healthy and safe working conditions for all employees.
Skills Development Act 97 of 1998	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.

Skills Development Levies Act, 1999	Regulates the skills development levies that employers must pay towards the National Skills Fund.
Unemployment Insurance Act, 2001	Aims to protect workers who find themselves unemployed and lays out the benefits available to them in such an event.
Unemployment Insurance Contributions Act 4 of 2002	Provides for matters connected to the collection and obligations of the Unemployment Insurance Fund (UIF).

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 2018

<i>Rank</i>	<i>Country</i>	<i>Volume (Kgs)</i>	<i>Percentage of total export</i>
1	Japan	2129015	29,42%
2	Germany	2023524	27,97%
3	Netherlands	813538	11,24%
4	UK	669391	9,25%
5	USA	381207	5,27%
6	Sri Lanka	184319	2,55%
7	Zimbabwe	144000	1,99%
8	Zambia	129545	1,79%
9	Russia	96209	1,33%
10	Poland	90000	1,24%

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 and the total export volume for 2018 has been 7 235 tons. There was a boom in 2007, especially in Germany, mostly due to Rooibos being very affordable at this stage and the health properties were widely acclaimed.

5.3. Domestic Rooibos Sales

In last ten years, growth in rooibos consumption in Southern Africa has been strong, encouraged by a growing awareness of how the health properties of rooibos contribute towards healthy living, as well as the wide variety of products now containing rooibos. Yet, during 2017 and 2018, as a result of high prices, domestic sales declined. In 2018 the domestic rooibos sales reached nearly 7 000 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: Wupperthal and Heiveld Cooperatives

The Wupperthal Original Rooibos Cooperative was formed in 2009 by a group of small-scale farmers who have grown rooibos for generations and attained Fairtrade certification early in 2010. The members of the Cooperative strive to work closely together and support each other in capacity development, skills training and marketing their produce under their own brand.

The Heiveld Cooperative consists out of small-scale rooibos farmers from the Suid Bokkeveld community and became Fairtrade certified in 2003 and gained better access to the international market. The driving force behind their Cooperative was to build an organisation that promotes social justice and community development. The Heiveld Cooperative represents the first successful example of a black owned exporting business in the Cedarberg region.

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.

Rooibos grows naturally in an ecological sensitive area of the Cederberg Mountains, where Fynbos predominantly occurs. Adopting a biodiversity conservation approach to rooibos farming in these areas supports the protection of natural resources and result in lower farming input costs. Sustainable agricultural practices also assist in weathering the impact of climate change as experienced throughout sub-Saharan Africa.

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 addresses aspects including employment conditions, social equity, financial management, environmental conservation and food safety.

6.4. Standards and Certification

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

Standard	Type	More information
UTZ Certified	Sustainability; Social	https://utz.org/
Sustainable Agriculture Network	Sustainability; Social	https://www.sustainableagriculture.eco/
Fairtrade International	Sustainability; Social	https://www.fairtrade.net/
SA-GAP	Quality Management	http://www.sagap.co.za/index.php
HACCP	Food Safety	https://food.unl.edu/seven-principles-haccp
Rainforest Alliance	Sustainability; Social	https://www.rainforest-alliance.org/
Japan Agricultural Standards (JAS)	Organic certification	https://icea.bio/jas-organic-certification-japan/?lang=en

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.

7. HEALTH BENEFITS OF ROOIBOS

7.1. Polyphenols

Polyphenols are antioxidants which have been linked through in vivo and epidemiological studies with positive health outcomes and are needed by humans to achieve a full lifespan by reducing the risk of a range of chronic and metabolic diseases. Polyphenols scavenge free radicals which are linked to aging; may temper disglycaemia (abnormal blood sugar levels), which is a major metabolic illness or syndrome which is interrelated with oxidative stress. In short, oxidative stress is an imbalance between the production of free radicals and the ability of the body to counteract the harmful effects of these free radicals through the work of the antioxidants. The polyphenols in rooibos also have anti-inflammatory and anti-mutagenic properties.

7.2. Hypertension and cardiovascular health

Rooibos has a positive effect on adults at risk of heart disease, as Rooibos might lower the total blood cholesterol levels, with a significant reduction in “bad” LDL cholesterol levels which can inhibit the forming of a layer on the inside of blood vessels.

7.3. Stress

Rooibos can also keep stress and anxiety at bay as the tea polyphenols aspalathin and nothofagin interfere with the production of the stress hormone, cortisol. These two compounds were tested in a lab on adrenal cells that were stimulated to mimic a stress response similar to that which occurs in humans which showed that Rooibos lowered the production of the stress hormone.

7.4. Healthy skin

Rooibos gained interest for use in the treatment of skin disease and ailments. The polyphenol found in rooibos is aspalathin which possesses antioxidant properties associated with the prevention of cancer development. The chemopreventive properties (meaning to delay or inhibit carcinogenesis) of rooibos have been demonstrated in various organs as well as in the skin. Within the biological context of ageing, rooibos was found to protect some of the fat cells named preadipocytes, from cell death which can result in the occurrence of wrinkles.

7.5. Diabetes

The polyphenol in rooibos, aspalathin, helps to balance blood sugar levels and improves the absorption of glucose by the cells of the body, as well as to break down insulin resistance in cells preventing blood sugar highs and lows. Rooibos also has the potential to delay and even prevent the onset and progression of type 2 diabetes – one of the most prevalent diseases of modern times.

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.

Sybrand Smith of the University of Stellenbosch completed a research project as part of his doctoral studies on *The effect of green rooibos extract on mitochondria obtained from rat hearts in a pre-diabetic model: an evaluation of the function and mechanisms involved*. The study focused on Cardiovascular diseases (CVD) as a leading cause of death globally, with a rising prevalence of individual risk factors such as obesity and insulin resistance; and how rooibos which is rich in bioactive phenolic compounds, including aspalathin, can delay the onset of CVD by reducing the onset of oxidative stress and cell death.

Dr Ahmed Mohammed of the Cape Peninsula University of Technology is doing research on *In vitro investigation of the bioactivity of Rooibos chemical constituents on some autoimmune skin diseases*. The underlying cause of autoimmune diseases, such as vitiligo, is not fully known and without effective cure. The study investigates the possibility of how rooibos can have an effect on melanin inhibition/activation and the subsequent potential in controlling skin conditions.

Dr Hanél Sadie-Van Gijsen of the University of Stellenbosch is doing research on *Testing the efficacy of a green Rooibos extract to counteract the effects of obesogenic feeding on adiposity and rat adipose-derived stem cells*. Currently the epidemic of obesity and its associated co-morbidities, such as diabetes, hypertension and cardiovascular disease, needs urgent attention as the available anti-obesity drug therapies often exhibit low efficacy and severe adverse side effects. The research study focuses on aspalathin, in rooibos which has shown promise as an anti-diabetic compound in animal models, and may suppress fat cell development and function.

Dr Gerald Maarman of the University of Stellenbosch is doing research on the *Investigation of the underlying mechanisms of Rooibos-induced cardio-protection*. Heart disease (HD) is a leading cause of death globally and in South Africa. Most HD drugs are administered long-term, can have serious side effects and are expensive; therefore, there is a need for affordable, natural therapies against HD. The research investigates how rooibos can protect the heart against disease by focusing on the underlying mechanisms of rooibos-induced cardio-protection.

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.

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.

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