


CONTRIBUTING TO CONSERVATION AND SUSTAINABLE USE IN THE ROOIBOS INDUSTRY

A PRACTICAL GUIDE

September, 2025

forestry, fisheries & the environment
Department: Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

german cooperation
DEUTSCHE ZUSAMMENARBEIT

BIO INNOVATION AFRICA

SANBI
Biodiversity for Life
South African National Biodiversity Institute

ROOIBOS COUNCIL

This document is part of a series of knowledge products produced by the BioInnovation Africa (BIA) project in South Africa. Other BIA knowledge products and biotrade resources can be found on the joint website of BIA, ABioSA and the ABS Capacity Development Initiative.

Kruger Swart Associates (KSA) and NaturaLibra under the Union for Ethical Biotrade, were commissioned to develop and publish this knowledge product in collaboration with BIA's South African partner the Department for Forestry, Fisheries and the Environment (DFFE)

This knowledge product is endorsed by the DFFE. The BIA project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Although every effort has been made to provide complete and accurate information, KSA and GIZ make no representations or warranties, express or implied, as to its accuracy at the time of use.

Adrie El Mohamadi
Component Manager – South Africa BioInnovation Africa (BIA)
GIZ Center for Cooperation with the Private Sector (CCPS)
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

adrie.elmohamadi@giz.de
bioinnovationafrica@giz.de

www.giz.de
www.abs-biotrade.info

Illustration and design:
MediaCompany – Agentur für Kommunikation GmbH, Bonn (Germany)

Photo Credits:
Front cover: South African Rooibos Council (1), Jonathon Rees (2), Amanda Nyingwa (3+4);
Page 5: Amanda Nyingwa

CONTENTS

1. INTRODUCTION

The rooibos industry and the different role players involved in the industry has a deep understanding of the importance of environmental and biodiversity protection for the continued sustainability of the industry. Guarding against biodiversity loss is not only relevant in industries such as rooibos but is becoming one of the most pressing global challenges. The degradation of ecosystems and the loss of species at a high rate, presents a risk to what nature provides: clean water, fertile soil, pollination, and climate regulation. Biodiversity loss does not only have implications for environmental health and sustainability, but also for livelihoods, economies, and cultures that depend on biodiversity.

Based on this, there is an increased international focus on care for the environment and specifically on protecting nature and using natural resources in a way that is careful and fair. On international level this has led to the adoption of agreements such as the Convention on Biological Diversity (CBD) and the Nagoya Protocol. On local level these global commitments are mirrored in South Africa's national legislation and policy frameworks, which aim to balance economic development with environmental stewardship.

For the role players involved in the rooibos industry, this means an increase in rules and requirements. These include laws and regulations from the government and the requirement from markets to comply with sustainable certification programs like Rainforest Alliance (RA), the Union for Ethical BioTrade (UEBT), and Fairtrade. These standards reflect a broader shift towards accountability and sustainability in the global marketplace, and they offer the rooibos industry a clear pathway to align with international best practice.

2. THE INTERNATIONAL CONTEXT

Many countries around the world are working together to protect nature and use natural resources in a fair and sustainable way. This global effort is supported by international agreements that guide the protection of biodiversity, care for the environment and the fair and equitable sharing of benefits when plants, animals, and other natural resources are used.

Some of the **most important agreements** in this context are:

THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

This is a global agreement that encourages countries to protect nature, use it wisely, and make sure the benefits from nature are shared fairly.

THE NAGOYA PROTOCOL

This is part of the CBD and explains how people and companies can access natural resources (like plants used for tea or medicine) and how to fairly share the benefits with the communities where these resources come from.

THE KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK

This is the latest global plan setting out how to achieve the aims included under the CBD. It sets clear goals to stop the loss of biodiversity and restore nature by 2030.

THE 2030 TARGETS

These are part of the Global Biodiversity Framework. They include targets like protecting 30% of land and sea areas, using natural resources in a sustainable way, and respecting the rights and knowledge of local communities.

South Africa is a signatory to all of these agreements. This means that the South African government has undertaken to follow the guidance included in these agreements when developing national laws and policies for protection of the environment and for ensuring the responsible use of South African natural resources. These international agreements also help shape what is expected from industries like rooibos, both in local practices and in international markets.

3. THE NATIONAL LANDSCAPE

Because South Africa has signed international agreements undertaking to protect nature and share benefits fairly, the content and aims of these agreements are included in national laws and policies.

Several important laws have been developed to support conservation, sustainable use, and fair benefit sharing:

§

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA)

This is the main law guiding environmental protection in South Africa. It includes the basic principles for responsible environmental management and helps to make sure development happens in a way that does not harm nature.

§

THE NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (NEMBA)

This law focuses on biodiversity. It helps protect wild species, manage how plants and animals are used, and ensures that benefits from biodiversity are shared fairly with the people and communities who help take care of it.

§

OTHER SUPPORTING LAWS

There are also other laws and regulations on both national and provincial levels that help manage access to natural resources and protect traditional knowledge.

This guide takes its legal instruction from the National Environmental Management: Biodiversity Act (NEMBA), which provides the legislative foundation for conservation, sustainable use, and fair benefit sharing of indigenous biological resources in South Africa.

In addition to the laws, the South African government has also developed **several important strategies and planning tools:**

THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (NBSAP), 2015–2025

This is South Africa's plan to meet the goals of the Convention on Biological Diversity. It includes actions to protect ecosystems, use biodiversity sustainably, and share benefits fairly.

THE NATIONAL BIODIVERSITY FRAMEWORK (NBF)

This framework helps coordinate action across government and sectors. It shows how different parts of society can work together to support biodiversity and meet the goals of the NBSAP.

THE NATIONAL BIODIVERSITY ASSESSMENT (NBA), 2018

This is a scientific report that looks at the state of South Africa's biodiversity. It shows where nature is under pressure and where conservation efforts need to be focussed.

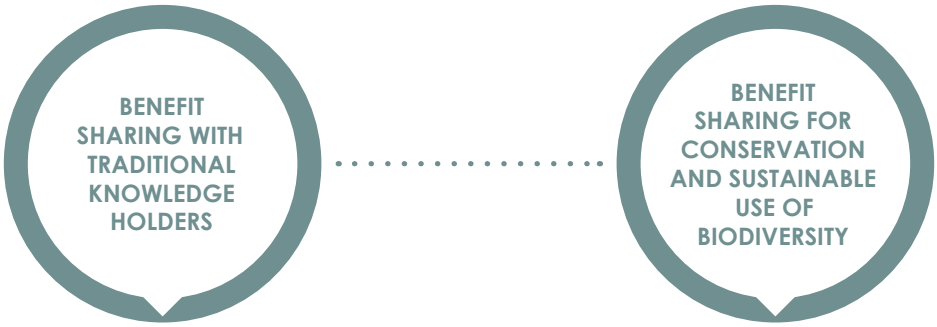
THE NATIONAL BIODIVERSITY ECONOMY STRATEGY (NBES), 2016

This strategy supports the use of biodiversity in ways that create jobs and grow the economy, especially in rural areas, while making sure nature is protected for the future.

These laws and strategies create the structure for the management of biodiversity in South Africa. They also help ensure that industries like rooibos are part of a wider effort to protect nature and share its benefits fairly.

4. WHAT IS BENEFIT SHARING FOR CONSERVATION AND SUSTAINABLE USE (CSU)?

The international agreements and South African laws and regulations as summarised above requires of industries working with indigenous biological resources such as rooibos to **share benefits in two ways**:



This includes local communities and Indigenous Peoples who hold Traditional Knowledge (TK) about plants and how they are used. When companies or researchers use this knowledge to develop products, they must share the benefits fairly with those communities.

This means using natural resources, like rooibos, in a way that supports the health of the environment and helps conserve the species and ecosystems from which they come.

Over the past years there has been a strong focus on benefit sharing with traditional knowledge holders in the South African context and while this must continue, there is now also a growing focus on the environment itself. This means that rooibos industry role players must consider how the industry can contribute to protecting the natural landscapes and ecosystems that support and enable the industry.

Benefit sharing for conservation and sustainable use connects both people and nature. It is part of a wider movement – locally and globally – that aims to make sure that biodiversity is used in a manner that does not only bring fair benefits to people but also supports the long-term health of the natural environment. For the rooibos industry, this is a chance to show leadership and care, and to build a future where both communities and ecosystems can thrive.

5. THE PURPOSE OF THIS GUIDE

The rooibos industry depends directly on nature. The plants, landscapes, and ecosystems where rooibos grows must be protected and cared for to make sure the industry can survive and grow for generations to come. This means that taking care of the environment and protecting biodiversity is not just good for nature – it is essential for the future of rooibos.

The rooibos industry is already a leader when it comes to responding to: 1) changes in the international and national landscape related to conservation and 2) changing market requirements. From sustainable farming to fair benefit sharing, the industry has shown that it is willing to lead by example and this guide shows how these efforts can be maintained and improved.

The aim of this guide

The aim of this guide is to share information on measures for conservation and sustainable use (CSU) already in place in the industry, but also on other instruments and processes that industry role players can use or participate in for further development and improvement. It explains what the industry as a whole can do and also shares ideas for how individual farmers and role players can participate. It is meant to support everyone in the industry to stay aligned with new laws, global goals, and market expectations – and to do so in a proactive and positive way.

This guide works hand-in-hand with other tools and documents, including:

THE BENEFIT SHARING FOR CONSERVATION AND SUSTAINABLE USE GUIDE

This is a comprehensive guide on how benefit sharing for conservation and sustainable use can be approached. The guide can be accessed here:

BS4CSU-Guideline-Document.Web_.pdf

THE REGENERATIVE ROOIBOS GUIDE

This document gives practical guidance on how the rooibos industry can engage with regenerative agricultural practises for benefit of both the environment and the industry.

Together, these tools are here to support rooibos farmers, processors, and all industry members in making sure that rooibos continues to grow in a way that supports both people and the planet.

6. THE ROOIBOS INDUSTRY IN THIS CONTEXT

6.1. The Cape Floristic Region

Rooibos is uniquely tied to the Cape Floristic Region (CFR), a globally recognised biodiversity hotspot located in the southwestern corner of South Africa. Despite being the smallest of the world's six floral kingdoms, the CFR is one of the richest in terms of plant diversity, with over 9,000 plant species, of which nearly 70% are found nowhere else on Earth. This extraordinary concentration of endemic species has earned the region recognition as a UNESCO World Heritage Site and one of the world's 35 biodiversity hotspots – areas that are both biologically rich and under threat. The CFR is home to the distinctive fynbos biome, a fire-adapted shrubland ecosystem that includes rooibos (Aspalathus linearis) among its many endemic species.

Rooibos grows exclusively in this region, particularly in the Cederberg, Bokkeveld and Sandveld areas, where the specific combination of climate, soil, and elevation cannot be replicated elsewhere. Its narrow geographic range makes the species – and the industry built around it – highly dependent on the health of the surrounding ecosystem. As such, conserving the Cape Floristic Region is not only a matter of global ecological importance but also essential to the sustainability and long-term viability of the rooibos industry. This deep ecological connection underscores why efforts toward conservation, sustainable use, and benefit sharing must be rooted in a clear understanding of the landscape that gives rooibos its unique character and global value.

6.2. Historical and cultural significance

Rooibos has a rich and culturally rooted history in South Africa's Cederberg region, where it has grown wild for centuries in the unique fynbos biome. Indigenous Khoikhoi and San communities were the first to discover and use the plant, harvesting it from the wild and using it for its medicinal properties. This knowledge of rooibos laid the foundation for its use and later cultivation.

When Dutch settlers arrived in the 17th century, they began using rooibos as a local substitute for expensive imported black tea. Its affordability, availability, and reputed health benefits made it a popular beverage among both indigenous communities and settler families. For centuries, rooibos remained a wild-harvested product, but growing demand led to efforts to domesticate the plant. These efforts culminated in the early 20th century with the work of Dr. Pieter Le Fras Nortier, who partnered with local farmers and harvesters to develop successful cultivation techniques. His work, supported by the traditional knowledge of people familiar with the wild plant, was pivotal in transforming rooibos into a commercially viable crop.

As the rooibos industry grew, it became increasingly tied to the unique ecology of the Cederberg and surrounding regions. Rooibos thrives only in specific climate and soil conditions found in this part of the Western Cape, making the industry highly dependent on local environmental health. This connection to place has shaped the rooibos sector's awareness of sustainability and the need to protect its natural resource base.

6.3. Overview of the industry and involved role players

There are four main groups of role players involved in the rooibos industry: **1) farmers, 2) industry organisations, 3) traditional knowledge holders, 4) government departments** and **5) academic institutions**. A short overview of these groups is shared below.

6.3.1. Farmers

Rooibos farmers are responsible for the cultivation of rooibos and a key group able to contribute to conservation and sustainable use through the development and implementation of sustainable practises. While reliable figures are not available, the number of rooibos farmers are estimated to be between 350 and 550 with varying farm sizes from very small (less than 1 ha) to many hundreds of hectares. Reliable figures for total land area under cultivation and production volumes are available, and currently fluctuates between 55 000 and 70 000 ha, and 15 000 and 25 000 tons per annum. 20% of farmers produce 80% of the rooibos.

6.3.2. Industry organisations

There are two main industry organisations in the rooibos industry: **1) the South African Rooibos Council** and **2) the Rooibos Producers Association**. Some of the actions and solutions needed to achieve a significant impact for conservation and sustainable use, are best approached on collective level. These industry organisations could not only drive the development and implementation these collective actions but can also communicate on the results achieved to a wide audience.

The South African Rooibos Council

The South African Rooibos Council (SARC) is an independent and voluntary organization of processors, packers and branders with a vision of responsibly protecting and promoting the rooibos industry both nationally and internationally. The members represent around 83% of the volumes in the industry. The key objectives of the organisation include:

- **Promotion and Growth:** Enhancing the global profile of rooibos through marketing and public relations efforts.
- **Research Support:** Funding and facilitating research on the health benefits and quality attributes of rooibos.
- **Industry Protection:** Responding to challenges and crises affecting the rooibos industry to ensure its sustainability.
- **Information Dissemination:** Providing stakeholders with relevant information to maintain consistent product quality and supply.

The Rooibos Producers' Association

The Rooibos Producers' Association (RPA), known in Afrikaans as the Rooibos Produsente Vereniging, is an organization representing the interests of rooibos farmers in South Africa. Established to unify producers, the RPA plays a crucial role in advocating for sustainable farming practices, ensuring quality standards, and promoting the rooibos industry both domestically and internationally. The RPA's primary mission is to support and advance the rooibos farming community. Its objectives include:

- **Advocacy:** Representing producers in policy discussions and industry negotiations.
- **Quality Assurance:** Establishing and maintaining standards for rooibos cultivation and processing.
- **Research and Development:** Facilitating studies on sustainable farming methods and crop improvement.
- **Market Access:** Assisting members in accessing new markets and navigating export requirements.

6.3.3. Traditional Knowledge Holders

The **Khoikhoi** and **San** peoples are the recognised traditional knowledge holders on rooibos. For centuries, these communities harvested wild rooibos in the Cederberg, for medicinal use, and passing this knowledge down through generations. In 2014, the Department of Forestry, Fisheries and the Environment (DFFE) commissioned an ethnobotanical study on the traditional knowledge associated with rooibos and honeybush, to document the uses and knowledge of rooibos by the Khoikhoi and San peoples.

The role of traditional knowledge holders was formally acknowledged in the 2019 Rooibos Benefit Sharing Agreement (BSA), the first industry-wide agreement of its kind globally. Concluded under South Africa's biodiversity legislation and the Nagoya Protocol, the BSA ensures that a share of the economic benefits from rooibos flows back to the Khoikhoi and San peoples through their representative Councils.

The traditional knowledge holders are represented by the South African San Council and the National Khoi and San Council respectively.

In addition to managing benefit-sharing, the Councils contribute to shaping industry discussions on cultural heritage, equity, and community development. Their participation ensures that conservation and sustainable use efforts remain inclusive, respectful of Indigenous rights, and supportive of socio-economic well-being. Including these Councils as central role players strengthens the industry's legitimacy and demonstrates its commitment to fairness and sustainability.

6.3.4. Government Departments

In the rooibos industry, there are four relevant government departments: **1) The Western Cape Nature Conservation Board (Cape Nature), 2) The Western Cape Department of Agriculture, 3) The Department of Environmental Affairs and Development Planning (DEA&DP-WC)** and **4) Northern Cape Department: Agriculture, Environmental Affairs, Rural Development and Land Reform**.

These departments can play a vital role in benefit sharing for conservation and sustainable use through setting the legal and policy framework for access to and use of indigenous biological resources. They are responsible for coordinating efforts across industries to align biodiversity conservation with economic development. Through permitting, compliance monitoring, and enforcement, they ensure that users of biodiversity comply with the law and regulations and can also contribute through supporting capacity building and research to create an enabling environment.

The Western Cape Nature Conservation Board (Cape Nature)

Cape Nature is not directly involved in the rooibos industry but is responsible for nature conservation in the Western Cape province which is part of the

rooibos production area. As part of their activities, they currently implement the Greater Cederberg Biodiversity Corridor project (GCBC) which is a conservation project aimed at protecting the biodiversity of the Cape Floristic Region, including the Cederberg area where rooibos is grown. Launched to enhance ecological connectivity, it promotes sustainable land use while supporting rural livelihoods, such as those of rooibos farmers.

The Western Cape Department of Agriculture

The Western Cape Department of Agriculture plays an important role in supporting the rooibos industry through a variety of initiatives. It actively promotes research into sustainable farming practices, including trials on diverse cover crops and weed control methods. The Department has historically backed the Rooibos Biodiversity Initiative and contributed to the development of the Sandveld Environmental Management Framework (EMF) and Farm Level Plans, which are now gazetted and formalised into regulation. Through its LandCare programme, the Department provides assistance to rooibos farmers dealing with environmental challenges such as flood-related erosion.

Further support includes financial contributions toward the proposed Wupperthal Rooibos Geographical Indicator (GI), as well as funding for farmers and consultants to attend international events like the 9th World Congress on Conservation Agriculture. Under its SmartAgri climate change initiative, the Department has produced a sector-specific brief for the rooibos industry, helping to guide climate-resilient planning. It also participates in the Agri Sector Forum led by the Department of Environmental Affairs and Development Planning and is expected to align its farmer support programmes with the Sandveld EMF regulations – ensuring that environmental protection and agricultural productivity go hand in hand.

The Department of Environmental Affairs and Development Planning (DEA&DP-WC)

The Western Cape Department of Environmental Affairs and Development Planning plays a regulatory and strategic role in guiding land use and environmental sustainability in the region. As the competent authority under the National Environmental Management Act (NEMA), the Department is responsible for evaluating and approving developments – including agricultural activities – that trigger listed environmental impact assessment (EIA) activities. This ensures that developments are assessed for potential environmental risks before proceeding.

In response to environmental pressures, particularly from the rooibos and potato industries, the DEA&DP-WC has led the development of the Sandveld Environmental Management Framework (EMF). The accompanying implementation Standard has recently been finalised and gazetted. The Department now recognises the Sandveld EMF as a reference in environmental decision-making, in accordance with the Environmental Management Framework Regulations of 2010 (GNR. 547). This move is

expected to improve land use planning and promote environmentally responsible agriculture in the Sandveld region.

Northern Cape Department: Agriculture, Environmental Affairs, Rural Development and Land Reform

This department is the competent authority for approval of developments, including agricultural developments that trigger NEMA EIA listed activities, nature conservation and agriculture in the Northern Cape Province. It was instrumental in the development of the Nieuwoudtville Rooibos Tea processing facility.

6.3.5. Academic institutions

Research institutions play an important role in advancing conservation and sustainable use by generating knowledge that guides responsible decision-making. Their work helps to improve understanding of biodiversity, ecosystems, and the impacts of different farming practices. By developing tools, guidelines, and best practices, they support producers in adopting more sustainable and climate-resilient approaches. Research also strengthens the evidence base for policy, planning, and monitoring, ensuring that conservation efforts are grounded in science.

A number of academic institutions, government departments, and organisations have contributed significantly to research and initiatives supporting biodiversity and sustainable rooibos production:

- **The Western Cape Department of Agriculture (WCDoA)** has focused on sustainable production practices and climate adaptability.
- **The Department of Environmental Affairs and Development Planning (DEA&DP-WC)** has played a key role in environmental planning through the development of the Sandveld Environmental Management Framework.
- **The Agricultural Research Council (ARC)** has contributed to rooibos research in areas such as genetics, pest management, and plant nutrition.
- **The South African National Biodiversity Institute (SANBI)** has undertaken a range of biodiversity-related studies including the Non-Detriment Finding (NDF), the Resource Assessment, and the Monitoring Plan for wild rooibos.

Several academic institutions have also been involved:

- **Stellenbosch University** has explored sustainable production through the lens of traditional knowledge and farmer livelihoods in the Cederberg.
- **The Leslie Hill Institute for Plant Conservation at the University of Cape Town** has investigated the sustainable harvesting of wild rooibos.

NGOs have also contributed through the implementation of research initiatives:

- The **WWF** and **Conservation South Africa's GreenChoice Program** developed a Handbook for Implementing Rooibos Sustainability Standards.
- **The Environmental Monitoring Group (EMG)** produced guidelines for sustainable wild harvesting and co-developed the "Right Rooibos" Code of Conduct.
- **The South African Rooibos Council (SARC)**, through the GCBC project, developed the Rooibos Biodiversity Initiative (RBI) and published Biodiversity Best Practice Guidelines to promote sustainable farming practices across the industry.

6.4. Challenges to conservation

In the context of conservation, it is important to note that today only around 0.001% of the total annual rooibos harvest comes from wild-harvested populations, underscoring both the rarity of wild rooibos in the overall supply and the importance of monitoring these populations carefully.

In 2024 a Non-Detriment Finding (NDF) and Resource Assessment for wild rooibos was implemented in the rooibos industry. These processes give important insights into the status of rooibos and the need for continued conservation efforts.

The 2024 Non-Detriment Finding (NDF) for wild rooibos confirms that, while current harvesting practices appear sustainable, ongoing monitoring and adaptive management are crucial to prevent long-term population declines. The NDF highlights the need for site-specific harvesting guidelines to minimize impacts on regeneration and genetic diversity. It also underscores that fire management strategies must be aligned with ecological cycles to avoid excessive harvesting pressure and ensure natural reseeding occurs. Furthermore, the study identifies climate variability as a growing risk factor, requiring more resilient management approaches to safeguard wild rooibos populations.

The 2024 Resource Assessment and Monitoring Plan for rooibos further emphasize the importance of long-term ecological data collection to track population trends and assess the sustainability of wild rooibos harvesting. The assessment highlights that certain ecotypes are more vulnerable than others, necessitating targeted conservation strategies. It also points out that harvesting methods need refinement to ensure that seed availability and plant recruitment are not negatively impacted. Additionally, the Monitoring Plan identifies habitat degradation due to land-use changes, requiring improved land stewardship programs that integrate conservation with sustainable farming.

7. MEASURES ALREADY PRESENT IN THE INDUSTRY

While this guide outlines what actions could be taken to ensure conservation and sustainable use in the rooibos industry, many initiatives and practises are already present in the industry, providing a strong basis to build on.

7.1. Genetic resource conservation

Conserving the genetic diversity of rooibos is essential for the long-term resilience of the industry, particularly in the face of climate change, pests, and disease. Wild populations contain valuable traits – such as drought tolerance, flavour variation, and pest resistance – that can be used to improve cultivated varieties. Protecting these genetic resources ensures that rooibos remains adaptable and sustainable. While this is not yet a significant focus, the following is present in the industry:

- A Resource Assessment was conducted, identifying and quantifying wild rooibos populations. This forms the basis for protecting the genetic purity of wild populations.
- In-situ conservation of wild populations within their natural habitats on private land as well as in protected areas.

7.2. Sustainable practises

The rooibos industry has a long history of focussing on sustainable practises and responsible cultivation as is evident from the development and publication of the Biodiversity Best Practice Guidelines for Rooibos Production, as well as the Right Rooibos Sustainability Standard. The guidance included in these guides was implemented by participating farms during the Rooibos Biodiversity Initiative (2007–2014) and many of these farms proceeded to be the first Rainforest Alliance and UTZ certified farms.

The aspects addressed in these publications and taken up and implemented by farmers in the rooibos industry include:

Linked to the focus on sustainable and responsible practises, the Handbook for Implementing Rooibos Sustainability Standards was also developed. This is in essence a "how to" book to assist certified producers in complying with certification requirements. More than 100 of these books were distributed to rooibos farmers. At present around 20 farming enterprises, some very large, have third party sustainable certifications and is compliant to internationally acceptable good practises for responsible social and environmental practises.

7.3. Regenerative agriculture

While not widely used in the rooibos industry at present, regenerative agriculture is an evolving holistic approach to farming that prioritizes soil health, ecosystem restoration, and carbon sequestration, going beyond sustainability to actively improve agricultural landscapes. It draws from and overlaps with several related approaches – including organic agriculture, conservation agriculture, agroecology, and eco-agriculture – but has distinct emphasis and goals.

- Some rooibos producers are already implementing practices that can be considered as aligned to regenerative practices, without focussing on its principles in a systematic way.
- A guideline for the implementation of regenerative practices for rooibos production has been developed and is available for the use of producers. It is recommended that producers access this document for more information and detailed guidance.

8. HOW CAN THE ROOIBOS INDUSTRY PARTICIPATE IN CONSERVATION AND SUSTAINABLE USE?

The rooibos industry should not depend on external parties to develop and implement measures for the protection of the environment and the biodiversity that supports rooibos. To ensure a strong and lasting future for the industry, it is important that industry role players such as farmers, processors, buyers, industry organisations and others take responsibility and implement actions to care for the unique ecosystem that rooibos is part of and illustrate that the industry remains responsive to international and national developments and requirements where care for the environment and the protection of biodiversity is concerned.

It may not always be apparent how these contributions can be made, and this guide was created to offer simple, practical ideas and options for getting involved. The guide aims to support all role players in the industry and considers **several platforms, initiatives and actions where rooibos industry role players can participate**, including:

REGIONAL INITIATIVES
that support biodiversity in the areas where rooibos grows

INDUSTRY-WIDE PROCESSES
that strengthen sustainability and benefit sharing

COMMUNITY-BASED PROJECTS
that involve and support local people

SUSTAINABILITY STANDARDS
illustrating responsible environmental and social practises for farmers and processors

INDIVIDUAL ACTIONS
that industry role players can implement

9. REGIONAL INITIATIVES FOR CONSERVATION AND BIODIVERSITY

Since the Cederberg area is such a biodiversity-rich landscape, conservation and biodiversity initiatives are already implemented in the area. These initiatives aim to protect fynbos ecosystems, water catchments, and endemic species while supporting sustainable land use.

9.1. The Greater Cederberg Biodiversity Corridors (GCBC)

The Greater Cederberg Biodiversity Corridors (GCBC) is a pioneering conservation initiative in the Western Cape, designed to integrate biodiversity preservation with sustainable land use across a vast and ecologically diverse landscape. Spanning from the Cederberg Mountains to the coastal lowlands and the Tankwa Karoo, the GCBC encompasses critical habitats within the Cape Floristic Region. It aims to achieve three broad goals: 1) conserve and restore biodiversity by maintaining ecological connectivity across various ecosystems, 2) promote sustainable livelihoods by engaging local communities and landowners in conservation-friendly practices and 3) enhance resilience to climate change through adaptive land management and conservation strategies.

A cornerstone of the GCBC is its collaborative approach which should also be considered for the implementation of actions for conservation and sustainable use:

- **Landowners and Farmers:** Encouraged to adopt conservation stewardship agreements, integrating biodiversity goals with agricultural practices.
- **Local Communities:** Involved in decision-making processes and benefit from eco-tourism and sustainable resource use.
- **Industry Partners:** Engaged in developing best practice guidelines, particularly in sectors like rooibos and potato farming.
- **Government and NGOs:** Provide support through policy, funding, and technical expertise.

9.2. The Sustainable Ceder Initiative

The Sustainable Ceder Initiative is a conservation-driven non-profit organization established in 2023, dedicated to the restoration and long-term survival of the critically endangered Clanwilliam cedar (*Widdringtonia cedarbergensis*) in the Cederberg Mountains. This species, endemic to the region, has suffered significant declines due to historical logging, increased fire frequency, low natural regeneration, seed predation, and the impacts of climate change.

The Sustainable Ceder's mission is to re-establish a self-sustaining population of the Clanwilliam cedar within its natural habitat. The initiative adopts a collaborative and strategic approach, serving as a central link among conservation organizations, local communities, landowners, and other stakeholders in the Cederberg region.

9.3. The Cape Leopard Trust

The Cape Leopard Trust (CLP) is a non-profit organization established in 2004, dedicated to the conservation of leopards in the Western Cape. Operating primarily in the Cederberg Mountains, Boland, Little Karoo, Namaqualand, and Table Mountain National Park, the CLT employs a three-pronged approach: research, conservation, and education. It aims to ensure the long-term survival of leopard populations by:

- Securing their habitats and prey base.
- Promoting coexistence between leopards and humans.
- Fostering community stewardship of biodiversity.

9.4. Regional initiatives: what can industry role players do?

Industry participation	Individual participation
• Attend meetings • Align with or support initiatives • Develop and implement joint media campaigns to raise awareness • Motivating for participation with industry members • Mobilisation of funds for initiatives or including these in strategic objectives and projects	• Enter into Stewardship agreements • Dedicating part of their land for conservation • Support and participate in initiatives • Give access to land for conservation activities aligned to these initiatives

10. INDUSTRY WIDE INSTRUMENTS AND PROCESSES

There is a range of industry-wide instruments and processes that can support benefit sharing for conservation and sustainable use. These industry wide processes are beneficial because: 1) they are designed in alignment with international best practise and are internationally recognised, 2) they enable a coordinated approach on industry level to engage with conservation and sustainable use, 3) they enable industry to engage in a proactive manner with the requirements and expectations of government and conservation partners and 4) they support communication of results received within known and recognised frameworks. While these are collective processes that will increase in success if the majority of the industry participates, a strong partner or organisation to drive and lead the implementation of the processes is also needed.

10.1. Non-Detriment Findings

A Non-Detriment Finding (NDF) is a scientific assessment that is technically only required when there is a threat of over exploitation to the resource and when it is for this reason included in Appendix I or II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The purpose of the NDF is to illustrate that trade and export of the species will not negatively impact the survival of that species in the wild. This is essential for promoting sustainable use and preventing over-exploitation of wild resources.

Even when species are not indicated on CITES as is the case with rooibos, industry can still use an NDF as a proactive measure and implement this instrument to show the status of the species. This proactive measure serves as a safeguard to assure governments and the market that rooibos, including wild populations, is not being harvested beyond its ability to recover and is utilized sustainably.

Although wild harvesting represents only a very small proportion of the industry's annual production (about 0.001%), it is this portion that requires ongoing scientific assessment to ensure sustainability. An NDF for wild populations of rooibos was implemented in 2024 and it was found that the trade and export of rooibos is not detrimental to the species. It is good practise to repeat the NDF from time to time and it is suggested that this process is again implemented in five years' time.

10.2. Resource assessment

A Resource Assessment (RA) is a structured process used to evaluate the status, distribution, abundance, and trends of a plant species in the wild. It is essential for guiding sustainable use, conservation planning, and for informing decisions like the Non-Detriment Findings (NDFs) under CITES or national permitting systems. The RA is also used to inform the Monitoring Plan that will be included in the next section.

Apart from informing the NDF, the RA also established a baseline of the wild rooibos populations, its distribution, abundance and harvest pressure, which allows for future monitoring to track the health of the populations both for different ecotypes and the species as a whole. It also provides guidance for sustainable access and benefit-sharing (ABS) and certification schemes.

A RA for wild populations of rooibos was implemented in 2024 and informed both the development of the NDF and the Monitoring Plan. In addition, it gives a clear and comprehensive overview of the status of rooibos on the wild.

10.3. Monitoring Plan

The purpose of a Monitoring Plan (MP) is to track the health, regeneration, and sustainability of wild-harvested rooibos populations and their habitats over time. In simple terms the MP is based on following the same methodology as the RA, and repeating assessment of established field survey sites over time. When a MP is implemented at agreed and regular intervals, it ensures the following:

- Sustainable harvesting practices
- Effective ecological restoration (where needed)
- Data for permitting, certification, and NDF reporting
- Benefit-sharing compliance under ABS agreements

A MP for wild populations of rooibos was developed in 2024 and in terms of conservation and sustainable use, it is important that this MP is used and implemented to monitor the status of rooibos populations in the wild.

10.4. Biodiversity Management Plan

A Biodiversity Management Plan (BMP) is an instrument included under the South African NEMBA and aims to ensure the long-term conservation and sustainable use of both cultivated and wild populations of rooibos by:

- Maintaining genetic diversity
- Supporting ecosystem health in its natural habitat (Fynbos biome)
- Guiding sustainable wild harvesting
- Enhancing climate resilience and land stewardship in production landscapes

While the NDF, RA and MP implemented and developed for rooibos is focussed on wild populations, the BMP has an added focus on cultivated rooibos which is important since the vast majority of rooibos is cultivated. A BMP is not currently in place for rooibos, but the development of this plan is something that can be considered in future as the industry continues to develop in its efforts for conservation and sustainable use.

10.5. Industry wide access and benefit sharing

In 2019 SARC as a representative of the rooibos industry entered into what was at the time the first industry wide Benefit Sharing Agreement (BSA) in the world. This was not only a landmark achievement for the industry, but continues to have the following clear benefits:

- It ensures that the rooibos industry as a whole meets national and international legal obligations under South Africa's NEMBA and BABS Regulations, and the Nagoya Protocol.
- It significantly reduces administrative burden on industry members, TK holders and the state since individual benefit sharing agreements do not need to be negotiated by parties and facilitated and reviewed by the state.
- It provides clear, standardized rules for all actors in the value chain.
- It creates a shared, predictable financial contribution model (e.g. % of farmgate price) rather than fragmented payments.
- It further reduces administrative burden by streamlining reporting, permitting, and compliance processes.
- It enables economies of scale in engagement, monitoring, and implementation.

While the rooibos industry has very good measure in place for benefit sharing with TK Holders, the industry has not yet engaged with benefit sharing for conservation and sustainable use as noted in Section 4 of this guide. This guide aims to share some ideas on how this can be approached also from an industry level and the industry under the leadership of SARC can consider the following:

- To also apply an industry wide approach to benefit sharing for conservation and sustainable use either through including environmental options in the current agreement or creating a separate process to achieve this.
- A possible option here is to establish a ring-fenced fund where rooibos industry members and supply chain partners can contribute to on a voluntary basis. The resources available in this fund could then be used for:
  - The implementation of the 2024 Monitoring Plan for wild rooibos
  - Periodic revisions of the 2024 Resource Assessment and Non-Detriment Finding for wild rooibos
  - Periodic monitoring of participation and compliance with the Sandveld Environmental Management Framework and associated Norms & Standards
  - Training of students in fields related to rooibos CSU, sustainable production and wild harvesting

These measures could address increasing market requirements for CSU and could specifically position the rooibos industry ahead of the curve in managing and protecting its reputation as a sustainable and fair industry. This will also create a framework where individual farmers can easily participate in efforts for CSU.

10.6. Spatial and land use management plans

Implementing spatial and land use management plans offers several important benefits in the context of conservation and sustainable use, especially for industries like rooibos that depend on healthy ecosystems. Here are some **key benefits**:

PROTECTS CRITICAL HABITATS AND BIODIVERSITY

These plans help identify and safeguard ecologically sensitive areas, such as mountain catchments, wetlands, and wild rooibos populations, reducing the risk of habitat degradation or fragmentation.

GUIDES SUSTAINABLE AGRICULTURAL EXPANSION

By clearly mapping out suitable areas for cultivation, they help prevent overexploitation, erosion, and the conversion of high-biodiversity zones into farmland.

STRENGTHENS CLIMATE RESILIENCE

Spatial planning allows for the protection and restoration of natural buffers – like riparian zones or corridors – which are crucial for climate adaptation and water regulation.

SUPPORTS COMPLIANCE

Well-managed land use supports regulatory compliance (e.g., with environmental authorisations).

The SANBI Western Cape Biodiversity Spatial Plan (WCBSP) Handbook

The SANBI Western Cape Biodiversity Spatial Plan (WCBSP) Handbook provides a spatial framework for environmentally sustainable development and resource use. The aim of the Western Cape Biodiversity Spatial Plan covered in this handbook is to integrate biodiversity and ecological infrastructure as valued assets into all planning spheres and manage these assets in a sustainable way to ensure the persistence of healthy, functioning and representative ecosystems and associated services which benefit all.

The handbook further notes that land use planning and decision-making should strive for sustainable development and therefore requires spatial biodiversity assessments to better inform where and how development takes place. This is achieved through instruments such as the Sandveld EMF and Spatial Development Frameworks (SDFs) and Integrated Development Plans (IDPs) developed and implemented on municipal level.

Spatial Development Frameworks

Spatial Development Frameworks (SDFs) are strategic planning instruments that guide land use and development within municipalities. In the West Coast District of the Western Cape, including its five local municipalities - Saldanha Bay, Bergrivier, Cederberg, Matzikama, and Swartland – have developed SDFs to promote sustainable development, economic growth, and environmental conservation. In the Northern Cape Nieuwoudtville is encompassed within the Hantam Local Municipality SDF.

An SDF serves as an overarching framework aligning local municipal SDFs with national and provincial policies. Its spatial vision emphasizes sustainable development, prioritization of high-growth areas, and the promotion of development along key corridors. Key objectives include:

- Promoting spatial justice and efficiency
- Enhancing spatial resilience and sustainability
- Encouraging economic growth and job creation

- Protecting biodiversity and managing natural resources
- SDF's integrate with the municipal Integrated Development Plans (IDP) to ensure coordinated planning across districts

Integrated Development Plans

Integrated Development Plans (IDPs) are core strategic documents that guide service delivery, infrastructure investment, economic development, and environmental planning over a 5-year period, as mandated by the Municipal Systems Act (No. 32 of 2000). All IDPs align with:

- Provincial Strategic Plans (Western Cape & Northern Cape)
- National Development Plan 2030
- District Development Model (DDM): Coordinated governance across spheres

10.7. Industry wide instruments and processes: what can industry role players do?

Industry participation	Individual participation
• Determine set periods for review of the NDF and implementation of the MP • Mobilise the industry and resources to implement continued NDF and MP processes • Explore the development of a BMP • Engage TK Holders and other relevant parties to see how a model for benefit sharing for the environment can be approached	• Gives access to land for monitoring purposes • Participate in activities related to review of the NDF and the implementation of the MP • Participate in public reviews of IDP's and SDF's • Develop farm level plans (FLP) that are aligned with the Sandveld EMF and participate in this initiative

11. COMMUNITY BASED INITIATIVES

There are a number of different communities in the rooibos industry which include organised agriculture such as farmers associations and regional safety and security organizations, but in this context "communities" refer to the San and Khoikhoi people and particularly members thereof who cultivate rooibos and harvest wild rooibos in the Wupperthal/Cederberg areas of the Western Cape, and the Nieuwoudtville/Suid-Bokkeveld areas of the Northern Cape, including registered cooperatives. The members of these communities and cooperatives are mostly the from the Khoikhoi people.

These communities are also the main actors in the rooibos industry still involved in wild harvesting and the knowledge they hold are of crucial importance in the conservation of the wild rooibos populations.

The different role players involved in the rooibos industry including industry organisations, government bodies and individual farmers have a long history of working and collaboration with and supporting communities and cooperatives. Cooperatives are also the main role players still involved in the wild harvesting of rooibos and were key role players consulted during the NDF, RA and MP processes.

11.1. Local ecological knowledge

Local ecological knowledge (LEK) – the wisdom and practices built over generations by people living in close relationship with their landscapes – plays a critical role in the sustainability of rooibos. In the Cederberg, Suid-Bokkeveld, Wupperthal, Nardouwsberg, and surrounding regions, small-scale farmers and wild-harvesters hold deep insights into the growth, ecology, and management of wild rooibos. This knowledge covers everything from fire cycles and soil conditions to the timing, methods, and intensity of harvesting. Manuals developed with these harvesters have documented practices such as optimal cutting heights, post-fire recovery periods, and site-specific approaches that reduce pressure on vulnerable populations while supporting regeneration.

This community-based knowledge complements scientific research by adding a layer of practical, place-based understanding. It emphasizes that the sustainability of wild rooibos depends not only on ecological principles but also on the observations and practices of those who have harvested and cared for the resource for centuries. Importantly, it demonstrates that regulatory and management systems are most effective when they are aligned with local understanding, since this ensures buy-in and strengthens stewardship.

Embedding LEK in conservation and benefit-sharing processes provides multiple benefits. It supports biodiversity conservation by ensuring harvesting aligns with natural cycles, strengthens rural livelihoods by valuing community expertise, and reinforces cultural connections to the fynbos landscape. By recognising and integrating LEK into monitoring frameworks, harvesting guidelines, and industry-wide initiatives, the rooibos sector can develop a more inclusive and resilient approach to conservation and sustainable use—one that honours both ecological integrity and the lived realities of the communities closely connected to the plant.

11.2. The Khoikhoi Peoples' Rooibos Biocultural Community Protocol

The Khoikhoi Peoples' Rooibos Biocultural Community Protocol (BCP) was developed by the National Khoikhoi and San Council to document the Khoikhoi peoples' journey as traditional knowledge holders to the uses of rooibos and outlines the traditional knowledge, cultural heritage, and governance systems of the Khoikhoi and San peoples in South Africa.

Grounded in customary law and aligned with national and international frameworks such as the Nagoya Protocol and the Convention on Biological Diversity, the BCP guides how communities engage with external parties. It ensures proper procedures for Free, Prior, and Informed Consent (FPIC) and sets terms for benefit-sharing agreements.

At both industry and farm level, it offers guidance on engaging respectfully and lawfully with communities. It also plays a key role in community-based conservation, supporting sustainable wild harvesting and maintaining the ecological and cultural integrity of rooibos landscapes.

The BCP helps protect against exploitation, channels benefits to local communities, and provides legal clarity for all parties. In terms of its relevance for conservation and sustainable use, the BCP speaks to community-based conservation and its role in maintaining the ecological and cultural integrity of wild rooibos populations. The sustainable harvesting practices employed by traditional farmers contribute to biodiversity preservation while ensuring economic resilience.

In additional the BCP also refers to good practises for seed collection and propagation. Inbreeding and genetic drift leading to weaker plants may be the result of the practice of continuously harvesting seeds from the same current rooibos fields for propagation of the next crop. While communities can employ good practises to address this challenge, an industry-wide approach is really required to assess this problem and find solutions. Individual farmers

can contribute by sourcing seeds from different areas regularly, including seeds from wild populations of suitable ecotypes from time to time if possible and mix it into seed mixes for propagation.

11.3. Community based initiatives: what can industry role players do?

Communities	Individuals
• Consider funding options for conservation and sustainability aspects in the rooibos sector during the ABS negotiations • Contribute to conservation and sustainable use of wild rooibos populations • Contribute to monitoring of wild rooibos populations • Establish citizen science monitoring frameworks in support of for example the Monitoring Plan • Explore an industry wide initiative to address potential genetic drift	• Follow the guidelines set out in the "Sustainable Harvesting of Wild Rooibos/ Die Volhoubare Oes van Rooibos Veldtee" (Oettle & Malgas, 2007) • Participate in conservation and monitoring actions • Implementing activities to minimise the possibility of genetic drift

12. SUSTAINABILITY STANDARDS

Sustainability standards and certification has the potential to add significant value to conservation and sustainable use by setting clear standards for responsible production, land use, and resource management. In the rooibos industry, certification schemes help to ensure that farming and harvesting practices: 1) protects biodiversity, 2) conserve soil and water, and 3) avoid harmful chemicals. These standards also promote traceability and transparency across the supply chain, building trust with consumers and international buyers. Importantly, certification can create incentives for producers to invest in long-term environmental stewardship while supporting fair labour practices and benefit sharing with local communities.

12.1. The Sandveld Environmental Monitoring Framework and Standard

The Sandveld encompassing parts of the West Coast District Municipality and most of the rooibos production area – is ecologically sensitive and agriculturally significant, particularly for potato and rooibos farming. The Sandveld Environmental Management Framework (EMF) has already been referred to in this guide, but is in short, a strategic planning tool adopted by the Western Cape Government in June 2019 to guide sustainable land use and environmental management in the Sandveld region. In May 2025 the Sandveld Environmental Management Framework Standard was adopted to give effect to the aims set out in the EMF. The Sandveld EMF and Standard aims to:

- Promote sustainable agricultural development while conserving biodiversity and ecosystem services.
- Provide a spatially explicit framework to inform land-use planning and environmental decision-making.
- Streamline regulatory processes by identifying activities that can be excluded from Environmental Impact Assessment (EIA) requirements under specific conditions.
- Save costs to farmers in relation to EIA.
- Facilitate farm-level management planning to ensure land use aligns with environmental sustainability goals.

12.2. The Union for Ethical Biotrade and Rainforest Alliance Herbs and Spices program

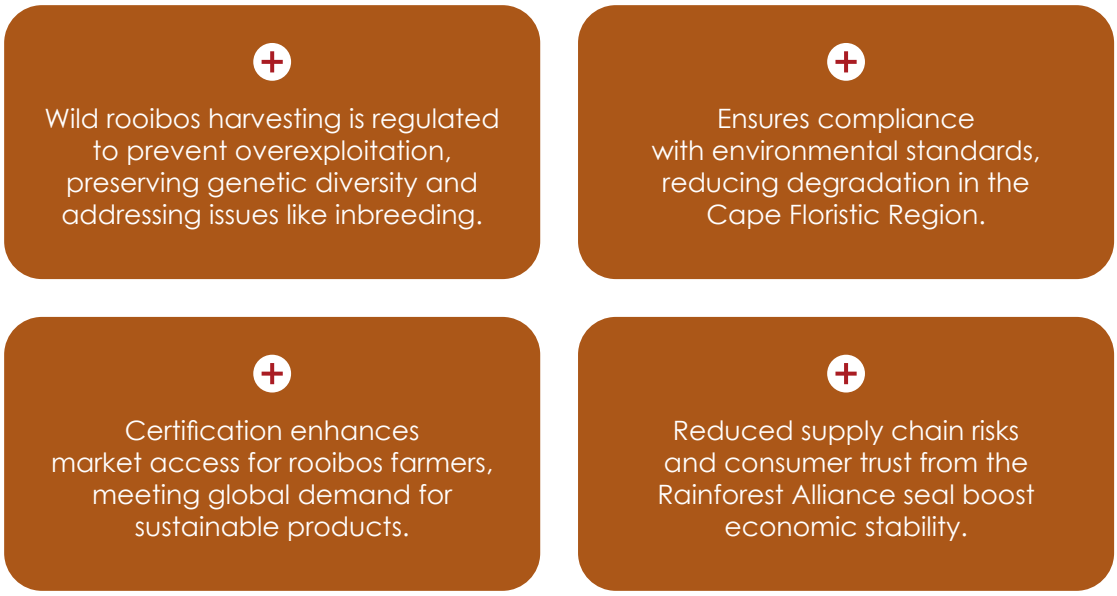
The Union for Ethical Biotrade (UEBT) and the Rainforest Alliance (RA) Herbs and Spices program was launched in 2022 and is a joint certification initiative to promote sustainable and ethical sourcing of herbs, spices, and herbal tea ingredients, including rooibos. Building on the UEBT/UTZ Herbal Tea Program and Rainforest Alliance's Sustainable Agriculture Standard, it applies to cultivated and wild-collected crops like rooibos in South Africa's Cederberg region. The program integrates UEBT's expertise in ethical biodiversity sourcing with Rainforest Alliance's sustainable agriculture framework, allowing certified products to carry the Rainforest Alliance Certified seal.

One of the key instruments included in this certification program is the UEBT Biodiversity Action Plan (BAP) which is a structured framework to help producers to actively contribute to the conservation and sustainable use of biodiversity. In short, the tool: 1) identifies biodiversity risks and opportunities, 2) sets concrete, time-bound actions and 3) supports alignment with international standards. It includes actions such as habitat restoration, sustainable harvesting methods and species monitoring, and is a practical, locally grounded roadmap for integrating biodiversity goals into sourcing practices.

While **participation in the Herbs and Spices program** is voluntary and for many farmers market driven, it **has the following benefits for the wider industry and for those who participate:**

The program promotes practices like avoiding monoculture and maintaining biodiversity corridors, aligning with the Greater Cederberg Biodiversity Corridor (GCBC) and Sandveld Environmental Management Framework (EMF). This protects the fynbos ecosystems, by encouraging rooibos farmers to restore habitats.

Farmers adopt low-impact methods (e.g., no-till or mowing for weed control) to reduce soil erosion in sandy soils and enhance water retention during winter rainfall. This improves long-term crop and soil health.



12.3. Fairtrade International

Fairtrade International is one of the most widely recognised certification systems in the world, designed to promote fair prices, decent working conditions, and sustainable practices in global supply chains. In the rooibos industry, Fairtrade certification has been adopted by several cooperatives and farming enterprises, particularly those with strong community-based structures. The scheme ensures that producers receive a minimum price for their product, along with an additional Fairtrade Premium that can be invested into community and business development projects.

For rooibos, Fairtrade certification addresses both social and environmental sustainability. On the social side, it supports small-scale farmers and workers by ensuring safe working conditions, gender equity, and democratic decision-making on the use of the Fairtrade Premium. This has enabled rooibos cooperatives to fund initiatives such as education, health care, housing improvements, and local infrastructure. On the environmental side, Fairtrade Standards require producers to adopt sustainable agricultural practices, reduce reliance on harmful chemicals, and protect ecosystems that rooibos depends on.

Fairtrade certification also provides a direct link to conscious consumer markets, especially in Europe and North America, where demand for ethically sourced tea and herbal infusions continues to grow. The Fairtrade Mark signals to consumers that rooibos has been produced in a way that respects both people and the environment, strengthening the industry's reputation for responsible production.

Participation in Fairtrade certification has additional benefits for the rooibos industry as a whole. It helps create more resilient producer organisations, builds long-term trade relationships, and supports market diversification. In doing so, it aligns with wider industry goals of fairness, sustainability, and benefit sharing. While certification is voluntary and market-driven, the presence of Fairtrade in rooibos illustrates how social and environmental objectives can be advanced simultaneously, offering a practical model for combining equity with conservation.

12.4. Sustainability Standards: what can industry role players do?

Industry participation	Individual participation
• Participate in standard review processes • Make templates for certification participation available • On processor level directly support farmers with compliance • Stay updated with developments in certification to ensure that the industry remains prepared for coming changes	• Consider certification if this makes sense in terms of market access • Attend trainings (even if not certified) to learn more about sustainable practices • Develop Farm Level Plans under the Sandveld EMF Standard which will ensure compliance with legislation and certification requirements

13. INDIVIDUAL CONTRIBUTIONS

While the regional initiatives, industry-wide processes and sustainability standards discussed in this guide can make a significant contribution to conservation and sustainable use, the role of individual farmers in implementing sustainable and responsible practices remain very important in working towards improvement of conservation and sustainable use in the industry. Sustainability is central to the future of any farming enterprise and defined practices should be pursued by producers generally. Even without specific certification requirements, market forces are likely to put pressure on buyers to ensure procurement supports responsible and sustainable farm practices into the future. Individual contributions made by farmers have the potential to maintain and improve the sustainability of the industry.

13.1. Sustainability practises that farmers can implement

While it will be beneficial if farmers participate in industry wide and regional initiatives which promote conservation and sustainable development in the rooibos region as far as this is possible, they can also adopt good practices which individually seem small, but that will make a big difference collectively. Some of these include:

Practise	Description
Fire and Land Use Management in wild rooibos populations	Implementing fire-return interval assessments to ensure that post-fire regeneration is synchronized with seedling recruitment cycles. Fire plays a vital role in rooibos ecosystems, stimulating germination and controlling invasive species. However, unmanaged or excessively frequent fires can deplete seed banks and disrupt natural cycles.
Responsible Land Expansion	Any expansion of cultivated areas must adhere to environmentally responsible guidelines that minimize the conversion of high-biodiversity landscapes into farmland. Conducting Environmental Impact Assessments (EIAs) or participating in and applying the Sandveld Environmental Management Framework Standard before land clearing ensures that expansion is done in a way that does not compromise sensitive habitats and harm the reputation of the rooibos industry.

Practise	Description
Regenerative agriculture	Implementing evidence-based regenerative practices that restore soil function and ecosystem services. This includes soil conservation techniques, such as intercropping, minimal soil disturbance, and compost applications, to enhance soil organic matter and promote biodiversity.
Invasive Alien Species Control	Proactive measures are required to control woody invasive species (e.g., Acacia saligna, Acacia cyclops, Eucalyptus and Pinus species, and Cuscuta campestris), which can alter soil chemistry, outcompete native vegetation, and reduce rooibos growth. Management strategies include mechanical removal, biological control agents, and promoting native vegetation restoration.
Water management and erosion	Rooibos cultivation is highly dependent on effective water conservation practices, especially in drought-prone areas. Techniques such as contour ploughing, the use of buffer strips, agroforestry integration and regenerating healthy soil help reduce soil erosion and improve water infiltration and retention.
Soil health	Emphasizing natural nutrient cycling rather than synthetic inputs by encouraging compost applications, diverse cover crop rotations including legumes for nitrogen fixation, and microbial inoculants to improve soil structure and plant health.
Agroecological Approaches	Diversifying production systems by integrating indigenous plant species and pollinator-friendly habitats within and around rooibos fields can enhance ecosystem services, such as natural pest control and soil stabilization.

13.2. Measures industry can implement to support farmers

In this guide the importance of industry wide activities and collaboration is discussed. Industry organisation and other parties working on industry level can consider the following to create an enabling environment for farmers to engage with conservation and sustainable use. Industry can support farmers in this endeavour by:

- Advocating for policies that support sustainable farming.
- Marketing rooibos as a sustainable, ethically sourced product, increasing consumer demand for eco-friendly tea.
- Offering long-term purchase agreements providing farmers with financial stability to invest in sustainable practices, and offering stable, premium prices for sustainably grown rooibos.
- Encouraging industry-wide adoption of sustainable and regenerative farming practices.
- Participating in processes for the development of guidelines, research, quality parameters, etc.
- Collaborating with farmers to implement practices that enhance yield efficiency, addressing sub-optimal production cycles noted in industry analyses.

14. THE IMPORTANCE OF RESEARCH

Research plays a critical role in conservation and sustainable use because it provides the scientific foundation for informed decision-making. It helps identify the ecological requirements and population trends of species, assess the impacts of harvesting or land use, and develop effective strategies for restoring degraded ecosystems. In the context of the rooibos industry, research can inform sustainable harvesting levels, improve cultivation practices, and guide efforts to conserve wild populations. Importantly, ongoing research allows the industry to adapt to new challenges, such as climate change or pest outbreaks, while maintaining long-term environmental and economic resilience.

Industry and individual role players can partner with the academic institutions as mentioned in Section 16 and provide access and opportunities to researchers and students.

14.1. Research topics for conservation and sustainability in Rooibos

The following topics related to conservation and sustainability in rooibos can be considered.

Genetic research topics

Topic	Focus
Development of improved rooibos varieties in the face of probable inbreeding and genetic drift	Use genomics and selective breeding to identify and develop rooibos strains with enhanced production, quality and resistance to environmental stresses such as drought, pests and disease.
Genomic mapping for climate adaptation	Sequence the rooibos genome to understand traits related to heat tolerance, water efficiency, and growth cycles under changing climate conditions (some work in this regard has already been done but not published).

Topic	Focus
Preservation of wild rooibos genetic resources	Study and conserve wild rooibos populations to maintain genetic diversity, preventing loss from habitat degradation or over-cultivation.

Agronomic research topics for sustainable rooibos production

Topic	Focus
Soil health and microbial interactions	Investigate soil microbial communities and their role in enhancing rooibos growth, nutrient uptake, and resilience to stress.
Integrated pest and weed management	Research eco-friendly pest control (e.g., biopesticides, companion planting) and weed management strategies to reduce chemical use in rooibos farming (some work has been done in this regard, but it has to continue).
Crop rotation and intercropping systems	Evaluate the impact of rotating or intercropping rooibos with different diverse cover crop including native fynbos species to enhance soil health and biodiversity.
Climate-Smart agronomic practices	Develop adaptive farming techniques (e.g., direct seeding, mulching) as part of a regenerative approach to mitigate environmental stress and erratic rainfall in rooibos cultivation.

Broader sustainability research topics

Topic	Focus
Remote sensing for land and crop monitoring	Develop satellite and drone-based remote sensing technologies to monitor rooibos fields for soil moisture, plant health, and biodiversity impacts.
Blockchain for traceability and certification	Develop blockchain systems to track rooibos from farm to market, ensuring compliance with ethical and sustainable standards.

Topic	Focus
Waste valorisation from rooibos processing	Research methods to convert rooibos waste (e.g., stems, leaves) into value-added products like biofuels, fertilizers, or cosmetics.
Socio-economic impacts of rooibos farming	Study the socio-economic benefits of sustainable rooibos production for rooibos stakeholders and farmers, including job creation and income stability.

14.2. Research: what can industry role players do?

Industry participation	Individual participation
• Create funds dedicated to research appropriate to the organisation within the rooibos industry • Make bursaries, internships and other resources available for students to learn about CSU • Facilitate dialogues with research institutions to see how collaboration on research topics can optimally be approached • Provide organizational support as appropriate	• Farmers can help identify specific research needs and communicate it via organised channels • Landowner and managers can allow access to land and provide appropriate assistance to researchers • Participate in collection of field data on plant health, soil conditions, and biodiversity

15. WHAT ROLE CAN TECHNOLOGY PLAY?

While new technologies and innovation is an emerging field and not yet used by a critical number of industry role players, it has potential to support efforts for conservation and sustainable use by enhancing production, sustainability, market reach, and product development. Below some **trends that may be beneficial to the industry** are shared.

Blockchain for traceability and sustainability

The rooibos industry's focus on sustainability, standards, certification and fair benefit-sharing with indigenous communities aligns with blockchain's ability to document ethical practices. Global consumers increasingly demand transparency about product origins and ethical practices. Blockchain and tamper-proof smart contracts can provide a secure record from farm to cup, enhancing trust. Large processors with more resources are in the best position to pilot blockchain projects with tech partners to enhance export credibility. Certification bodies can use blockchain to verify that rooibos is sustainably harvested and complies with its standards.

The use of mobile applications

Mobile applications is a growing industry that can significantly help farmers, by improving productivity, sustainability, market access, and decision-making support. While the unique challenges of rooibos farming have not been addressed by bespoke mobile applications, there are some, for example YieldsApp, that can offer value for rooibos farmers by enabling precision farming, climate adaptation, and market access, while advisors can leverage its data to provide targeted support and promote sustainability. YieldsApp is designed to adapt to the needs of diverse agricultural practices and can be tailored for rooibos production to maximize productivity and sustainability. By addressing challenges like connectivity and training, YieldsApp can empower farmers and cooperatives, enhancing the rooibos industry's competitiveness and ethical credentials.

Remote sensing and GIS technologies for large-scale monitoring of land-use changes

Remote sensing plays a transformative role in modern agriculture, including for crops like rooibos, by providing real-time, data-driven insights to optimize farming practices, enhance yields, and promote sustainability. It involves collecting data about crops, soil, and environmental conditions from a distance using technologies like satellites, drones, or aircraft equipped with sensors. Sensors (e.g., multispectral or thermal cameras) on satellites or drones capture images to assess plant health through indices like Normalized Difference Vegetation Index, which measures vegetation vigour. Farmers can already use freely available platforms like Fruitlook to track the performance of their rooibos crops and identify problem spots before it can be seen physically.

16. THE VALUE OF PARTNERSHIPS AND COLLABORATION FOR CONSERVATION AND BIODIVERSITY

Existing collaboration among industry, government, certification bodies, and other role players in the rooibos industry has over the years contributed to innovation, sustainability, and market growth by aligning efforts to address challenges related to conservation and sustainable use, and ethical sourcing. The rooibos industry can build on these efforts and achievements on both collective and individual levels through considering the following:

Facilitating **knowledge-sharing platforms** among farmers, researchers, and policymakers to foster innovation and best practices.

Encouraging **cross-sector partnerships** between producers, conservation organizations, and certification bodies to strengthen sustainability efforts.

Developing **industry-wide sustainability reporting frameworks** to track progress on CSU commitments and ensure transparency.

Strengthening **engagement with governmental and non-governmental organizations** to align industry efforts with national and international conservation objectives.

Encourage **participation in multistakeholder dialogues** that integrate perspectives from farmers, industry players, and regulatory agencies to ensure inclusive decision-making processes, such as the Agri Sector Forum led by the Department of Environmental Affairs and Development Planning with participation from the Western Cape Department of Agriculture, the Western Cape Nature Conservation Board (CapeNature) and Agri-Western Cape.

16.1. Potential partners

Government departments

Government departments as included in Section 6.3.3 of this guide can be valuable partners to the rooibos industry based on their conservation mandates and the activities implemented in the rooibos production area. In addition to the departments mentioned in this section, the South African National Biodiversity Institute (SANBI) through its focus on sustainable development by facilitating access to biodiversity data, generating information and knowledge, building capacity, and providing policy advice, should also be considered. SANBI already contributed to the industry through their involvement in the NDF, RA and MP.

Academic institutions

The importance of research along with potential research topics beneficial to conservation and sustainable use, was already captured in Section 14. Academic institutions can play an important role through conducting research and providing a scientific basis to engage from for the improvement of practises for conservation and sustainable use. The following are known institutions that either have conducted research on rooibos or has the interest or potential to support identified research topics.

Institution	Research focus
Agricultural Research Council (ARC)	The ARC is a premier agricultural research organization with a mandate to advance sustainable agriculture and could be included as a research partner.
Stellenbosch University	The Department of Plant and Soil Sciences at Stellenbosch University conducts research relevant to rooibos, including a study on its health benefits and cultivation practices. The university's expertise in viticulture and horticulture extends to rooibos, focusing on sustainable production and climate adaptation. They have also contributed with a rooibos production cost modelling study.
University of Pretoria	Collaborates with CIRAD (a French agricultural research organization) on rooibos-related studies, particularly in innovation and sustainable production. Its focus includes agricultural economics and supply chain management.
Cape Peninsula University of Technology (CPUT)	CPUT's AgriFood Technology Station conducts research on food processing and quality assurance, applicable to rooibos processing and certification standards.

Institution	Research focus
Alicante University (Spain)	Researchers at Alicante University have supported the EU's recognition of rooibos as a protected designation of origin (PDO), strengthening its market position.
Wageningen University & Research (The Netherlands)	WUR is a global leader in agricultural research, specializing in sustainable farming, crop improvement, and value chain development.

International development organisations

Development organisations play a valuable role in supporting conservation and sustainable use initiatives in the rooibos industry. They often bring technical expertise, funding, and project management capacity that can help support areas where solutions and development is needed. Through aligning local efforts with national and international priorities, they help unlock new opportunities for investment and long-term sustainability. Over time a high number of international development organisations have been involved in the rooibos industry including but not limited to:

- **World Wildlife Fund (WWF), Green Choice, Solidaridad** and the **Dutch and Flemish governments** through their support of the Rooibos Sustainability Handbook.
- **The United Nations Development Program** and the **Global Environmental Facility support** for the recent work on the NDF, RA and MP that was implemented in the industry in 2024.
- The German development agency the **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)** through its BioInnovation Africa project which supported the UEBT/RA Herbs and Spices program and other sustainable initiatives in the industry.

Supply chain partners

Supply chain partners, such as buyers and retailers, have growing legal and market requirements in their own countries. This includes due diligence regulations and sustainability reporting, and they are increasingly expected to ensure their supply chains are ethical, transparent, and environmentally responsible. Although not traditionally partners for development, the changing trade environment may cause them to consider participation through for example co-investing in sustainable sourcing initiatives, encouraging certification, help improve traceability, fund research or farmer training, and reward good practices through long-term partnerships and premium pricing.

17. CONCLUSION

The guide details the significant contribution that the rooibos industry has already made to conservation and sustainable use over the years but also identifies a range of opportunities for how these efforts can be improved and carried forward through use of available instruments, innovative thinking and collaboration.

The industry is in a good position to respond to a changing international and national environment where there is increased focus on the conservation of biodiversity and sustainable use of indigenous biological resources such as rooibos.

This guide serves as a roadmap for the rooibos industry to contribute meaningfully and safeguard the ecosystems and genetic diversity that underpin its success and ensure that it maintains and improves it reputation as a sustainable industry responsive to change. As detailed in this guide, everyone has a role to play and the ability to contribute leading to a changed industry perspective where conservation and sustainable use is prioritised and collaborated on.