



Western Cape  
Government

# Legislative Review: Review of the Regulatory and Policy Framework relating to the Harvesting of Wild Honeybush (*Cyclopia* spp.)

*Charl De Villiers & Gillian McGregor*



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EADP 696: THE DEVELOPMENT OF GUIDELINES FOR THE  
SUSTAINABLE HARVESTING OF WILD HONEYBUSH

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and Development Planning

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# REVIEW OF THE REGULATORY AND POLICY FRAMEWORK RELATING TO THE HARVESTING OF WILD HONEYBUSH (*CYCLOPIA* SPP.)

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<i>DATE:</i>	MARCH 2017
<i>AUTHORS:</i>	CHARL DE VILLIERS & GILLIAN MCGREGOR
<i>PROJECT MANAGER:</i>	ALBERT ACKHURST, HEAD OF COMPONENT: BIODIVERSITY MANAGEMENT, DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING
<i>SERVICE PROVIDER:</i>	CAROLINE GELDERBLOM CONSULTING
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ABS	Access and benefit-sharing
BABS	Bioprospecting, access and benefit-sharing
BES	National Biodiversity Economy Strategy (Department of Environmental Affairs, 2015)
BioPANZA	Bio Products Advancement Network South Africa
CARA	Conservation of Agricultural Resources Act 43 of 1983
CBD	Convention on Biodiversity
CITES	Convention on International Trade on Endangered Species
CoP	Community of Practice
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
FPA	Fire Protection Association
MEC	Member of the Executive Council
NBA	National Biodiversity Assessment
NBF	The National Bioprospecting Forum
NBSAP	National Biodiversity Strategy and Action Plan (DEA 2015)
NSBA	National Spatial Biodiversity Assessment 2004
NEM	National Environmental Management
NEMA	National Environmental Management Act 107 of 1998
NEMBA	National Environmental Management Biodiversity Act 10 of 2004
NDP	National Development Plan 2030 (National Planning Commission, 2011)
NVFFA	National Veld and Forest Fire Act 32 of 1998
The Ordinance	Nature and Environmental Conservation Ordinance 19 of 1974 Ordinance'.
TOPS	Threatened or Protected Species
SANBI	South African National Biodiversity Institute
SEMA	Suite of Associated Specific Environmental Management Acts
WC DEADP	Western Cape Department of Environmental Affairs and Development Planning
WC GES	The Western Cape Green Economy Strategy Framework (PGWC, 2013)
WC PSP	The Western Cape Provincial Strategic Plan (PGWC, 2014)
HPAC	Honeybush Project Advisory Committee
SAHTA	South African Honeybush Tea Association
EC DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism

# 1. INTRODUCTION

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This section of the review introduces the regulatory and policy framework that that applies to the picking, selling and export of wild honeybush.<sup>1</sup>

It focuses on:

- The legal dimensions of wild honeybush harvesting and its management within the context of fynbos ecosystem dynamics;
- Policies that promote the sustainable commercial use of wild honeybush and equitable sharing of its proceeds; and
- Institutional arrangements that have been put in place to advance the 'biodiversity economy'.

## IMPORTANT NOTE TO READERS

**This overview does not represent an authoritative guide to the legal responsibilities of stakeholders in the wild honeybush sector. For further information on the permit requirements relating to wild honeybush harvesting, contact the issuing authority in your province. A list of all issuing authorities in South African can be obtained at:**

[http://www.sanbi.org/sites/default/files/documents/documents/permittingcontactsJuly2015\\_0.pdf](http://www.sanbi.org/sites/default/files/documents/documents/permittingcontactsJuly2015_0.pdf)

### 1.1 A snapshot of wild honeybush

The commercial wild harvested honeybush crop consists of 'bergtee' (*C. intermedia*), which makes up 85% of the harvest, while 'vleitee' constitutes about 10% of the wild crop. Smaller quantities of *C. maculata* and *C. plicata* make up the remainder of the crop, while *C. sessiliflora* is locally important for home use (results of this project).

These members of the pea family are endemic to the Fynbos biome (i.e. they occur nowhere else) and are largely confined to acidic, nutrient-poor soils on the coastal plains and mountainous regions of the winter and bimodal rainfall regions of the Eastern and Western Cape provinces.

As with numerous other plants in fynbos, honeybush species are adapted to frequent fires in their natural habitat (Manning, 2007; Joubert *et al.*, 2011). 'Bergtee' *C. intermedia* is the most widely spread, with populations ranging from the Witteberg between Touws River and Laingsburg to the Van Stadens mountains near Port Elizabeth (Joubert *et al.*, 2011).

No honeybush species are currently listed as threatened or in need of protection by the so-called 'TOPS' – threatened or protected species regulations – which were gazetted in terms of section 97 of the National Environmental Management Biodiversity Act 10 of 2004 ('NEMBA') on 23 February 2007. Two honeybush species have, however, been added to the 'Protected Flora' list for the Eastern Cape on 23 September 2011, namely *C. intermedia* and *C. subternata*.

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<sup>1</sup> This review has relied extensively on Prof Jan Glazewski's *Environmental Law in South Africa* (LexisNexis, 2013) but responsibility for the content of the review vests exclusively with its author.

Honeybush species which occur in mountainous areas are well represented in protected areas, set aside historically as water catchment reserves. However, *C. genistoides* is associated with sand fynbos vegetation types that are found on the lowlands between Malmesbury and Albertinia,<sup>2</sup> several of which are listed as threatened ecosystems in terms of section 52 of the National Environmental Management: Biodiversity Act 10 of 2004 ('NEMBA').<sup>3</sup>

The *Red List of South African Plants* notes that subpopulations of *C. genistoides* (Near-Threatened) are declining owing to ongoing over-harvesting and, in lowland areas, habitat loss.<sup>4</sup>

## 2. WILD HONEYBUSH HARVESTING: OUTLINE OF THE LEGAL AND POLICY LANDSCAPE

### 2.1 International Commitments: The Convention on Biological Diversity

The principle objectives of the Convention on Biological Diversity (CBD) relate to the conservation and sustainable use of biological diversity, and the fair and equitable sharing of benefits arising from its utilisation.<sup>5</sup> The Convention was ratified by South Africa in 1995 and translated into domestic legislation through the promulgation of the National Environmental Management: Biodiversity Act 10 of 2004.

Article 6 of the CBD requires all contracting parties to develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity. Contracting parties must also integrate, as far as possible and as appropriate, the conservation and sustainable use of biodiversity into plans, programmes and policies (Glazewski, 2013).

The Conference of the Parties ('CoP') is the governing body of the CBD and advances implementation of the Convention through the decisions it takes at its periodic meetings.

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity

The Nagoya Protocol (Secretariat to the CBD, 2010) was adopted in May 2010 terms of the Convention's ABS provisions.

One of its innovations relates to specific obligations on Parties to the CBD to ensure compliance with domestic laws that regulate access to biodiversity and the sharing of its benefits ('access and benefit-sharing' or 'ABS'). The Protocol also sets out to strengthen the ability of indigenous communities to benefit from the use of their knowledge, innovations and practices (Secretariat to the CBD, 2010).

According to the CBD, the Nagoya Protocol will create greater legal certainty and transparency for both providers and users of genetic resources by:

- Establishing more predictable conditions for access to genetic resources; and

<sup>2</sup> *Pers comm.* Jan Vlok, Regalis Environmental Services, 27-02-2017 [

<sup>3</sup> GN 1002 of 9 December 2011.

<sup>4</sup> Red List of South African Plants (SANBI, <http://redlist.sanbi.org/species.php?species=439-66> (accessed 01-03-2017).

<sup>5</sup> <https://www.cbd.int/intro/default.shtml>

- Helping to ensure benefit-sharing when genetic resources leave the country providing the genetic resources.<sup>6</sup>

By helping to ensure benefit-sharing, the Nagoya Protocol creates incentives to conserve and sustainably use genetic resources, and therefore enhances the contribution of biodiversity to development and human well-being.

#### The Aichi Biodiversity Targets and biodiversity mainstreaming

The CBD's *Strategic Plan for Biodiversity 2011-2020* was adopted by the 10<sup>th</sup> meeting of the CoP in October 2010.

The strategic plan includes 20 headline targets for 2015 or 2020 (the 'Aichi Biodiversity Targets'), organized under five strategic goals:

<b>Strategic Goal A</b>	Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
<b>Strategic Goal B</b>	Reduce the direct pressures on biodiversity and promote sustainable use
<b>Strategic Goal C</b>	Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
<b>Strategic Goal D</b>	Enhance the benefits to all from biodiversity and ecosystem services
<b>Strategic Goal E</b>	Enhance implementation through participatory planning, knowledge management and capacity building. <sup>7</sup>

## 2.2 South African Policy Framework

The commercial harvesting of wild honeybush is subject to a comprehensive body of legislation and policy that aims to ensure that harvesting is ecologically sustainable, promotes economic opportunities in rural areas and that its benefits are equitably shared among especially historically disadvantaged participants in the sector.

This policy framework is defined by the Constitution, the National Environmental Management Act 107 of 1998 ('NEMA'), the Convention on Biological Diversity and the latter's integration into South African law through the National Environmental Management: Biodiversity Act 10 of 2004 ('NEMBA'). These are introduced below.

### 2.2.1 The Constitution

The *Constitution of the Republic of South Africa* Act 108 of 1996 provides the starting point from which to consider the administration of environmental law (Glazewski, 2013): it is the supreme founding law of the democratic, post-apartheid South Africa, fundamentally defines the country's legal and administrative order, and enshrines a Bill of Rights which applies to all law and is binding on all organs of state.<sup>8</sup>

In the context of honeybush harvesting, trade and regulation, the Constitution (among others) stipulates that everyone has the right to:

<sup>6</sup> Convention on Biological Diversity (undated) *About the Nagoya Protocol* <https://www.cbd.int/abs/about/> (accessed 22-02-2017).

<sup>7</sup> <http://www.cbd.int/sp/targets/> (accessed 27 March 2014).

<sup>8</sup> Section 7, Act 108 of 1996.

- Have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent ecological degradation and secure ecologically sustainable use of natural resources while promoting justifiable economic and social development (Section 24 of the Constitution); and
- Administrative action that is lawful, reasonable and procedurally fair and, in the event that such rights have been adversely affected by administrative action, the right to be given written reasons (Section 33 of the Constitution).

The Constitution also lays down principles to promote co-operative governance within the state, and mechanisms for resolving inter-governmental disputes.

Schedule 4 of the Constitution defines 'nature conservation' and 'the environment' as functional areas of concurrent national and provincial legislative competence. This means that the national government as well the provinces may draft and enforce laws relating to environmental management and nature conservation (but not national parks, marine resources and national botanical gardens, which are an exclusive national competence).

### 2.2.2 The National Environmental Management Act 107 of 1998 ('NEMA')

The environmental right in the Constitution is expanded by the National Environmental Management Act 107 of 1998 ('NEMA').

NEMA is a framework statute that applies to all official decision making that may significantly affect the environment.<sup>9</sup> It lays down principles and policies that apply to a suite of associated specific environmental management Acts or 'SEMAs' including the National Environmental Management Biodiversity Act 10 of 2004 ('NEMBA') which regulates bioprospecting or the gathering of biological resources for commercial purposes.

As such, NEMA holds direct relevance to the regulation of honeybush harvesting and official decisions and actions in terms of both the access and benefit-sharing (ABS) provisions of NEMBA and the provincial nature conservation ordinances in the Eastern Cape and Western Cape.

The two provisions of NEMA that would have most immediate bearing on honeybush harvesting in the wild are the National Environmental Management (NEM) Principles and the 'Duty of Care.'

#### The National Environmental Management Principles

The NEM principles serve as statutory guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of NEMA or any statutory provision concerning the protection of the environment.<sup>10</sup> Key NEM principles that would apply to the regulation and management of wild honeybush harvesting include the requirements that:

- Environmental management must place people and their needs at the forefront of its concern;<sup>11</sup>
- The development, use and exploitation of renewable resources and ecosystems of which they are part must not exceed the level beyond which their integrity is jeopardised;<sup>12</sup>

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<sup>9</sup> NEMA s 2(1)

<sup>10</sup> NEMA s 2(1)(c)

<sup>11</sup> NEMA s 2(2)

<sup>12</sup> NEMA s 2(4)(a)(vi)

- The precautionary principle, or applying a risk-averse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions must be adhered to;<sup>13</sup> and
- Specific attention must be paid to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems which are subject to significant human resource usage and development pressure.<sup>14</sup>

Non-compliance with these principles can serve as grounds for an official decision or action to be reviewed and set aside by a court.

#### The Duty of Care

NEMA also prescribes a general 'Duty of Care' towards the environment, which holds that: Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, insofar as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.<sup>15</sup>

The 'Duty of Care' is enforced through directives.<sup>16</sup> The 'Duty of Care' could theoretically come into play if honeybush harvesting were to exceed sustainable ecological thresholds or, for example, tracks to target areas became seriously eroded, contributing to environmental degradation.

#### Integrated environmental management (IEM): The environmental impact assessment regulations<sup>17</sup>

Chapter 5 of NEMA establishes the statutory foundation for integrated environmental management, which hinges on the system of mandatory environmental assessment for listed activities that require environmental authorisation.

Section 23(2) of NEMA lays down the general objectives of IEM, which are to:

- Promote the integration of the principles of environmental management set out in Section 2 of Act (i.e. the national environmental management principles) into the making of all decisions which may have a significant effect on the environment;
- Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in Section 2;
- Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;
- Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;
- Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in Section 2.

<sup>13</sup> NEMA s 2(4)(a)(vii)

<sup>14</sup> NEMA s 2(4)(r)

<sup>15</sup> Section 28(1), NEMA 107 of 1998

<sup>16</sup> Section 28(4), NEMA 107 of 1998

<sup>17</sup> GN R. 982 of 4 December 2014

It is an offence to commence a listed activity without environmental authorisation, and heavy penalties may be incurred.<sup>18</sup>

Whereas the harvesting of honeybush in the wild does not require environmental authorisation, cultivation of this crop may need to be authorised. This would depend, among others, on the extent of vegetation clearance, the status of the affected ecosystem and if any associated aspects of such development were to trigger other listed activities besides vegetation clearance.

Under the Environmental Impact Assessment (EIA) Listing Notices, the following listed activities apply specifically to vegetation clearance:

- The clearance of an area of 300 square meters or more of indigenous vegetation within an endangered or critically endangered ecosystem (Listing Notice 3, Activity 12);
- The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation (Listing Notice 1, Activity 27);
- The clearance of an area of 20 hectares or more of indigenous vegetation (Listing Notice 2, Activity 15).

A basic assessment must be undertaken with respect to activities published in Listing Notices 1 and 3. Activities on Listing Notice 2 must undergo the full scoping and EIA procedure.

A cultivation permit may also be necessary in terms of the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and, potentially, could be water use authorisation under the National Water Act 36 of 1998.

### **Biodiversity mainstreaming**

Biodiversity mainstreaming is the process of embedding biodiversity considerations into policies, strategies and practices of key public and private actors that impact or rely on biodiversity, so that it is conserved and sustainably and equitably used both locally and globally (Huntley, 2014).

It is guided by the outcomes of systematic biodiversity plans which use quantitative targets and thresholds to identify spatial priorities for conservation action. A key objective of biodiversity planning is spatial efficiency, i.e. identifying the smallest possible area of land that is necessary to secure a representative sample of biodiversity pattern and the ecological processes by which it is maintained. This strategy also helps to minimise the risk of biodiversity priority areas being in conflict with other land uses (Cadman *et al.*, 2010).

The overall purpose of biodiversity mainstreaming is to make up shortfalls in meeting national biodiversity targets by encouraging biodiversity-friendly land use practices and development outside the boundaries of formally protected areas. This particularly applies to the intensively developed lowlands of the Cape Floristic Region where the most people live, and economic activities have the greatest impact. Biodiversity in these areas is very poorly protected and in the case of many fynbos ecosystems, severely threatened (Rouget *et al.*, 2014).

Biodiversity mainstreaming is also about securing 'ecological infrastructure' – such as wetlands, harvestable resources, soil or grazing – that underpins human wellbeing and strengthens societal resilience to the adverse effects of climate change.

Biodiversity mainstreaming in the Eastern Cape and Western Cape is coordinated via bioregional programmes led by the South African National Biodiversity Institute (SANBI) and implemented by

<sup>18</sup> NEMA sections 49A and 49B

the respective provincial biodiversity conservation agencies in partnership with other organs of state, private sector and non-governmental organisations.

### 2.2.3 National Environmental Management: Biodiversity Act 10 of 2004

The National Environmental Management: Biodiversity Act 10 of 2004 ('NEMBA') underpins the management and conservation of South Africa's rich biodiversity within the framework of NEMA. NEMBA also provides for the:

- Establishment of the South African National Biodiversity Institute ('SANBI; Chapter 2);
- Biodiversity planning and monitoring (Chapter 3);
- Protection of species and ecosystems that warrant national protection (Chapter 4);
- Fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources (Chapter 6).

#### Biodiversity planning

Biodiversity planning provides the scientific and technical basis for biodiversity mainstreaming. SANBI's Biodiversity Planning Programme uses the principles of systematic biodiversity planning to identify national and regional priority areas for biodiversity conservation.<sup>19</sup>

The Biodiversity Planning Programme has been involved in: the analysis and identification of the national list of threatened terrestrial ecosystems; identification of geographic focus areas for the National Protected Area Expansion Strategy; provided support to provinces developing provincial spatial biodiversity plans; and contributed to the development of the National Spatial Biodiversity Assessment ('NSBA') 2004 and the National Biodiversity Assessment (NBA) 2012.

#### Listed threatened species and species in need of national protection

NEMBA's provisions for the listing of threatened species or species in need of national protection ('TOPS'; section 56) and restriction of activities involving listed TOPS (section 57) are potentially of central relevance to the harvesting of honeybush tea in the wild.

Once a plant species, for example, has been gazetted as a TOPS, it may not be gathered, collected or picked without a permit issued in terms of section 87 of NEMBA. An applicant for a TOPS permit may be required to commission an independent risk assessment or obtain expert evidence to inform the authority decision (section 89).

The first TOPS regulations were published in 2007 (GN R. 152 of 23 February 2007), but did not include reference to *Cyclopia* species. However, the latest draft list of TOPS, published with amendments to the regulations on 31 March 2015,<sup>20</sup> list the following *Cyclopia* species as either threatened or as being in need of national protection:

- Threatened: *Cyclopia plicata* (Endangered)
- Protected: *Cyclopia genistoides*; *Cyclopia intermedia*; *Cyclopia maculata*; *Cyclopia subtemata*

<sup>19</sup> <https://www.sanbi.org/biodiversity-science/science-policyaction/mainstreaming-biodiversity/biodiversity-planning> (accessed 27-02-2017)

<sup>20</sup> National Environmental 256: Biodiversity Act (10/2004): *Threatened or protected species regulations* (GN 255 of 31 March 2015); and *Publication of lists of species that are threatened or protected, activities that are prohibited and exemption from restriction* (GN 256 of 31 March 2017).

### Biodiversity management plans and agreements

Besides requiring that these species may not be collected without a permit, section 43(1)(b) NEMBA also make provision for biodiversity management plans for indigenous species listed in terms of section 56 of the Act for unlisted species that may warrant special attention.

The national Minister of Environmental Affairs or a provincial MEC for Environmental Affairs must identify a suitable person, organisation or organ of state that is willing to implement such a biodiversity management plan (section 43(2) of NEMBA). The Minister may also, in terms of section 44, enter into a biodiversity management agreement regarding the implementation of such a plan, or any aspect of it.

Depending on harvesting pressure and the state of honeybush populations, a biodiversity management plan and agreement would potentially assist with the co-ordinated management and monitoring of the harvesting effort and its contribution to biodiversity conservation beyond the boundaries of formally protected areas.

Until the TOPS regulations have been finalised, and formally gazetted, the only specific protection assigned to *Cyclopia* spp. would be provided by provincial nature conservation ordinances in the Eastern Cape and Western Cape (see section 2.2.6 below).

A key objective of NEMBA is to regulate the commercial harvesting of wild species such as honeybush through the Act's provisions relating to bioprospecting, access and benefit-sharing (BABS).<sup>21</sup>

#### **2.2.4 NEMBA: Operationalising South Africa's commitments under the Convention on Biological Diversity**

NEMBA translates the international Convention on Biological Diversity<sup>22</sup> into law in South Africa. Under the Convention, governments undertake to conserve and sustainably use biodiversity. They are required to develop national biodiversity strategies and action plans, and to integrate these into broader national plans for environment and development.

A fundamental objective of the Convention is to promote activities which ensure that everyone benefits from ecosystem goods and services in an equitable way, including the benefits arising from the exploitation of indigenous biological resources – such as commercially-utilised wild honeybush species.<sup>23</sup>

##### *The National Biodiversity Strategy and Action Plan and National Biodiversity Framework*

The South African National Biodiversity Strategy and Action Plan ('NBSAP') (DEA, 2015) observes that conservation of biodiversity in a network of protected areas is not enough to safeguard biodiversity resources.

It is therefore essential that the conservation and sustainable use of biodiversity be 'mainstreamed' throughout the economy, which includes wildflower harvesting. To this end, the NBSAP promotes integrated programmes to support sustainable use of threatened species to relieve pressure on

<sup>21</sup> Chapter 6, NEMBA 10 of 2004

<sup>22</sup> <https://www.cbd.int/convention/text/>

<sup>23</sup> See *How the Convention on Biological Diversity promotes nature and human well-being* <https://www.cbd.int/convention/guide/default.shtml?id=nataction>

harvesting. It also states that the biodiversity economy must be expanded, strengthened and transformed to be more inclusive of the rural poor.

The National Biodiversity Framework<sup>24</sup> was drafted in terms of the NBSAP. It among others promotes the development of the natural products sector which would include produce certification and strengthening natural products enterprises and supply chain management.

#### *Bioprospecting and traditional knowledge*

Biological prospecting or 'bioprospecting' is often associated with the sourcing of wild plant or animal species that contain compounds which can be extracted to develop pharmaceutical and food products.<sup>25</sup> In South Africa, however, NEMBA specifies that bioprospecting also refers to the collection or gathering of wild species for commercial exploitation<sup>26</sup> – which include the commercial harvesting of honeybush species in their natural habitats in the Eastern and Western Cape.

Bioprospecting can be closely related to traditional knowledge or the discoveries by indigenous people of beneficial human uses of indigenous plants. Examples of indigenous plants that have enjoyed varying degrees of commercial success include *Aspalathus linearis* (rooibos tea), *Sceletium tortuosum* ('kanna' or 'kougoed'), and, of course, *Cyclopia genistoides* or honeybush tea (Van Wyk, 2011).

Rooibos and honeybush are well-known natural herbal drinks. Between 95 and 99% of rooibos tea is cultivated in the Cederberg and Sandveld regions of the Western Cape. Co-operatives at Wuppertal and Heiveld near Nieuwoudtville also cultivate and harvest rooibos in the wild. About half of the 12 000 tons of rooibos tea produced annually is exported in bulk. The sector supports about 4 500 jobs. The rooibos industry is valued at an estimated R550-million a year.<sup>27</sup>

Honeybush industry statistic available from the DAFF 2015 report, *A profile of the South African honeybush tea market value chain*, are unreliable. A calculation of the average annual processed tea crop will suffice: if the average annual production figure of 459 tons<sup>28</sup> over the past 7 years, is taken at the 2017 price of R70 per kg of processed tea, the wholesale value of the processed crop is about R31 million a year.

'Kougoed' has sedative properties that were already recognised by the Nama more than 300 years ago and which are being refined for pharmaceutical application (Van Wyk, 2011). *C. tortuosum* has been known for centuries for a variety of traditional uses, and, more recently, as a possible source of anti-anxiety or anti-depressant effects (Harvey *et al.*, 2011).

<sup>24</sup> GN 813 of 3 August 2009.

<sup>25</sup> See for example the definition of 'bioprospecting' provide by the UK's Science Museum <http://www.sciencemuseum.org.uk/broughttolife/techniques/bioprospecting> (accessed 24-02-2017)

<sup>26</sup> Section 1(b) ('Definitions'), NEMBA 10 of 2004

<sup>27</sup> *Mail and Guardian* (20-04-2012) 'A treasure traded as a commodity', <http://mg.co.za/article/2012-04-20-a-treasure-traded-as-commodity>

<sup>28</sup> PPECB data for the period 2010 to 2016, show an average annual export of 390 tons per year of processed tea. If this represents 85% of the average annual crop, then the total crop would be 459 tons. If on average, 80% of the crop is wild harvested, then 367 tons of this comes from the wild. If the loss of moisture in processing is about 55%, then the total annual average of wild harvested honeybush is 816 tons.

### *Access and benefit-sharing relating to traditional biodiversity resources*

Although indigenous people may have first identified the positive, useful qualities of these species, in many cases they have never benefited from the successful commercialisation of the resulting products. Traditional biodiversity resources have also been exploited without the consent of indigenous people, whose knowledge about these resources has not been recognised or protected in terms of intellectual property rights (Sanghera *et al.*, 2016).

One of the main objectives of the 'access and benefit-sharing' ('ABS') provisions of NEMBA is therefore to remedy this imbalance by providing for mechanisms that would allow providers of indigenous biological resources and traditional knowledge to enjoy an equitable share in the financial and other advantages that may accrue from bioprospecting (DEA, 2012).

Biodiversity benefit-sharing is the third defining tenet of the Convention on Biodiversity (the others being the conservation and sustainable use of biodiversity).

#### **2.2.5 NEMBA's provisions relating to the commercial harvesting of wild honeybush**

Chapter 6 of NEMBA establishes framework for the regulation of bioprospecting involving indigenous biological resources, their export, and the fair and equitable sharing by stakeholders of benefits arising from bioprospecting.

In broad, it:

- Elaborates on the definition of biological resources contained in section 1 of the Act;<sup>29</sup>
- Makes it mandatory to obtain a permit in order to engage legally in bioprospecting;<sup>30</sup>
- Requires the disclosure of all relevant information to stakeholders<sup>31</sup> (including landowners and indigenous communities who use or have discovered indigenous biological resources, and may have an interest<sup>32</sup> in a proposed bioprospecting project);
- Provides for the compulsory drafting of material transfer agreements that regulate the provision of, or access to, biological resources;<sup>33</sup> and
- Benefit-sharing agreements that ensure that stakeholders would share in any future benefits arising from bioprospecting.<sup>34</sup>

A bioprospecting permit can only be issued once the national Minister of Environmental Affairs has approved the applicable material transfer and, if applicable, benefit-sharing agreements.<sup>35</sup>

A material transfer agreement refers to an agreement between the applicant and any person or organ of state or community providing access to indigenous biological resources to which the application relates.<sup>36</sup>

Benefit-sharing agreements refer to agreements that provide for sharing of any future benefits that may be derived from bioprospecting between:

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<sup>29</sup> 'Indigenous biological resources' refers indigenous species collected in the wild as well as those that are cultivated (s 80(2)(a), NEMBA 10 of 2004).

<sup>30</sup> s 81(1)(a), NEMBA 10 of 2004.

<sup>31</sup> s 82(2), NEMBA 10 of 2004

<sup>32</sup> s 82(1)(a) and (b)

<sup>33</sup> s 82(2)(b)(i), NEMBA 10 of 2004

<sup>34</sup> s 82(2)(b)(ii), NEMBA 10 of 2004

<sup>35</sup> s 82(2)(c), NEMBA 10 of 2004

<sup>36</sup> Cf s 83, NEMBA 10 of 2004

- The applicant and any person or organ of state or community providing access to indigenous biological resources to which the application relates; and/or
- The applicant and an indigenous community or specific individual whose traditional uses/knowledge/discoveries with respect to indigenous biological resources and to which the application relates have initiated or are to be used in the proposed bioprospecting.<sup>37</sup>

Chapter 7 of NEMBA elaborates on permit procedures which may, among others, require an applicant to commission an independent risk assessment or furnish expert evidence prior to a final decision on the permit application.<sup>38</sup>

Regulations<sup>39</sup> provide detailed conditions in terms of which bioprospecting must be conducted, and prescribe the content of material transfer and benefit-sharing agreements<sup>40</sup> respectively. They also expand on application procedures and detail offences and penalties arising from non-compliance with the Act.

### 2.2.6 Provincial ordinances that regulate honeybush harvesting in the wild

Wild honeybush harvesting is also controlled by the respective provincial biodiversity conservation authorities in the Eastern Cape and Western Cape provinces. The Eastern Cape authorities rely on the Nature and Environmental Conservation Ordinance 19 of 1974 ('the Ordinance') which has subsequently been published as Western Cape Nature Conservation Laws Amendment Act 3 of 2000 in the Western Cape.

**Stakeholders in the wild honeybush sector are therefore obliged to comply with NEMBA's provisions relating bioprospecting, access and benefit-sharing as well as the applicable ordinances in the Eastern Cape and Western Cape.**

Responsibility for the regulation of honeybush harvesting vests with the following provincial authorities:

- In the Eastern Cape, the Department of Economic Development, Environmental Affairs and Tourism; and
- In the Western Cape, CapeNature, representing the Western Cape Nature Conservation board (which reports to the provincial Minister for Local Government, Environmental Affairs and Development Planning).<sup>41</sup>

#### Indigenous unprotected flora and protected flora

'Flora' means endangered flora, protected flora or indigenous unprotected flora and includes the whole or any part of the plant, whether dead or dried.

The Ordinance distinguishes between indigenous unprotected flora and protected flora respectively.

'Indigenous flora' means any species not listed specified in Schedules 3 (Endangered Flora) or 4 (Protected Flora) of the Ordinance. 'Protected Flora' means any plant species specified in Schedule

<sup>37</sup> Cf s 84, NEMBA 10 of 2004

<sup>38</sup> s 89, NEMBA 10 of 2004

<sup>39</sup> 'BABS regulations' (GN R. 138) published on 8 February 2008, and 'BABS amendment regulations' (GN 447) gazetted on 19 May 2015.

<sup>40</sup> Annexures 11 and 12 respectively of the 2015 BABS amendment regulations

<sup>41</sup> CapeNature's requirements regarding applications to pick flora can be downloaded at: <http://www.capenature.co.za/permits/flora-permits/> (accessed 08-02-2017)

4 of the Ordinance Appendix II of the CITES Convention, which regulates trade in endangered species. *Cyclopia* spp. are not listed by CITES.<sup>42</sup>

No *Cyclopia* species are listed as protected flora in the Western Cape. Two honeybush species are, however, listed on Schedule 4 of the Ordinance in the Eastern Cape, namely *C. intermedia* and *C. subternata*.

#### Permit requirements under the Ordinance

Chapter VI of the Ordinance deals with the protection of flora – including honeybush. The numbering of the applicable sections in the original Ordinance and the Western Cape Nature Conservation Laws Amendment Act differ slightly and therefore, in order to prevent unnecessary confusion, are not recorded here.

The permit provisions for unprotected and protected and flora are explained below. In the context of wild honeybush harvesting,

- 'Sellers' refer to landowners on whose property wild honeybush is harvested; and
- 'Growers' refer to landowners who cultivate honeybush.

#### *Permitting authorities*

Table 1: Permitting authorities in the Eastern and Western Cape.

Province	Department	Contact person	Physical address	Postal address
Eastern Cape	Department of Economic Development, Environmental Affairs and Tourism	Gerrie Ferreira Tel: 042 292 0339 e-mail <a href="mailto:Gerrie.Ferreira@cgov.za">Gerrie.Ferreira@cgov.za</a>	Seekoei River Nature Reserve, Swan Road, Aston Bay, 6332	P.O. BOX 1733 Jeffrey's Bay 6330
Western Cape	CapeNature (acting under the authority of the Western Cape Nature Conservation Board)	Danelle Kleinhans, Tel: 021 483 0121 or e-mail: <a href="mailto:dkleinhans@capenature.co.za">dkleinhans@capenature.co.za</a>	PGWC Shared Services Centre, cnr Bosduif & Volstruis Streets, Bridgetown, 7764	Private Bag x29, Gatesville, 7766

Table 2: Regulations for unprotected flora.

In the <u>Eastern Cape</u> , landowners must register as <i>flora sellers</i> if wild honeybush is harvested on their land	A licence issued for a registered flora seller is valid for three years from the date of issue. The licensing authority is the:  Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
In the <u>Eastern Cape</u> , no person may trade with honeybush tea without a <i>flora licence</i>	This provision applies to both sellers and buyers of honeybush: both parties must be licensed as flora sellers in order to conduct trade in the product.
Written permission to harvest honeybush on land owned by another person	No person may pick any protected or indigenous unprotected flora on land of which s/he is not the owner, without the permission of the owner of such land or of any person authorised by such owner to grant such permission.

<sup>42</sup> <https://cites.org/eng/app/appendices.php> (valid from 02-01-2017; accessed 07-02-2017))

<p>(Eastern Cape and Western Cape)</p>	<p>Permission must be in writing and include the:</p> <ul style="list-style-type: none"> <li>• Full names and address of the owner of the land concerned or of the person authorised to grant such permission;</li> <li>• Full names and address of the person to whom permission is granted, and</li> <li>• Number and species of flora, the date or dates on which such flora may be picked and the land in respect of which permission is granted,</li> </ul> <p>The permission must be signed and dated by the owner or the person authorised by him/her.</p> <p>The permission will be invalid if it does not comply with the foregoing provisions.</p>
<p>Donation or sale of honeybush tea</p> <p>(Eastern Cape and Western Cape)</p>	<p>No person shall donate or sell any flora to any other person unless the recipient is furnished with a written document, signed by the donor or seller, reflecting:</p> <ul style="list-style-type: none"> <li>• The full names and address of the donor/seller;</li> <li>• The full names and address of the recipient/purchaser; person;</li> <li>• The number and species of flora donated or sold;</li> <li>• The date on which such flora was donated or sold, and</li> <li>• A statement by the donor/seller that s/ he has donated or sold such flora to such other person.</li> </ul>
<p>Possession of honeybush tea</p> <p>(Eastern Cape and Western Cape)</p>	<p>The recipient/seller of honeybush must retain the latter documentation:</p> <ul style="list-style-type: none"> <li>• For at least two months from the date on which it was so furnished; or</li> <li>• While such person is in possession of the flora to which the documentation relates;</li> <li>• For whichever is the longer period.</li> </ul>
<p>Export of honeybush tea</p> <p>(Eastern Cape and Western Cape)</p>	<p>No flora may be exported from the Eastern Cape or Western Cape without a permit.</p> <p>The exporter must be in possession of the same documents that apply to the:</p> <ul style="list-style-type: none"> <li>• Donation or sale of honeybush tea; and</li> <li>• Possession of honeybush tea.</li> </ul>

**NOTE**

All the provisions relating to the harvesting of unprotected wild honeybush apply in equal measure to the harvesting and export of protected honeybush species.

Table 3: Regulations for protected flora (Eastern Cape only).

Collection of seed of protected honeybush species	Any person authorised in writing by the owner of any land to pick any protected flora on such land for the purpose <u>of gathering and propagating the seed of such flora</u> does need written permission as would be the case when <u>harvesting wild</u> honeybush on land owned by someone else.
Sale of protected honeybush species	Protected honeybush species may not be sold or bought at any place other than on the premises of a registered flora grower or registered flora seller or sell any protected flora without a licence issued under section 65(2) of the Ordinance.

### 3. FYNBOS MANAGEMENT: APPLICABLE LAWS

Veld that supports wild honeybush populations constitutes fynbos that must be periodically burnt – and protected against ecologically undesirable fires – in order to sustain species composition and structure and the ecological processes that maintain different fynbos ecosystems. It is essential to obtain advice from an experienced specialist when developing and implementing a fire management plan in fynbos.

Two laws have direct bearing on managed burns:

- The National Veld and Forest Fire Act 32 of 1998 ('the National Veld and Forest Fire Act');
- The Conservation of Agricultural Resources Act 43 of 1983 ('CARA').

#### 3.1 The National Veld and Forest Fire Act ('NVFFA')

The NVFFA places a duty on land owners to prepare and maintain firebreaks, with specific requirements regarding length, width, erosion and content of flammable material.

Landowners also have a duty to acquire equipment and have available personnel to fight fires<sup>43</sup>, and should be encouraged to become members of the Fire Protection Association (FPA) in their area. Fire Protection Associations are voluntary associations formed by landowners in an area for the purpose of predicting, preventing, managing and extinguishing fires. Membership to an FPA has an additional benefit: if someone sues a landowner in court for damage resulting from a veldfire which the landowner caused, or which started on his land, the landowner is presumed to be negligent, UNLESS he/she is a member of an FPA.

Regulations under the Conservation of Agricultural Resources Act (CARA)<sup>44</sup> apply to the prevention and control of veld fires: unless authority has been granted, no land user shall burn any veld on farm unit, unless permission has been granted at least 30 days prior to burning date. A burning permit must be obtained from the relevant Fire Protection Association.

#### 3.2 Control of invasive alien plants in fynbos ecosystems

One of NEMBA's functions is to combat the spread of invasive species into natural ecosystems and habitats and to require their eradication where harmful to biodiversity.

<sup>43</sup> Chapter 5 of the National Veld and Forest Fire Act (NVFFA) 32 of 1998

<sup>44</sup> Regulation 12 of GN R. 1048 of the Conservation of Agricultural Resources Act (CARA) No. 43 of 1983

Whereas the control management of invasive plants used to resort under regulations gazetted under CARA, these provisions have been superseded by the *Alien and Invasive Species Regulations* ('the regulations') published in terms of section 97(1) of NEMBA.<sup>45</sup>

The regulation list total of 559 alien species as invasive and further 560 species are listed as prohibited and may not be introduced into South Africa.<sup>46</sup> The NEMBA regulations separate invasive alien species into four different categories:

#### Category 1a listed invasive species

Landowners must immediately take steps to remove and destroy these species. No permits will be issued to grow these species.

#### Category 1b listed invasive species

Landowners must remove and destroy these invasive species which require compulsory control as part of an invasive species control programme. These plants are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits to grow will be issued.

#### Category 2 listed invasive species

Landowners require a permit to grow these species inside of a specified area (this applies to existing plantations). Where these species are found outside of the permitted area, they must be considered to be Category 1b species.

#### Category 3 listed invasive species

These species are subject to exemptions under NEMBA, except when found in riparian areas in which case they must be considered to be Category 1b species.

The alien invasive species that fall under each of these four categories are listed in additional regulations.<sup>47</sup>

The 2016 list of invasive alien species can be downloaded from the website 'Invasive Species South Africa: South Africa's Invasive Species Legislation':

<http://invasives.org.za/legislation/what-does-the-law-say>

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<sup>45</sup> GN R. 598 of 01-08-2014

<sup>46</sup> <http://www.sanbi.org/information-resources/infobases/invasive-alien-plant-alert> (accessed 08-02-2017)

<sup>47</sup> GN R. 864 of 29-07-2016

## 4. POLICY AND GUIDELINES RELATING TO BIOPROSPECTING

Besides compulsory permitting in terms of NEMBA and the applicable provincial nature conservation ordinances, stakeholder consultation and the mandatory drafting of benefit-sharing and material transfer agreements, wild honeybush harvesting also falls within the ambit of a broad range of policies that address initiatives such as 'green' economic development, the protection of rural livelihoods and biodiversity conservation on private land.

### 'Green Economy'

The United Nations Environment Programme ('UNEP') defines a green economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP 2010).

Further,

The key aim for a transition to a green economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness. Critical to attaining such an objective is to create the conditions for public and private investments to incorporate broader environmental and social criteria. In addition, the main indicators of economic performance, such as growth in Gross Domestic Product (GDP) need to be adjusted to account for pollution, resource depletion, declining ecosystem services and the distributional consequences of natural capital loss to the poor. (UNEP, 2011, p 16).

In South Africa, the Department of Environmental Affairs ('DEA') launched a Biodiversity Economy Strategy (BES) in October 2015 to increase the biodiversity contribution to a 'green economy' and Gross Domestic Product while conserving the country's ecosystems.

The strategy requires that the South African biodiversity economy will achieve an average annualised GDP growth rate of 10% per annum by 2030, in line with the National Development Plan's Vision 2030.<sup>48</sup>

### 4.1 The National Biodiversity Economy Strategy

The National Biodiversity Economy Strategy (BES) seeks to increase the contribution of biodiversity to Gross Domestic Product while conserving the country's ecosystems.

According to the DEA, the BES provides the opportunity to redistribute South Africa's indigenous biological and genetic resources in an equitable manner, across various income categories and settlement areas of the country. The BES is based on the following principles:

- Conservation of biodiversity and ecological infrastructure;
- Sustainable use of indigenous resources;
- Fair and equitable beneficiation;
- Socio-economic sustainability;
- Incentive driven compliance to regulation;
- Ethical practices;
- Improving quality and standards of products.

The BES will provide a 14-year national coordination, leadership and guidance to the development and growth biodiversity economy.

<sup>48</sup> GN 965, 9 October 2015

This growth would be achieved through:

- Cooperation between the private sector, government and communities;
- Realising opportunities in various market segments;
- Addressing development and growth constraints; and
- Managing both the wildlife and bioprospecting industries in an environmentally sustainable manner.

The Vision of the BES is to optimise the total economic benefits of the wildlife and bioprospecting industries through sustainable use, in line with the vision of the Department of Environmental Affairs. According to the BES, economically challenged participants have access to only 6% to the national bioprospecting market (which includes the harvesting of wild species) which annually contributes an estimated R60 to R70-million to the economy. The BES states that there significant potential for significantly higher involvement of these participants in this market, in all the market segments.

The BES provides the opportunity to develop the rural economy of the country and address environmental and rural development imperatives of government. As such it has direct relevance to expanding and consolidating the socio-economic benefits of wild honeybush harvesting providing that this is ecologically sustainable and conforms with the achievement of national biodiversity conservation priorities.

#### BioPANZA

A Bio Products Advancement Network South Africa (BioPANZA) was established in 2016 to coordinate implementation of the National BES (DEA, undated). The goal of BioPANZA is to develop and improve the bioprospecting industry to create a sustainable, inclusive and commercially viable sector that adds 10 000 new jobs and contributes R1.7 billion to GDP at 10% per annum by 2030.

Meetings of the BioPANZA network will be provisionally chaired by the Directors-General of the Department of Environmental Affairs and the Department of Science and Culture. Its membership reflects a wide variety of institutions, ranging from parastatals (e.g. the South African National Biodiversity Institute and the Agricultural Research Council), national and provincial departments, to universities, traditional healers and representatives of the bioprospecting and biotrade sectors.

The network also aspires to contribute to national transformation of the bioprospecting sector by ensuring participation of previously disadvantaged individuals and indigenous/traditional knowledge holders in the sector value/supply chain.

#### National Bioprospecting Forum

The National Bioprospecting Forum (NBF) was launched at the second Biodiversity Economy Indaba in Durban in May 2015.

The NBF will serve as a platform for formal communication between industry, communities, research institutions (academic and commercial), communities, knowledge holders with the different spheres of government. The objectives of this forum are mainly the implementation of the bioprospecting and biotrade aspects of the BES and the implementation of the Biodiversity Economy Indaba Action Plan.<sup>49</sup>

Factors that informed the launch of the NBF included recognition that:

<sup>49</sup> <https://www.environment.gov.za/event/deptactivity/biodiversityeconomyindaba2015>

- There were national issues pertaining to bioprospecting/biotrade that had to be addressed by the Minister of Environmental Affairs on a continuous basis;
- The establishment of an operational partnership with the national bioprospecting sector was a priority; and
- A platform would be created for industry, relevant organised bodies and government to interact on issues of mutual and common interest resulting from the implementation and regulation of NEMA and its SEMAs (DEA, undated).

Insofar as honeybush harvesting contributes to jobs and rural livelihood security, enhances the agricultural value chain and does not result in unsustainable pressure on indigenous vegetation, it would fit closely with a variety of high-level policies relating to sustainable development and environmental protection that foresee an important role for ABS in realising these policy objectives.

Other policies that would promote sustainable development of the while honeybush harvesting sector include:

- The Western Cape Provincial Strategic Plan (PGWC, 2014);
- The Western Cape Green Economy Strategy Framework (PGWC, 2013); and
- Western Cape Biodiversity Economy Strategy (WCBES; PGWC).

#### 4.2 The Western Cape Provincial Strategic Plan<sup>50</sup>

The Western Cape's *Provincial Strategic Plan 2014-2019* sets out five strategic goals that aim to achieve the objectives of the *National Development Plan 2030*<sup>51</sup> which among others aims to:

- Boost rural adult employment to 40%;
- Increase investment in new agricultural technologies, research and the development of adaptation strategies for the protection of rural livelihoods; and
- Protect and replenish ecosystems.

Strategic Goal 1 of the Western Cape Provincial Strategic Plan hinges on creating opportunities for growth and jobs, while Strategic Goal 4 is aimed at enabling a resilient, sustainable, quality and inclusive living environment.

The Provincial Government of the Western Cape has consequently committed itself to the enhanced management and maintenance of the ecological and agricultural resource-base, which requires specific responses in relation to maintaining ecosystem health and optimising resource-use efficiencies.

The development of policy and guidelines relating to the harvesting of wild honeybush falls squarely within this strategic priority.

This is also in line with the Western Cape Biodiversity Strategy and Action Plan (PGWC, 2017) which, through Strategic Objectives 3, states that equitable access to natural biological resources and a sustainable and inclusive biodiversity-based economy must be promoted. Actions to this effect include the development and implementation of:

- Guidelines for a sustainable honeybush industry; and
- A provincial biodiversity-based economy plan that includes an investment framework in ecological services.

<sup>50</sup> [https://www.westerncape.gov.za/text/2015/October/western\\_cape\\_provincial\\_strategic\\_plan\\_2014-2019.pdf](https://www.westerncape.gov.za/text/2015/October/western_cape_provincial_strategic_plan_2014-2019.pdf)

<sup>51</sup> [https://nationalplanningcommission.files.wordpress.com/2015/02/ndp-2030-our-future-make-it-work\\_0.pdf](https://nationalplanningcommission.files.wordpress.com/2015/02/ndp-2030-our-future-make-it-work_0.pdf)

The WBBSAP has also prioritised biodiversity mainstreaming in partnership with existing industry initiatives such as best practice guidelines for wildflower harvesting, 'Green Choice' and 'Right Rooibos'.

### 4.3 The Western Cape Green Economy Strategy Framework ('Green is Smart')<sup>52</sup>

Published in 2013, the *Western Cape Green Economy Strategy Framework* ('green strategy framework') aims to achieve the "double dividend of optimising green economic opportunities and enhancing (the province's) environmental performance..." (PGWC, 2013, p 5).

It also aspires for the Western Cape to become the lowest carbon province in South Africa and the leading green economic hub of the African continent.

The green strategy framework cautions that the Western Cape is expected to be among the provinces worst hit by climate change, with increasing drought conditions in a region that is already water-stressed.

Agriculture, as the largest employer in the province, faces a particularly challenging future as the viability of crops is threatened by climate change which, with growing human demands, also threatens the province's extraordinary biodiversity. Natural assets or 'ecological infrastructure' are also not properly priced, which puts tourism and agriculture at risk.

In line with the national BES, the Western Cape green strategy framework recognises that there is an opportunity to strengthen and expand the economic base of natural resource harvesting, which is largely located in the informal economy, and to ensure these activities are done at scale while being sustainable.

### 4.4 The Western Cape Biodiversity Economy Strategy

The Western Cape Biodiversity Economy Strategy (WCBES) identifies the development of a natural products economy as a key element of the Draft WCBES.<sup>53</sup>

As with the National BES, the Western Cape BES would entail boosting co-ordination between stakeholders in bioprospecting and nurturing partnerships in support of the sectors' development.

In terms of unlocking the developmental and economic potential honeybush, the WCBES also pinpoints the need to nurture a community for the honeybush sector, and to develop guidelines on sustainable honeybush harvesting.

<sup>52</sup> <https://www.westerncape.gov.za/eadp/wc-sustainable-energy-projects-db/wc-green-smart-green-economy-strategy-framework-2013>

<sup>53</sup> PGWC (2016) *Western Cape Biodiversity Economy Strategy (BES): Towards a sustainable biodiversity economy*. Presentation at the National Biodiversity and Tourism Lab by Albert Ackhurst and Marlene Laros, 30 June 2016.

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