# POLICY BRIEF

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# Benefit Sharing and Environmental Sustainability in Policy and Practice: Commercialisation of the Resurrection Bush (*Myrothamnus flabellifolia*) in Southern Africa

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**Voices for BioJustice**
Working towards the equitable and sustainable use of biodiversity

# INTRODUCTION

*Myrothamnus flabellifolia*, commonly known as the "resurrection bush", is widely distributed across southern Africa, its range including South Africa, Mozambique, Malawi, Tanzania, Zimbabwe, Namibia, Botswana, and Kenya. Throughout the region, it is used traditionally by a variety of ethnic communities; for example, in Namibia and Zimbabwe, Himba and Shona communities use the resurrection bush as a tea to treat cold and flu symptoms. This knowledge has proved of interest to the international health and beverage industries.

***Resurrection bush twigs stored at Opuwo Processing Facility, Namibia.*** *Credit: Michelle Nott*

A unique feature of this plant is its ability to drastically dehydrate its vegetative tissue and exist in this air-dried, dormant state for months or even years. When water is provided to the roots, the plant rehydrates its desiccated tissues and returns to its original state within a matter of hours. Due to this remarkable property, the species is attracting increased interest from those in the cosmetics industry. To this end, a mixture of polyphenols extracted from the plant are currently being investigated by local and international companies for use in skincare products.

This briefing document is based on research conducted on the resurrection bush value chain for the Darwin Initiative-funded project, Voices for BioJustice, in Namibia, Zimbabwe and South Africa.

## KEY POINTS

- **Different regulatory instruments** have been adopted for ABS in Namibia, Zimbabwe and South Africa, **creating confusion** amongst those who wish to commercialise the resurrection bush.
- **Particularly in South Africa, due to the complexity of the ABS regulations and the time-consuming processes** to be followed in order to comply, **industries source ingredients from illegal markets or neighbouring countrie**s where the same resource can be accessed more simply.
- **Only one benefit-sharing agreement has been negotiated** and concluded for one bioprospecting commercialisation activity.
- Besides the direct cash payments for raw material, additional compensation for the use of TK is currently absent in biotrade activities that draw on such knowledge. **Holders of TK associated with the resurrection bush are not being compensated for their knowledge as intended by the Nagoya Protocol.**
- Despite significant efforts to ensure sustainable use of the resurrection bush, few commercialisation approaches adequately consider wider ecosystem approaches to ensure long-term sustainability of the resource. **Conservation efforts associated with the resurrection bush need to be strengthened, implemented, monitored, and maintained.**
- NGOs are largely active in biotrade and bioprospecting commercialisation approaches, whilst informal trade activities take place without any external support. **It is important for governments and local organisations to regulate and monitor informal trade activities** and implement necessary measures to ensure that resource offtake is sustainable, and that equity is achieved.
- NGOs play an important role in supporting harvesters to implement sustainable harvesting practices and **efforts should be made to ensure ongoing support for such organisations.**

# ACCESS TO INDIGENOUS RESOURCES AND TRADITONAL KNOWLEDGE

In the past, indigenous resources and/or associated TK were accessed without the consent and approval of resource custodians or TK holders, resulting in resources being commercialised and used by technologically rich developed countries with few benefits reaching the biologically rich provider countries of the developing world. To address this imbalance the Convention on Biological Diversity (CBD) (1993) and its Nagoya Protocol (2010) set out new and more equitable ways of trading in genetic resources and using TK. Signatories to these agreements are required to draft national legislation which supports the fair and equitable sharing of benefits derived from the utilisation of genetic resources, known as "access and benefit sharing" (ABS).

## ABS VERSUS BIOTRADE IN THREE SOUTHERN AFRICAN COUNTRIES

An important distinction should be made between ABS (which applies to the utilisation of genetic resources, commonly known as "bioprospecting") and "biotrade" (concerning the utilisation of biological resources). While the CBD and Nagoya Protocol regulate the use of genetic resources, provider countries may define and implement national ABS and/or biotrade regulatory frameworks which best support their country's needs. Different interpretations of this can be seen by examining the ABS legal frameworks of Namibia, Zimbabwe, and South Africa, all of which are countries that provide the resurrection bush for commercial use.

The regulation of biotrade and bioprospecting activities differs from one country to the next, posing significant challenges for industries and for equitable benefit sharing. Consequently, those commercialising the resurrection bush typically find alternative means to obtain the species without entering into benefit-sharing agreements and/or compensating TK holders. Under current legislation in Namibia and Zimbabwe, access to the resurrection bush for biotrade requires processes and procedures that are significantly different to those for bioprospecting. In South Africa, however, a blanket approach has been adopted for regulating biotrade and bioprospecting with both entailing similar regulatory requirements.

# COMMERCIALISATION APPROACHES

At least three commercialisation approaches have been identified in the three provider countries:

- informal trade
- biotrade
- bioprospecting

## INFORMAL TRADE

Informal trade involves harvesters selling raw material directly to buyers. Quantities are typically lower than industrial commercialisation. This form of trade provides harvesters with direct cash income.


***Resurrection bush tea.***
*Credit: Michelle Nott*

### Namibia and South Africa

In Opuwo, Namibia, the resurrection bush is sold along the roadside as a perfume pre-mixed with other aromatic plants. Indigenous Himba, who form a large portion of residents in Opuwo, buy these perfume products for use in their traditional practices. In the KwaZulu- Natal Province of South Africa, a company which specialises in the cultivation, harvesting, and primary processing of African medicinal plants buys resurrection bush twigs from an informal market for resale.

| NAMIBIA | ZIMBABWE | SOUTH AFRICA |
|---|---|---|
| Namibia became party to the CBD in 1997 and a signatory to the Nagoya Protocol in 2014. An attractive destination for bioprospecting, Namibia began working on a draft ABS Bill in 1998. After close to two decades, Namibia's ABS legislation was encapsulated in the Access to Biological and Genetic Resources and Associated Traditional Knowledge Act No. 2 of 2017. ABS regulations to give effect to the Act are currently under development. | Zimbabwe became party to the CBD in 1995 and a signatory to the Nagoya Protocol in 2017. The country has two legal instruments which relate to ABS: The Environmental Management Act of 2002 and the Statutory Instrument 61 of 2009 (Access to Genetic Resources and Indigenous Genetic Resource-based Knowledge) Regulations. This legal framework focuses solely on the utilisation of genetic resources as envisioned by the CBD and excludes biotrade activities from its scope. However, these instruments have not been adequately adopted in practice. | South Africa became party to the CBD in 1996 and ratified the Nagoya Protocol in 2014. In 2006, the National Environmental Management: Biodiversity Act, 10 of 2004 came into force, establishing rules for ABS. In 2008, the Bioprospecting, Access and Benefit Sharing (BABS) regulations were promulgated under the Biodiversity Act. The scope of the Biodiversity Act goes beyond that of the CBD and the Nagoya Protocol, and explicitly includes biotrade. |

## BIOTRADE

Once volumes increase and the resource is sold in commercial markets, the trade moves towards more formalised biotrade. This is when large volumes of raw material are sold to commercial entities who undertake a certain degree of value addition. Along this value chain, each actor in the process receives benefits (mainly monetary) until the final product reaches the consumer.

### Zimbabwe

Some companies in Zimbabwe source the plant independently from the wild, whilst others obtain raw material from local communities. Most of these companies are not aware of requirements for benefit sharing and therefore compensation for TK is ignored. Two companies currently sell the resurrection bush, one as a herbal tea and the other for cold and flu symptoms. Both these uses have traditional origins, yet no measures have been adopted to adequately compensate TK holders. One company is currently voluntarily adopting ABS regulatory requirements to provide a roadmap for future natural resource commercialisation activities. Hoping to commercialise the resurrection bush as an herbal tea, they are involved in negotiations with local communities.


***Resurrection bush tea.*** *Credit: Michelle Nott*

### South Africa

In South Africa, a Gauteng-based company is cultivating the resurrection bush purely for ornamental purposes; these products are thus exempt from ABS legislation and regulations. A Western Cape-based company, however, is planning to market the resurrection bush as an herbal tea.

## BIOPROSPECTING

If a commercial entity sources raw material to identify new sources of compounds, genes, or products that could have potential economic value, the approach is characterised as bioprospecting. Under this approach, benefits can originate from conducting research on genetic resources to determine if there is any potential for resource development. Another benefit can derive from the royalties obtained from commercialising and/or patenting a genetic resource that has undergone extensive research and development. The products manufactured from bioprospecting activities are usually developed for specialised, niche markets such as anti-aging cosmetics.

### Zimbabwe

A company in Zimbabwe sources the resurrection bush from a local community and then exports it to the United Kingdom where various extraction methods are tested for different skincare purposes. No ABS agreements have been negotiated for this form of trade, however they will need to be put in place now that Zimbabwe is a signatory to the Nagoya Protocol.

### South Africa

In Gauteng, the same company which cultivates the resurrection bush for ornamental purposes, sells raw material to other companies which formulate active ingredients. These actives are distributed internationally, yet no ABS agreements have been developed.

A partnership to develop a resurrection bush extract has recently developed between a company in the Western Cape, its Zimbabwean supplier (see biotrade, above), and a cosmetics ingredient manufacturer in Spain. ABS agreements are expected to be concluded once Zimbabwe has set up the necessary procedures to ensure compliance.

In KwaZulu-Natal, a company is in a joint venture agreement for the development of an anti- aging extract for use in cosmetic products. Raw material from the resurrection bush is supplied by the Namibian partner, a Trust representing harvesters from registered community-based organisations in north-western Namibia. A formal ABS agreement has been adopted and negotiated with the partner communities. Local communities are paid per kilogram and an additional percentage share from the sale of the final product is equitably distributed among harvester groups.

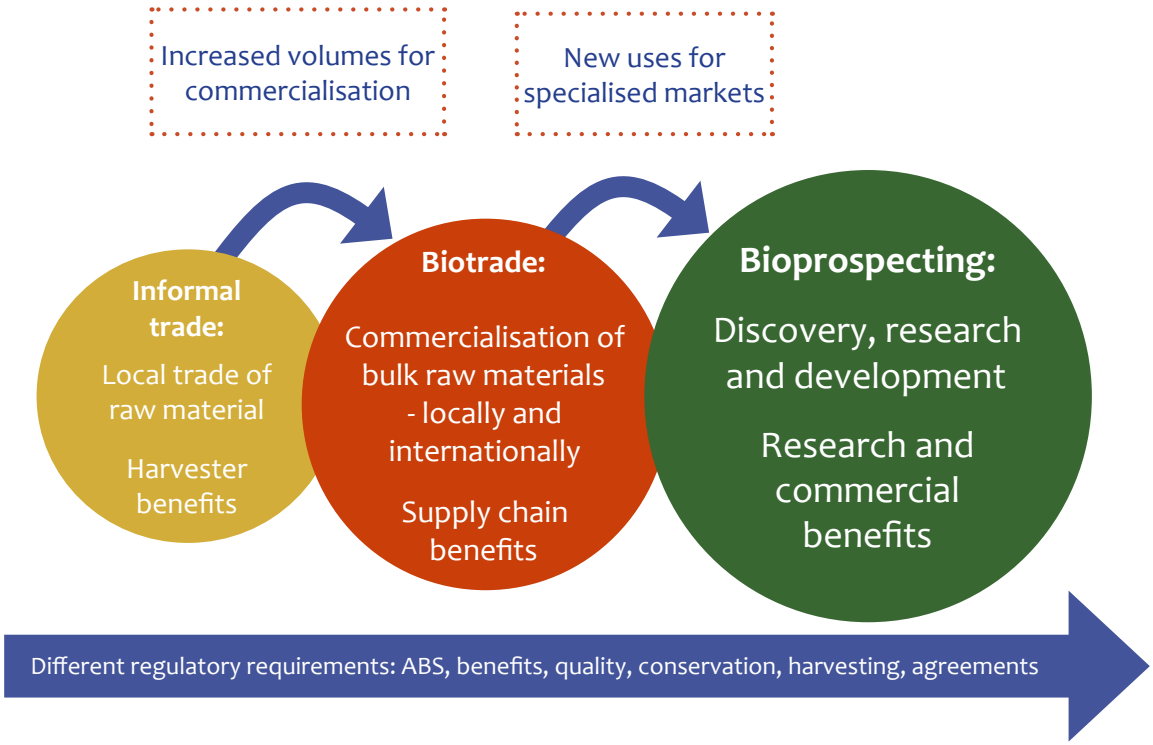


**Figure 1. Overlaps between informal trade, biotrade and bioprospecting** *(Adapted from Wynberg, 2017)*

## IMPACTS OF DIFFERENT COMMERCIALISATION STRATEGIES

The examples described indicate that significant challenges arise due to the broad scope of South Africa's Biodiversity Act (which includes both biotrade and bioprospecting) and its ABS Regulations. The complexity of the ABS regulations and the time-consuming processes to be followed in order to comply, have caused industries to source ingredients from neighbouring countries such as Namibia and Zimbabwe where the same resource can be accessed more simply.

On the other hand, very little regulation is associated with the informal trade of indigenous plants in South Africa, therefore commercialisation at this level continues without adequate monitoring and control.

Each of the three commercialisation activities have a different suite of elements which make them distinct. As a result, the benefits obtained, the quality requirements expected, the conservation measures employed, and the regulatory requirements differ from one approach to another.

Figure 1 depicts the distinctions and overlaps between informal trade, biotrade, and bioprospecting (after Wynberg, 2017). The illustration highlights the importance of regulating informal trade activities and adopting separate regulatory approaches for biotrade and bioprospecting activities.

## ENVIRONMENTAL CONCERNS

A central motivation behind the CBD and Nagoya Protocol is that the economic gain from the commercialisation of indigenous resources is intended to provide an incentive to sustainably harvest and conserve the resource. In the case of the resurrection bush, particularly for informal trade activities, the quantities harvested, and the methods employed are unregulated and therefore largely unknown. Some companies have resorted to sourcing the resurrection bush from informal traders to bypass regulatory hurdles, putting increased pressure on wild stocks. Without effective monitoring of informal trade activities, the resurrection bush will remain exploited and offtake will continue uncontrolled. The limited knowledge and capacity of informal traders to harvest sustainably presents additional challenges to address resource mismanagement on communal land.

***Resurrection bush growing in the wild.***
*Credit: Michelle Nott*

The majority of biotrade and bioprospecting commercialisation approaches operate in conjunction with significant NGO support, where sustainable harvesting measures are prescribed and monitored. These activities involve more formalised processes to access and commercialise the resurrection bush, requiring prior informed consent and permit applications from the state. Ongoing involvement of NGOs and support organisations could thus go some way towards regulating offtake.

Although efforts have been put in place to support the sustainable harvesting of the resurrection bush, there is little evidence that long-term conservation strategies are being enforced. In Zimbabwe, cultivation trials are being explored; however, this potentially reduces the pressure on wild harvested stocks rather than contributing to the overall conservation of the species and associated habitats. In Namibia, even though there is an abundance of the resource, there is still concern about local impacts on the species should demand for the resource increase. These examples demonstrate how there is often little consideration of how decisions and policies on ABS may effectively provide incentives for conservation. Namibia, Zimbabwe and South Africa have included conservation components in their national ABS regulatory frameworks, and while quotas in some countries determine sustainable harvesting limits, there is very little practical evidence

that associated habitats and ecosystems are adequately conserved on the ground. It should be mandatory for all ABS agreements to include holistic strategies for managing the conservation of targeted species and associated habitats and ecosystems, regardless of the abundance of the resource. The resurrection bush is a very slow growing species and cultivation may not serve as a viable solution to increasing demands. Conservation of the species, including associated habitats and ecosystems, is imperative, given that commercialisation activities continue to rely on the wild resource base.

This brief demonstrates the importance of managing and regulating the resurrection bush in a holistic, sustainable and collaborative manner. This is especially important given that the resource straddles several national boundaries and is also deeply embedded in traditional knowledge and cultures.

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***Resurrection bush twigs at a Himba household.*** *Credit: Michelle Nott*

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