

Accessing international markets for Marula fruit & oil



TECHNICAL BRIEF 1

APRIL 2020

This technical brief is produced by the ABS Compliant Biotrade in South(ern) Africa (ABioSA) project.

*It is focused on Marula (*Sclerocarya birrea* subsp. *caffra*) fruit pulp and seed oil for food use.*

It is intended for ABioSA partners, the Marula business community, indigenous people & local communities (IPLCs), government and its agencies, trade associations & cooperatives, research institutions, investors and funders.

Future Marula technical briefs will cover quality standards & reliable supply, conservation & sustainable use, policy & regulations and beneficiation & product development. The ABioSA project will also distribute technical briefs on other species, and other consumer product or ingredient markets such as cosmetics.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

THE ABS
CAPACITY
DEVELOPMENT
INITIATIVE



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

Introduction

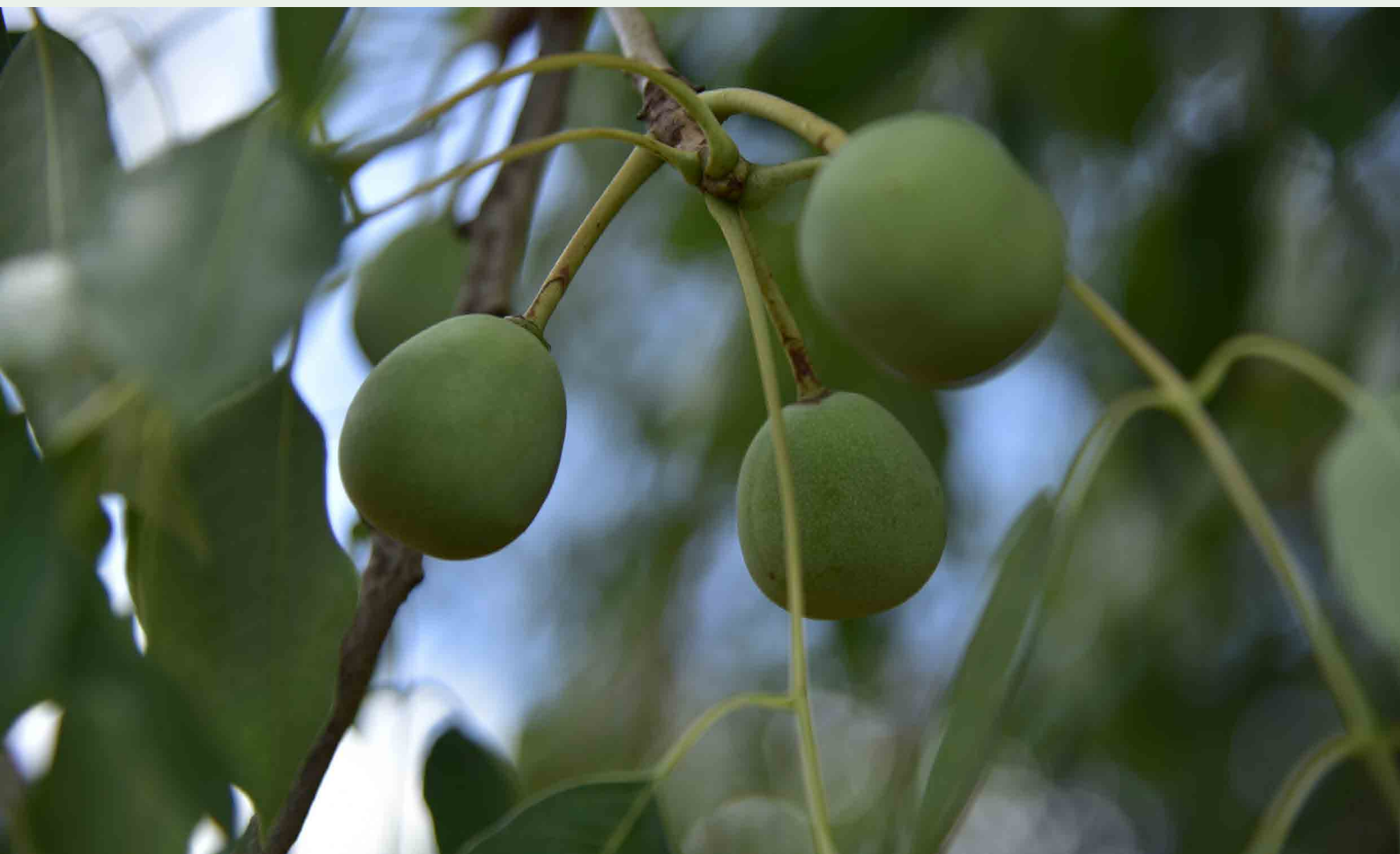
The Marula sector in Southern Africa has significant potential to expand production and enter new markets, a process that requires coordinated technical support at a sector level.

The ABioSA project has made critical progress towards a sector-level approach to European Union (EU) and other markets, including an understanding of international market regulations and what is required of local producers and product manufacturers.

This technical brief covers market access for food ingredients and products derived from Marula fruit, seeds, oil and pulp.

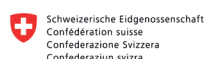
What is the Marula sector?

The Marula sector includes all people and organisations in the Marula value chain, from harvester communities and cooperatives to product developers, exporters and retailers. It includes IPLCs, partners in biotrade and Marula-related projects, the Marula business community, government and its agencies, trade associations, regulators, research institutions, investors and funders.



For information on the ABioSA project or the Marula sector please [contact](#) project manager Adrie El Mohamadi on adrie.elmohamadi@giz.de

The ABS Initiative is funded by



Swiss Confederation
Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

and implemented by

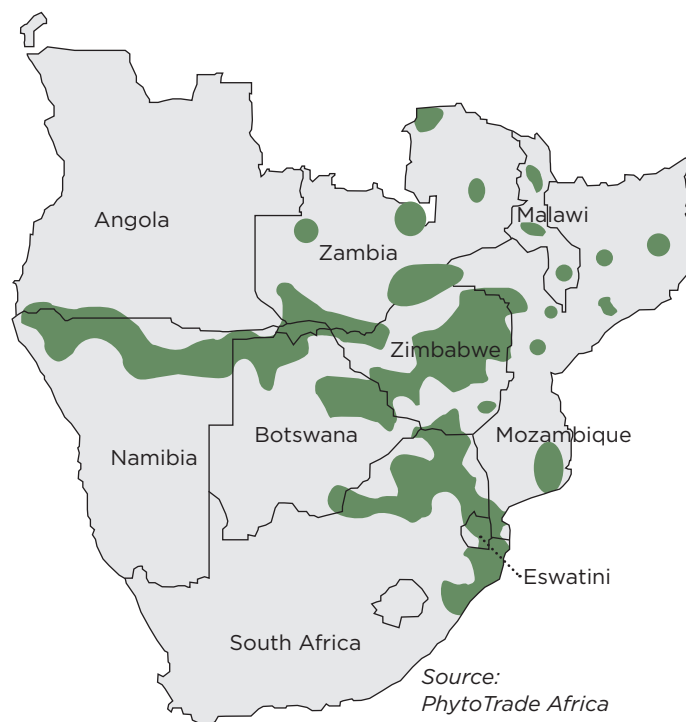


A rich golden resource

Marula is a rich natural transboundary resource in Southern Africa with ecological, economic and social significance. It is widely distributed in a broad and varied landscape, interacting with many different cultures, perceptions and belief systems.

Marula is a perennial and drought-resistant tree of the *Anacardiaceae* family, growing in the warm frost-free regions of sub-equatorial Africa, and typically producing an abundant crop. Found at medium-low altitudes, in open woodlands and bush, a Marula tree reaches up to 10 metres. It survives for up to 150 years, so its development as a commercial crop is key to future climate change mitigation strategies.

The Marula economic sector has the potential to stimulate rural development, job creation and new export markets, with spin-off benefits in technology, innovation, small business development and skills. It can contribute to social, environmental and financial sustainability.



Distribution of Marula in Southern Africa

Opportunities to develop the Marula economy

The Southern African biotrade sector was consulted on a future Marula sector development approach during two 2019 workshops attended by representatives of harvesters and primary producers, the development sector, government and its implementing agencies, and people involved in manufacturing or trade in Marula products. The workshops identified a number of important issues for the Marula sector to consider.

The development of a successful Marula economy requires a coordinated approach that includes engagement with government, collaborative planning, shared objectives, standards and market development.

It must take account of differing national ABS regulations, conservation and sustainable use, and indigenous knowledge. The sector will require evidence-based ecological, economic and social baseline data and monitoring.

Commercialisation of the Marula sector will require domestication and cultivation to improve genetic strains, quality and reliability; as well as sustainable harvesting from the wild resource.

Biodiversity conservation and sustainable use will require capacity development, training and funding to protect the resource for future generations. A sustainable Marula sector requires resource assessments and monitoring that include volume of supply as well as social, cultural and environmental conditions. Sustainability needs to take account of climate change.

The sector needs to develop a scientific basis for claimed Marula benefits which can be articulated at industry, consumer and policy level. The sector should remain under the control of people and organisations in Southern Africa and where the natural resource exists.

All industry players must be aware of the vital relationship between commercialisation, conservation, sustainability and access & benefit sharing.

The size and accessibility of the Marula resource is a key factor for investors and industry partners.

Monitoring and evaluation off a reliable baseline are important, though data gathering can be difficult due to absence of information or confidentiality in commercial operations.

Market access literature review conducted on behalf of ABioSA

A literature review has been undertaken of existing local and European technical reports and opinions to understand how new legislation and regulations are being interpreted. The review focused on Marula for ingredient and food use. The University of Johannesburg (UJ) and ABioSA consultants reviewed 360 scientific publications, including 60 on food use and 25 on chemistry and compounds of interest, safety, toxicity studies, anti-nutrients and animal studies.

ABioSA has completed the comprehensive review and report on regulatory routes to approval for Marula and other biotrade species, including Mongongo, Moringa, Baobab, Kalahari Melon, Ximenia and Mafura. The report includes estimated costs and timelines for access to markets in the EU, the US and China.

The literature review found strong supporting data on apparently safe traditional and ethnobotanical uses of Marula, and interesting chemistry for health applications. Animal feed trials further contribute to draft assessments of safety. Marula seed cake and other by-products were fed to a variety of domesticated mammals to check on weight gain, digestibility and quality of meat. Human safety was not the focus of these studies, but they show good results, which is helpful in understanding potential risk in humans.

Findings from the Marula market access review

	Marula Juice / Pulp	Marula oil
Current status	Marula 'berries' currently have 'not novel' status in the EU (European Commission, 2017). ABioSA consultation with EU regulators indicates that this refers to the Amarula liquor drink rather than Marula fruit, juice, pulp or extracts. Therefore, it is unlikely these Marula fruit products would be accepted in the EU without further notifications or applications.	Not applicable
History of use (HoU)	There is some evidence of HoU but it is mainly folkloric or anecdotal evidence rather than from formal studies or trade sales. Significant trade data does exist and should be collected.	There is limited evidence of HoU, but in the form of folkloric or anecdotal evidence rather than from formal studies or trade sales. Significant trade data does not appear to exist.
Intended use	As a food ingredient in a variety of products yet to be determined.	As a food ingredient in a variety of products yet to be determined.
Evidence of toxicity	There is evidence of low toxicity, but regulatory approval could be achievable if supportive HoU can be produced alongside in vitro and non-animal studies.	There is evidence of low toxicity, but regulatory approval could be achievable if significant supportive HoU can be produced alongside in vitro and non-animal studies.
Conclusion	The consultant recommended <i>Traditional Foods (TF)</i> as the route to EU regulatory approval and marketing authorisation of this ingredient	<i>Full Novel Foods (FNF)</i> approval is the recommended route in the EU for regulatory approval and marketing authorisation of this ingredient. This would be based on substantial equivalence to a known counterpart yet to be identified. If the toxicity issues can be resolved (by demonstrating safety from toxicity studies and further literature reviews) then FNF approval is likely to be achievable.

Challenges to be overcome

Market regulations

Access to new markets requires producers to satisfy international regulators concerned with consumer food safety, evidence of sustainably safe and hygienic manufacturing, and local standards and testing infrastructure. Decisions need to be made about the best route to market, and which regulations need to be navigated and complied with.

EU Novel Foods (NF) regulations refer to food not consumed to a significant degree by people in the EU before 15 May 1997. It includes newly-developed or innovative food, food produced using new technologies and production processes, as well as food which is or has been traditionally eaten outside of the EU.

Regulation of Novel Foods in the EU has changed favourably with the inclusion of a category for '*traditional food from a third country*'. This may make it easier to register ingredients with a history of safe use. Marula has a very strong history of safe use, but this needs to be formally documented for international regulators.

The principles underpinning *EU Novel Foods* regulation is that products must be safe for consumption, and properly labelled to avoid misleading consumers. If intended to replace another food it must not differ in a way that its consumption would be nutritionally disadvantageous.

In the United States, food imports must comply with the Food and Drug Administration's GRAS (Generally Recognised As Safe) regulation. The food or ingredient needs to be recognised by qualified experts as demonstrably safe under the conditions of its intended use.

Full Novel Foods Approval (FNF) as defined in *Article 10 of the Regulation (EU) 2015/2283* of the European Parliament and of the Council on novel foods (*Regulation (EU) 2015/2283, 2015*).

Traditional Foods (TF) Notification (Article 14) of the *NF Regulation (EU) 2015/2283* covers the approval pathway of novel foods that have significant History of Use (HoU) in a third country (i.e. countries outside the EU) for the past 25 years of continuous use. Should the submission of this simplified TF Notification procedure not be considered valid, a *Traditional Foods (TF) Application (Article 16)* of the *NF Regulation (EU) 2015/2283* could then be submitted based on further safety evidence as requested by the European Food Safety Agency. This usually requires more stringent safety criteria that was not required under the *Article 14 TF Notification*, such as acute toxicity studies, more rigorous HoU or improved quality control data.

Cost and complexity

Securing access to new international food and ingredient markets is an expensive and complex process not previously attempted by the Marula sector. We can however learn from the market access experience and success of other species such as Baobab, which is also indigenous to Southern Africa. Research and data need to be verified, and a laboratory infrastructure therefore needs to be established for monitoring and verification. The effect on consumers of anti-nutrients present in Marula will require analysis and clear communication to regulators.

Toxicity tests

The compounds in Marula change significantly as the fruit ripens, and they differ between fruit pulp and the skin. Some of these compounds may be toxic in large amounts and will need checking against toxicity databases to determine volumes for safe use.

Traditional use of Marula fruit in beer or cider may not be sufficiently similar to new or intended uses, and some proposed applications and levels of use in the EU may exceed traditional use levels.

Compliance with EU regulations has a high technical and data requirement. Formal market trade data going back 25 years is not easy to obtain, but this work is in progress.

Quality standards and reliable supply

There is no current standard for Marula oil as a food ingredient and it is known from the cosmetic sector that there are issues with inconsistency in product specifications. Principles of uniformity, standards and reliability are as important on the raw material supply side of the biotrade value chain as they are at the point of product retail. Every point in the value chain will require different standards. The profile of different Marula products needs to be clarified. Standards need to be fit for purpose, ideally developed by producers and aligned with what the market wants. They should be accessible to newcomers to the industry and freely available online. Standards should enable trust across all parts of the value chain.

Restrictions on Marula fruit harvest

There is confusion and concern in South Africa and other territories as to the legality of harvesting Marula fruit. This is due to legacy legislation intended to restrict or prohibit the use of Marula for timber, but which does not specifically exclude fruit or allow its sustainable use. This will be dealt with in a future technical brief on local, national, regional and international policy and regulations.

Market access recommendations

ABioSA consultants have recommended *Traditional Food (TF)* as the route for regulatory approval and marketing authorisation for Marula fruit. They recommended *Full Novel Foods (FNF)* approval as the route for regulatory approval and marketing authorisation for Marula oil.

Next steps

The next step will be to implement the recommendations from the study into compliance routes to EU market access, with a focus on Marula fruit pulp and seed oil. We are reconsidering including the Marula nut following a request from a potential partner.

The implementation plan is projected to run over two to three years, and ABioSA is in the process of identifying funding partners.

A future Marula association

Based on the research findings and considerations identified during the Marula workshops in 2019, ABioSA and partners are taking the first steps towards establishment of a business association to serve the interests of the Marula community. This is an approach which has helped to develop other natural resource sectors.

The association will be open to all Marula producers, traders and ingredient or product manufacturers, including cooperatives and community groups. We anticipate it being created with support of the ABioSA project and other institutional stakeholders, and then taken over by the business sector.

The association's prime purpose will be to enable the Marula community in Southern Africa to collaborate in support of common goals, including development of quality standards, market access and a sustainable economic sector.

Members of the association will be asked to contribute to development of products, standards and specifications development by providing materials and data for analysis and dossier preparation. This will ensure that members' products comply with the dossier, and *vice versa*.

A process is underway to identify Marula businesses and institutions who want to get involved, define membership benefits and obligations, and to put in place an interim leadership and governance structure. Please indicate your interest in a future Marula association by [emailing](#) ABioSA project manager Adrie El Mohamadi.



Services may include:

Market research and demand analysis

Market strategies for different products, including business cases and export dossiers

Research to guide the production of high-quality Marula oil and products

Coordinated sector-level strategies for market access

Help for small businesses to prepare for new markets

Lobbying and advocacy to support development of fit-for-purpose policy and regulations

Training and technical support

Assistance with standards development and compliance, from individual ingredients to packaging

SME capacity building

Benefits of joining a Marula association

Participation in a future Marula association gives communities and businesses the opportunity to shape the sector and contribute to it becoming a fast-growth element of the biotrade economy. They will have priority access to literature, reports and analysis from specialist consultants. Participating in the development of the dossier for market access will provide commercial first-mover advantage.

Our proposed way forward

Activity
Accelerate the sector-level approach by development of a Marula business association
Develop a detailed roadmap to international market access for Marula.
Stimulate new investment in product development
Help small businesses to become export ready and internationally competitive
Create opportunities to increase and diversify the trade and use of Marula
Commission the Marula sector development plan
Detailed engagement with the Marula sector
Develop series of technical briefs
Support the establishment of a national laboratory network, with a focus on development of local skills and a local technology supply chain. The laboratory network will support Southern African SMEs striving to comply with EU regulation.
Secure co-funding
Engage with potential investors
Contracting of consultant to implement the plan

Other Marula-related ABioSA work underway

The development of South African national standards is underway for Marula and other priority species including Fever Bush (*Lippia javanica*), Rose Geranium (*Pelargonium var Rose*) and Baobab (*Adansonia digitate*). Proposals are also being considered for the development of national standards for oils derived from Buchu (*Agathosma betulina*), Cape Chamomile (*Eriocephalus punctulatus*), Imphepho (*Helichrysum odoratissimum*), Kalahari Melon (*Citrullus lanatus*), Mongongo (*Schinziophyton rautanenii*) and Sour Plum (*Ximenia americana & caffra*). UNIDO GQSP-SA and the Southern African Essential Oils Producers Association (SAEOPA) are supporting industry in this process, in collaboration with a SA Bureau of Standards technical committee.

Procurement has started for the development of sector plans for Marula and five other species – for consultation with relevant authorities and stakeholders.

Procurement has started for a desktop analysis looking at principles and an approach to a long-term national monitoring of important indigenous biotrade species in South Africa. It will look at international best practice for long-term monitoring programmes, existing resource assessments undertaken by industry and NGOs, and sustainability studies for biotrade species. Also to be assessed is the ecological science expertise available in the region, and factors other

than harvesting, such as habitat transformation, that impact on biotrade resources. It will also study factors such as organisational mandates, international cooperation, governance, access, existing ecological, industry or science networks, and development projects that may influence the proposed national monitoring programme and proposed Marula development programme.

A resource assessment methodologies and monitoring workshop is being planned where the desktop analysis findings will be presented and discussed.

About the ABioSA project

ABioSA is an ABS-compliant biotrade programme for South and Southern Africa, funded by SECO and implemented by GIZ. In collaboration with the South African Department of Forestry, Fisheries and the Environment and other regional governments, the project works with 12 biotrade value chains and plant species, including some which straddle national borders. They were identified based on criteria including traditional knowledge, ecological sustainability, market demand, potential for value-adding and job creation, and the participation of Indigenous People and Local Communities (IPLCs) and Small Medium Enterprises (SMEs).

The project provides technical assistance, financial support and policy dialogues. One of its planned outputs is the development of draft sector development plans for selected species.