

# Cultivation practices and use of Marula by smallholder farmers in dry regions of Zimbabwe



GIZ/ABioSA/Jonathon Rees



ABioSA STUDENT RESEARCH

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Andrew Tapiwa Kugedera did this research as part of his Master's Degree in Agroforestry at Zimbabwe's Bindura University of Science Education. He presented his findings at the first African Biotrade Festival in September 2023. Since then, Andrew has obtained his PhD in Agronomy and is a lecturer and supervisor.



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## About Marula

Marula is one of the most economically important but underutilised indigenous species in southern Africa. It is a perennial, drought resistant fruit-bearing tree which can live up to 150 years, and has significant nutritional benefits.

The yellow fruit is traditionally used to make beer and juices, and is being explored for its flavour, fragrance and health potential in international food and beverage markets. Marula oil is pressed from the kernel for export to cosmetics producers.

Products derived from Marula can function as a safety net from failure of other crops. Sustainable domestication and cultivation practices are required for the commercialisation of Marula, and to improve genetic strains, quality and reliability.

Modern research has verified many of the beneficial properties of Marula oil and the demand for Marula oil is growing, particularly in the wellness and cosmetics industries.

Marula has been wild harvested by local communities for generations, though its commercial exploitation is relatively new.

## Research summary

Kugedera investigated sustainable cultivation and harvesting methods for Marula (*S. birrea*), which has potential to form a strong pillar for a new biotrade industry empowering rural communities and industry in Zimbabwe.

He sought to determine practices related to utilisation, harvesting and economic effects of Marula on human livelihoods in the dry region of Zimbabwe, mainly in Chivi and Mwenezi. He assessed propagation techniques, including truncheons, planting seeds, grafting and natural regeneration from 2014 to 2023.

Kugedera's specific objectives included:

- Identifying sustainable propagation techniques
- Assessing stem density in arable and non-arable areas
- Assessing harvesting techniques in the same areas
- Exploring utilisation of Marula use in dry regions
- Assessing the contribution of Marula farming to livelihoods

He identified that rural communities have limited knowledge of the potential value in Marula products.

There are no documented institutional policies on the management of Marula trees and their harvesting and utilisation. This is something he hopes his research will contribute to.

Kugedera's research was undertaken within the scope of sustainability science, an interdisciplinary field focused on understanding the interactions between human society and the environment.

Among his goals as promotion of sustainable development by addressing issues related to environmental degradation, social equity and economic development.

Kugedera's study focused on vulnerability and robustness of human-environment systems. Specifically, the research focused on institutional frameworks designed for sustainable research management.

Kugedera's research thesis was published by the Bindura University library. His work on sustainable propagation techniques was published in the *Acta Biosciences Journal*, and his findings on the utilisation of marula have also been published.

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## Results

48% of participants indicated that most Marula trees were self-seeded, but that new seedlings are often consumed by livestock. Less than 29% of participants reported new plantings. Farmers propagate Marula using seeds (47%) and truncheons (28%).

Most farmers had more than one Marula tree in their homestead, with the overall proportion of Marula trees increasing since 2014. They had limited knowledge about propagation utilising grafting, which tends to increase growth and yield.

There is an urgent need for resource management and conservation legislation, including national regulations and strategies to support sustainable utilisation and marketing.

Public/private partnerships should be supported to this end. The largest potential economic benefit of Marula would be increasing yields to 65,000 kg/hectare.

The successful development of a Marula economy requires a coordinated approach including engagement with government, collaborative planning, the sharing of objectives, and common industry standards.

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