



MIOMBO NETWORK NEWSLETTER

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NOTE FROM THE STEERING COMMITTEE

The Miombo network newsletter seek to keep network members updated of activities and opportunities across the region in hopes of fostering greater collaboration and engagement among members.

The Steering Committee would like to thank members who have made contributions to this issue and encourage all members to share their activities and programmes with us for inclusion into the future issues!

Funding Opportunities

This has been compiled specifically for WITS, but the information may be useful to the MN members, especially the funding opportunities for International Students:

<https://www.wits.ac.za/media/wits-university/study/fees-and-funding/documents/WitsFundingOpportunities.pdf>

To contribute in future issues follow this link

https://docs.google.com/forms/d/e/1FAIpQLSf9v7DVZh6WjP3i7Fh0V6BiOGutQKUhUDet1tW8jVcFy_1VRA/viewform?vc=0&c=0&w=1&lr=0&usp=mail_form_link

Aboveground and belowground tree biomass and carbon stocks in the miombo woodlands of the Copperbelt in Zambia

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ABSTRACT

Globally, belowground biomass (BGB) accounts for 20–26% of total biomass, and as such it is an important carbon (C) pool for many vegetation types. However, large uncertainty exists for belowground biomass C compared to aboveground stocks. Using data from 108 destructively harvested trees belonging to 36 miombo species, we estimated root to shoot ratios, and developed models for estimation of aboveground biomass (AGB), BGB and total biomass C stocks in the Copperbelt province of Zambia. We also validated our models using independent datasets from elsewhere in Zambia and Malawi. The C fractions in wood ranged between 51.9 and 58.9%, which was higher than the IPCC default value. The root to shoot ratio was found to be 0.303. The analysis also demonstrated isometric scaling of BGB with AGB. According to cross-validation results, the model that incorporated wood density (ρ), diameter at breast height (D) and total stem height (H) formulated as $AGB = 0.093(\rho D^2 H)^{0.97} \times 1.08$ outperformed existing models developed for the miombo woodlands in Zambia. The best model for BGB was $BGB = 0.476(AGB)^{0.88} \times 1.126$. Using the top-ranked models, the stand-level AGB stocks were estimated at 222.2 Mg ha^{-1} , while BGB stocks were estimated at 52.4 Mg ha^{-1} . Aboveground and belowground C stocks were 125.3 Mg ha^{-1} and 29.5 Mg ha^{-1} , respectively. Total biomass C stocks were estimated at 152.1 Mg ha^{-1} or $558.3 \text{ Mg ha}^{-1} \text{ CO}_2$ equivalent sequestered in tree biomass. These estimates may be used as baseline data for future carbon management and for emerging payment for ecosystem services projects in miombo woodlands.

To access full article visit <https://doi.org/10.1080/17583004.2021.1926330>

KEYWORDS

Allometry; bootstrapping; carbon stocks; crossvalidation; isometric scaling



MAPUTO DECLARATION ON SUSTAINABLE AND INTEGRATED MANAGEMENT OF MIOMBO WOODLANDS

Maputo, 5th August, 2022

The Miombo Network collaborating with the Government of Mozambique convened the first ever high level meeting held in Southern Africa with a focus on the Miombo forest. The Regional Conference on Sustainable and Integrated Management of Miombo Forest held in Maputo, Mozambique on 5 August 2022, saw the participation of two Heads of State of Mozambique and Zimbabwe and eight delegates from Angola, Botswana, Democratic Republic of Congo, Malawi, Tanzania, Zambia, South Africa and Republic of Congo (the last two countries participated as guests) from the Southern African Miombo Woodland region and/or sharing the Great Zambezi River Basin.

Under the theme of Integrated and Sustainable Management of Miombo Forest, the regional Conference identified the priorities for the next decade to strengthen systems of transparent, inclusive, and accountable governance of the Miombo forest so that these forests can contribute to local and global climate change efforts, biodiversity conservation as well as to the local and national economies and sustainable development of the Miombo countries and beyond. This culminated into a Maputo declaration in which the states agreed to act on the following:

- a) To enforce the sustainable management principles and practices in production forests including promoting legality, traceability, transparency, and investment in more efficient processing of final forest products while promoting circular economy and integrated utilization of forest products;
- b) To strengthen the management of existing protected areas and create, restore and increase the number of conservation areas in the Miombo Woodland for sustainable community use, under the slogan: "one community, one community forest", including promoting the use of Participatory Forest Management approaches;
- c) To promote alternatives for the diversification of income sources for local communities that depend on the extraction of timber and non-timber products from the Miombo Woodlands through valorisation and other initiatives that promote entrepreneurship and prosperity;

- d) To leverage the capacities and alliances of the African continent, to jointly and decisively use and manage Miombo Woodlands sustainably to achieve the objectives of the 2030 Agenda for Sustainable Development (SDG 13, 15, 17), Agenda 2063 African Union Agenda, the Nationally Determined Contributions (NDCs), and those called for in the 2014 New York Declaration on Forests at the Climate Summit;
- e) To ensure sustainability and conserve the most important biodiversity areas within the Miombo Woodlands and ensure their associated ecosystem services and cultural and spiritual values are also conserved in protected and conserved area systems that deliver conservation and societal benefits. This calls for the deliberate statutory recognition of forestry as a viable land use option, and the effective management of existing protected areas and greater support for local community conservation efforts;

- f) To halt and revert forest loss and land degradation by 2032 and strive towards net zero emissions in the Miombo Woodlands;
- g) To implement programmes to reduce emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+) through Carbon credits and other mechanisms and to do so in a manner that does not harm but rather enhance biodiversity and protect the rights of local communities;
- h) To improve resourcing to restore and secure the integrity of the Miombo Woodlands and their biodiversity as the foundation for actions to address global challenges, and to secure the health and well-being of communities and their economic and social well-being. In particular, we commit to strengthening the integrity and resilience of protected and conserved areas to sustain the ecosystem's long-term functions, cope with the increasing frequency and intensity of climate-induced events and disasters, and strengthen communities' abilities to adapt to climate change;
- i) To foster transboundary cooperation for both peace and security, legal cooperation and to address the transboundary movements of both animals and people, reduce human-fauna conflicts, illegal trade and to reduce the rapid and ongoing fragmentation and disruption of Miombo ecosystems;
- j) To mainstream the Miombo Woodlands into development plans, productive sectors and policy, planning and practice in woodland landscapes to sustain ecological integrity and ecosystem services that support resilient livelihoods;
- k) To enhance research and technology adoption to improve the sustainable management, monitoring and reporting;
- l) To increase communication and knowledge at all levels about the multiple functions of Miombo Woodlands, the importance of their conservation and sharing existing experiences of implementing best practices in the region, targeting local communities, women, children and youths;
- m) To implement multi-level and multi-sectoral participatory forest governance to guarantee Miombo Woodlands sustainable use, resources management and strengthen transparency in governance in the light of the principles of the rule of law in the region;
- n) To provide, based on the principle of adaptive management experience, the existing legal framework, where it can still be improved, with effective measures to protect Miombo Woodlands and integrated management at the regional level;
- o) To promote sustainable utilization of miombo for timber, grazing, improved charcoal production technologies and other forest products;
- p) To promote sustainable eco-tourism in miombo woodlands;
- q) To promote alternative source of biomass energy to reduce over extraction of charcoal from Miombo;
- r) To promote forest plantation and agroforestry systems using native and adapted rapid growing species to reduce pressure on miombo woodlands and increase carbon sequestration;
- s) To promote sustainable and intensive agriculture practices and reduce shifting cultivation in Miombo forest areas;
- t) To provide the legal framework with transparent, swift, and effective mechanisms to maximise the benefits from the revenues obtained from the use of the Miombo's natural resources for the sustainable economic development of local communities and social inclusion, including the application of indigenous knowledge systems in the management of Miombo Woodlands;
- u) To coordinate and strengthen enforcement, investigation, and prosecution, adopting effective mechanisms for coordination and communication between the Forest Sector Enforcement Network, criminal investigation, and prosecution in all countries concerned;
- v) To monitor the effective implementation of the "net zero loss of biodiversity" standard, including updating the list of threatened flora species as defined by CITES;

- w) To monitor the effective implementation of the "net zero loss of biodiversity" standard, including updating the list of threatened flora species as defined by CITES;
- x) To eradicate illegal exploitation of forest resources, as well as uncontrolled burning in Miombo woodlands in the region;
- y) To strengthen enforcement of trade on forest products and services from Miombo Woodlands through information sharing;
- z) To undertake concerted effort of technical training and enforcement of employment of technical experts in the management including restoration of Miombo Woodlands and processing of its products;
- aa) To support proactive and forward-looking planning, investment and implementation approaches in Miombo woodlands that reduce significant damage, including the high level of forest degradation, minimize its conversion to other types of land use;
- bb) To promote beekeeping and other livelihood activities that are compatible with conservation of high biodiversity as strategy for miombo woodlands protection;
- cc) To allocate adequate human and financial resources for the sustainable management of Miombo woodlands.



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MIOMBO

"One community, one community forest"



Book | © 2020

Miombo Woodlands in a Changing Environment: Securing the Resilience and Sustainability of People and Woodlands

Editors: ([view affiliations](#)) Natasha S. Ribeiro, Yemi Katerere, Paxie W. Chirwa, Isla M. Grundy

Offers a socio-ecological management and policy analysis of the Miombo ecosystem in the global change context

Provides a new framework for a better socio-ecological understanding of the Miombo woodlands

Includes case studies which reflect the Miombo woodland management and conservation strategies

Is academically rigorous and easily accessible by academics, decision-makers, and general readers

<https://link.springer.com/book/10.1007/978-3-030-50104-4>

Future Ecosystems for Africa (FEFA) at UNFCCC COP 27 Sharm El -Sheikh Egypt



Mohammed Armani, the lead author of the land report, will be working to create a database with evidence for the benefits and trade-offs of various land mitigation options: potentially to integrate with spatial decision tools such as the nature4climate web platform. If you would like to work with him on this and contribute information from your region, please get in touch on: moarmani@outlook.com

FEFA and key partners (OGRC, AGNES, AUDA-NEPAD) has for the last few months been developing a state of the evidence base 'technical report' on mitigation and adaptation actions on Land and in the Ocean with Lead authors Mohammed Armani (Land report) and Ibukun J. Adewumi (Ocean report). Laura Pereira and Sally Archibald, represented FEFA, for the launch of the reports at We Mean Business Coalition COP27 Pavilion during a session on 'Identifying impactful action on land and oceans- a pathway to impactful resilient finance'.

Along with the reports, there is also a Policy brief that was led by Nikki Stevens (Oxford) on appropriate Nature-Based approaches for Grassy Ecosystems, that can be linked to the Land report.

"This event launched reports produced by African experts on impactful activities on lands and in the oceans found to be effective in enhancing local ecosystems. They summarise actions required on land and in the oceans regarding climate change in Africa whilst offering important co-benefits for biodiversity and livelihoods. The reports are being used to help inform Africa's negotiation position, while providing critical context for non-state actors.

All these reports can be downloaded from the FEFA website: <https://futureecosystemsforafrica.org/reports/>, but can individually be downloaded from here:

The event, showcased the authors of the report demonstrating how these reports and scientific analysis of ecosystem activities can and should guide coherent action and finance of it."

Land Report:
<https://futureecosystemsforafrica.org/reports/Land-Evidence-Base.pdf>

FEFA, with the others mentioned above, recognised the need to mobilise African science and evidence from the continent, to feed into these important discussions and provide an integrated, technical summary of the potential synergies and trade-offs between climate actions and sustainable development from the perspectives of African scientists and practitioners.

Ocean Report:
<https://futureecosystemsforafrica.org/reports/Ocean-Evidence-Base.pdf>

Grassy Ecosystems Policy Brief:
<https://futureecosystemsforafrica.org/reports/Nature-Based-Action-Africa.pdf>

SEOSAW Holds a Human-Environment Dimensions Workshop 15 & 16 November 2022

The Socioecological Observatory for the study of African Woodlands (SEOSAW) which is an activity of Miombo Network, held a Human – Environment Dimensions workshop from 15 to 16 November 2022. The workshop which saw a participation of about 30 Researchers, including facilitators and Miombo Network members set the tone for research on human environment interactions. This was out of realisation that savannah woodlands, vegetation structure and composition are argued to be greatly influenced by humans. People's lives and wellbeing are in turn affected by savannah woodland change. Many SEOSAW members have a research interest in such human-environment interactions. A lot of information on human dimensions also already exists for individual SEOSAW sites, and some SEOSAW members have started to generate (relatively) standardized data on some human dimensions. This workshop aimed to create an exchange between SEOSAW members on their existing and future work on social-ecological dimensions, and to explore interest and opportunities to facilitate this at the network level. This workshop also aimed to explore whether there is an opportunity to standardize (some) data collection methods with a view to enhance comparability of these dimensions between sites for a regional understanding of H-E dynamics. For detailed proceedings of the workshop, please access the workshop report [here](#).

For more information or to get involved, please contact Penny Mograbi (penny.mograbi@gmail.com) or Geoff Wells (geoff.wells@su.se)

JOIN THE OPEN ECOSYSTEMS NETWORK (OpEN)

To promote the conservation, restoration, and sustainable management of savannas, grasslands, and shrublands, the Open Ecosystems Network (OpEN) draws on the expertise of its affiliated scientists to foster understanding—among policymakers, practitioners and the public—of the value and contribution of open ecosystems to the Earth system, global biodiversity, human livelihoods, and cultures. Open ecosystems together cover >50% of all land and span the temperate and tropical realms of the planet. Open ecosystems are home to a unique and ancient biodiversity that supports and enriches the functioning of our planet while also being of immeasurable value sustaining livelihoods and cultures. Open ecosystems support sun-loving biodiversity where over millions of years natural processes related to fire and animals have been central to the formation and dynamics of these ecosystems globally. Here is a link to a form where you can sign up:

<https://docs.google.com/forms/d/e/1FAIpQLSfd3Tac9ViW9YhMzvRwjbXU0j6l9t2dNTz7Ab-E7C6TSurcQ/viewform>