

CURRICULUM VITAE



RESEARCHERID :

SCOPUSID:

ORCHID: <https://orcid.org/0000-0002-6905-2146>

Position: *Principal Scientists (Timber Processing and Engineering)*

1. PERSONAL INFORMATION

- 1.1. NAME:** Dr. George Mbeva Muthike
1.2. ADDRESS: P. O. Box 64636 -00620. Nairobi.
1.3. PHONE: +254722345405/733736828
1.4. EMAIL ADDRESS: muthikegm@gmail.com/muthikegm@yahoo.com/gmuthike@kefri.org
1.5. NATIONALITY: Kenyan
1.6. GENDER: Male

2. QUALIFICATIONS

- 2.1. Academic Qualifications:** **2016:** PhD, Biomechanical and Environmental Engineering, Jomo Kenyatta University of Agriculture and Technology- Nairobi, Kenya.
2003: Master of Philosophy, Wood Science and Technology (Timber Engineering), Moi University- Eldoret, Kenya.
1990: Bachelor of Science, Wood Science and Technology, Moi University – Eldoret, Kenya.

Key Competencies:

- Natural resource management, processing and utilization with emphasis on value chain development, efficient processing and utilization systems.
- On-farm timber processing and utilization systems and technologies
- Proficient in primary timber processing (saw milling) and secondary processing (wood machining systems, ergonomics and safety, timber seasoning and truss construction.
- Skilled in wood properties testing, data acquisition systems and analyses

- Skilled in wood preservation technologies and applications for different conditions and standards.
- Skilled in optimization for Bio-processing systems

3. 3.1 Other Courses:

- 2020: Certificate in Job Evaluation in the Public Service, Kenya School of Management.
- 2019: Certificate in Senior Management Course, Kenya School of Management.
- 2017: Certificate in Trustee Development Program Kenya. College of Insurance, Nairobi(Kenya) and Humber University, Toronto (Canada).
- 2006: Scientists' Course in Scientific Writing, Africa Forest Network(AFORNET). Kenya.
- 2006: Occupational Health and Safety Course. Directorate of Occupational Health and Safety Services. Kenya.
- 2005: Proficient and Gazetted Timber Grader. Timber Grading Course. Ministry of Roads and Public Works, Forest Department, Kenya Forestry Research Institute and Kenya Bureau of Standards. Kenya.
- 2003: Data Management Course for Scientists and Technical Staff. Kenya Forestry Research Institute (KEFRI)
- 1996: Training for Trainers in Wood-working Machines; Operation, Safety and basic servicing. Makita Power Tools Co-operation, NagoyaCity, Japan.
- 1996: Wood Based Materials Application Technologies, Nagoya International Training Centre, Japan.

4. EMPLOYMENT HISTORY

- **2017 to date:** Principal Research Scientist; National Forest Products Research Programme, Kenya Forestry Research Institute.
- **2007 – 2017:** Senior Research Scientist
- **2003-2006:** Research Scientist I
- **1994-2003:** Research Scientist II
- **1990-1994:** Assistant Research Scientist

5. ADMINISTRATIVE RESPONSIBILITY

- **May 2019:** Deputy Programme Director, National Forest Products Research Programme (NFPRP)

6. PUBLICATIONS

6.1. Journal papers

1. George Muthike, Joseph Githiomi, 2020. Value Chain Analysis of Farm Grown *Melia volkensii* (Gurkii) Timber in the South Eastern Dry lands of Kenya (In Press - urnal of Horticulture and Forestry (JHF-01.06.20-0641).
2. Fred Muisu, **George Muthike**, Francis Mburu, Peter Sirmah, Leonard Mulongo., 2019. Properties of potential wood carving species in Kenya. Advances in Plants & Agriculture Research, Volume 9 Issue 1 – 2019.

3. George Muthike and Joseph Githiomi, 2017. Review of the Wood Industry in Kenya; Technology Development, Challenges and Opportunities. *International Journal of Research Studies in Agricultural Sciences (IJRSAS)* Volume 3, Issue 10, pp45-52.
4. Zhao et al. (George Muthike), 2017. Announcing the Genome Atlas of Bamboo and Rattan (GABR) project: promoting research in evolution and in economically and ecologically beneficial plants. The Author 2017, Oxford University Press. Creative Commons Attribution License (<http://creativecommons.org/licenses>).
5. George Muthike, 2016. Optimization of on-farm machine design parameters for eco-efficient timber sawing based on empirical approach. PhD Thesis, JKUAT.
6. George Muthike, Ben Chikamai and Fred Muisu, 2015. Ranking of Polyvinyl Acetate adhesives and Nitro-cellulose clear paints available in Kenyan markets. *Journal of Emerging Trends in Research*.
7. Muthike G .M., Kanali C .L., and Shitanda D., 2013. The contribution of Framed Chainsaw System to Improvement of Sawn Timber Quality. *International Journal of Current Research*. Vol. 5, Issue, 01, pp.070-074.
8. George Muthike, Christopher Kanali and Douglas Shitanda, 2013. Comparative analysis of on-farm timber conversion systems in Kenya. *Journal of Horticulture and Forestry*. Vol. 5(6), pp. 74-80.
8. George Muthike, Fred Muisu and Joseph Githiomi, 2013. Withdrawal Strength of Nail-Timber Joints for Kenyan Grown Cypress and Pines. *International Journal of Applied Science and Technology* Vol. 3 No. 3.
9. Wekesa L. C., Muthike G. M., Githiomi J. K* and Muga M. O., 2012. An overview of wood carvings industry developments in Kenya. *International Journal of Current Research*. Vol. 4, Issue, 09, pp.086-091.
10. George M. Muthike, Douglas Shitanda, Christopher L. Kanali and Fred N. Muisu, 2010. Chainsaw milling in Kenya. *European Tropical Forest Research Network (ETFRN)*". Issue No. 52. Chainsaw milling: Supplier to local markets. Tropenbos International, Wageningen, the Netherlands.
11. Pasiecznik NM, Choge SK, Muthike GM, Chesang S, Fer C, Bakewell-Stone P, Wright J, Harris PJC. Putting Knowledge on Prosopis into Use in Kenya. *Pioneering Advances in 2006*. KEFRI, Nairobi, Kenya and HDRA, Coventry, UK. 13pp. 2006.

6.2. Books

6.3. Book Chapter

- 6.3.1. Chapter 10: Forestry Products Development and value addition –Draft work in progress

6.4. Technical Notes /Protocols/Guidelines

1. Githiomi JK and Muthike GM. Guidelines for Air-Drying of Timber: LowCost Timber Drying Method for Sawyers, Merchants and other Users. Published byForest Products Research Centre, Kenya Forestry Research Institute. ISB: 9966-776-00-1. 6pp.2008.
2. Muthike GM., Githiomi JK. and Onchieku JM.Sawing Guidelines for Small-scale Timber Processing; specially developed for Chain saw, Mobile saw bench and Pit saw Operators in Kenya. Published byForest Products Research Centre, Kenya Forestry Research Institute (KEFRI) Nairobi, Kenya 2006.

6.5. Policy Briefs

7. RESEARCH

7.1. Completed

2009 – 2016: Technical Team Leader, -Activity 3.3 (Small and Medium Enterpriss (SME) wood industry), Kenya/Finland Forest Reform Programme (Miti Mingi Maisha Bora) (2009-2016). Providing technical support in Enhancing Efficient timber processing and capacity building.

2009 -2016: Provided technical advice and backup in the design, installation and commissioning of the Kenya timber millers training saw mill at Kenya Forest College, Londiani. “Miti Mingi Maisha Bora”, Forest Reform Programme funded by the Kenya and Finland Governments 2009-2016.

2016: Developed the Proposal “*Strength and treatability properties of various Eucalyptus species for electricity transmission poles in Kenya*” NRF Multidisciplinary Research Grant 2016/2017

2018-2019: Formulation of the second Kenya-Finland Forestry Cooperation”. Ministry of Environment and Natural Resources. Providing technical advice on resource efficient management, processing and utilization and wood industry capacity building needs.

2008-2010: Provided technical support in design and capacity building of technology users in Commercialization as means of managing Prosopis juliflora in Kenya” A World Bank Project under Kenya Agricultural Productivity Programme, Competitive Grant System (KAPP-CGS (2008- 2010).

2008 -2010: Provided technical support in designing the machine requirements, training and applications for value addition in processing of wooden handcraft products in the project (Sustainable production and market access strategies for wooden handicrafts from Kenyan dry lands) funded by World Bank through Kenya Agricultural Productivity Programme Competitive Grant System (KAPP-CGS (2008-2010).

Ongoing Research

2018-2020: Strength and treatability properties of various Eucalyptus species for electricity transmission poles in Kenya – Ongoing Research Project funded by National Research Fund (NRF Multidisciplinary Research Grant 2016/2017)

2019–2022: KCSAP CGS/CRGs-AD 2019/SBE/05: Sustainable Bio Energy Including Charcoal Value Chain. Focusing on Testing, validating and/or promoting efficient technologies for the conversion of agricultural waste into useful forms of energy. Technology Validation Funded through **KCSAP COLLABORATIVE RESEARCH GRANTS 2019.**

7.2. Mentorship and supervision

1. PhD Supervision to SAMSON MULOOMASILA, (I701/WTE/30111/2016). *Adoption and Prediction of Green Energy Utilization in Peri-Urban and Rural Households in Selected Areas of Makueni and Machakos Counties, Kenya.* School of Environment, Water and Natural Resources, South Eastern Kenya University (SEKU)
2. MSc. Supervision to **CHEBET DAISY (B520/1222/2018)**, *Assessment of the Genetic Diversity and Suitability of Eucalyptus Species as Power Transmission Poles.* School of Biological Science. University of Embu.

8. INNOVATIONS AND PATENTS (Intellectual Property)

1. Innovated the Framed Chain sawing system for small-scale timber sawing

9. CONFERENCES/SEMINARS/WORKSHOPS

9.1. Presentation of Papers at Academic and Professional Conferences

1. Chagala–Odera E., Ochieng D., Wanjiku J., Muchiri M.N., Gichora M., Tuwei P., Kamondo B., Mengich E., Langat D., Oballa P., **Muthike G.**, Chiteva R., Kagombe J., Cherotich L., Gathogo M., Muthama A. and Oduor N. Contribution of forestry research to sustainable development. Proceedings of 5th KEFRI Scientific Conference 17 – 19 April 2018 at KEFRI Headquarters Muguga, Kenya.
2. George Muthike, Stephen Karega and Joseph Githiomi., 2018. Defects in Plantation Soft Wood in Kenya; Causes, Extend and Distribution. 5th KEFRI Scientific Conference (17-19th April, 2018). Nairobi, Kenya.
3. George Muthike and Joseph Githiomi., 2018. The status of the wood industry in Kenya. 5th KEFRI Scientific Conference (17-19th April, 2018). Nairobi, Kenya.
4. Simon Choge and George Muthike, 2014. Experiences of managing *Prosopis juliflora* invasions by communities in Kenya: Challenges and Opportunities (in) Managing Prosopis

Juliflora for better (agro-)pastoral Livelihoods in the Horn of Africa. Proceedings of the Regional Conference, May 1 - May 2, 2014, Addis Ababa, Ethiopia. Federal Ministry for Economic Cooperation and Development (GIZ).

5. Muthike G.M., Kanali C.L. and Shitanda D., 2012. Comparative analysis of the performance of on-farm timber sawing systems. "Forests and Trees: Serving the People of Africa and the World" IUFRO-FORNESSA Regional Congress and ITTO/AFF Policy Day. Held in Nairobi on 25th -29th June 2012.
6. G.M. Muthike, D. Shitanda, C. L. Kanali and F.N. Muisu. The Status of Chain Saw Usage in Kenya. (in) West African Regional Conference on chainsaw lumbering, Accra, Ghana, 25th and 26th May 2009.
7. G.M. Muthike, D. Shitanda, C. L. Kanali and F.N. Muisu. The Potential of Chainsaw Frame Mills in On-farm Timber Processing in Kenya. Recent Advances in Forestry Research for Environmental Conservation, Improved Livelihood and Economic Development. Proceedings of the 4th KEFRI Scientific Conference Held on 6th – 9th October 2008 at KEFRI Headquarters, Nairobi, Kenya.
8. F. Muisu, F. Mburu, P. Sirma, G. Muthike and L. Mulongo, Density, hardness and wood working properties of potential wood carving species in Kenya. (in) Moi University 4th Annual International Conference, Margatret Thatcher Library, Moi University, 29th July – 1st August 2008.
9. Muthike GM, Impacts of Integrating technology and Skills on Timber recovery and surface quality in on-farm timber processing in Kenya. (in) IUFRO-All Division 5 Conference, Held in Taipei, Taiwan on 29th October to 2nd November 2007.
10. Githiomi JK., Muthike GM. and Muisu FN. Withdrawal Strength of Mechanically Fastened Nail-Timber Joints for Kenyan Grown Cypress and Pines. (in) Proceedings of the 2nd Moi University Scientific Conference; Innovations and Challenges in Education, Environment and Natural Resources Management and Communication and Development in the 21st Century Conference, Held at Sirikwa Hotel- Eldoret on 14th – 16th February 2005.
11. Muthike GM. Evaluating the Impact of skill improvement in Small-scale On-farm Timber Processing in Kenya. Recent Advances in Forestry Research and Technology Development for Sustainable Forest Management. (in) Proceedings of the 2nd KEFRI Scientific Conference, 1 – 4th November 2004. Kenya Forestry Research Institute, Nairobi, Kenya.
12. Muthike GM. Appropriate Technologies in processing and Value Addition of Cedar wood in Marakwet District. Stakeholders seminar on East African Pencil Cedar (*Juniperus procera*) held in Kapsowar, Marakwet, Kenya on 11th May 2004.
13. Muthike GM., and Githiomi JK. Harvesting and Processing Technologies in Farm Tree Utilization; Nurturing Capacity for Value Added Markets. Workshop on Markets and Marketing of Farm Forestry Products in Kenya, Held at KEFRI HQ. Nairobi, Kenya on 18th September 2003.

9.2. Participation in Workshops/Conferences

1. Learning for Rural Livelihoods; Researching the Convergence of Sustainable Agriculture, Informal Community Learning and Appropriate Digital Technology. Organized by University of Wolverhampton, Newton-Utafiti Fund and Jomo Kenyatta University of Agriculture and Technology. Held on 24th – 28th June 2018, Utalii Hotel, Nairobi, Kenya.
2. Contribution of Forestry Research to Sustainable Development. 5th Kenya Forestry Research Institute (KEFRI) Conference. KEFRI Headquarters, Muguga, Kenya . 17-19 April, 2018.
3. Western and Central Africa Timber Sawing and Trade Workshop, Kigali, Rwanda. 21-24th September 2016.
4. “Forests and Trees: Serving the People of Africa and the World” IUFRO-FORNESSA Regional Congress and ITTO/AFF Policy Day. Nairobi, 25th -29th June 202.
5. Technology convergence: The challenges, risks and opportunities. 1st Information Communication Technology (ICT) Conference. Multimedia University of Kenya. 1-3 December 2011.
6. West African Regional Conference on chainsaw lumbering, Accra, Ghana, 25th and 26th May 2009.
7. Moi University 4th Annual International Conference, Margatret Thatcher Library, Moi University, 29th July – 1st August 2008.
8. Recent Advances in Forestry Research for Environmental Conservation, Improved Livelihood and Economic Development. 4th KEFRI Scientific Conference. KEFRI Headquarters, Muguga, Kenya. 6th – 9th October 2008.
9. IUFRO All Division 5 Conference, Taipei, Taiwan, 29th October – 2nd November 2007.
10. Prosopis Expert Consultation Workshop, Awash, Ethiopia, 15th-19th October, 2007.
11. Innovations and Challenges in Education, Environment and Natural Resources Management and Communication and Development in the 21st Century Conference, Sirikwa Hotel- Eldoret, 14th – 16th February 2005.
7. KEFRI Scientific Conference (Recent Advances in Forestry Research and Technology Development for Sustainable Forest Management), KEFRI HQ, Nairobi, November 2004.

8. Kenya Association of Forest Users (KAFU) Small-holder Timber Workshop, 29th November – 1st December 2004.

9.3. Convening/Coordinating Conferences

1. Contribution of forestry research to sustainable development. Proceedings of 5th KEFRI Scientific Conference 17 – 19 April 2018 at KEFRI Headquarters Muguga, Kenya.

10. PROFESSIONAL ENGAGEMENT

10.1. Training

1. PhD study Supervisor to **Samson Muloo Masila, (I701/Wte/30111/2016)**. *Adoption and Prediction of Green Energy Utilization in Peri-Urban and Rural Households in Selected Areas of Makueni and Machakos Counties, Kenya*. School of Environment, Water and Natural Resources, South Eastern Kenya University (SEKU)
2. MSc study Supervisor to **Chebet Daisy (B520/1222/2018)**, *Assessment of the Genetic Diversity and Suitability of Eucalyptus Species as Power Transmission Poles*. School of Biological Science. University of Embu.

10.2 Part-Time Teaching –

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| 1. 2016/2017 Academic Year | Department of Forestry, Karatina University, Kenya |
| Course Units Taught | WST 300: Wood Properties
FOR 414: Timber Harvesting |
| 2. 2014/2015 Academic Year
University (SEKU), Kenya. | Bachelor of Science in Forestry, South Eastern Kenya |
| Course Units Taught | ENF 403: Forest Economics
ENF 404: Timber Harvesting |
| 3. 2013/2014 Academic Year
University (SEKU), Kenya. | Bachelor of Science in Forestry, South Eastern Kenya |
| Courses Units Taught | ENF 213: Forest Mensuration and Inventory
ENF 216: Environmental Economics and Policy |

10.3 Consultancies

- 2009:** Direct Technical Assistance to Community Forest Associations on saw milling and timber marketing. Forest Action Network under “Strengthening and Empowering Civil Society for Participatory Forest Management in East Africa (EMPAFORM-Kenya).

2009: Technical Assistance in Training Tree felling and Timber Processing Staff for Lafarge EcoSystems. Lafarge Eco-Systems, a subsidiary of Bamburi Cement Company to train their staff in tree harvesting and processing.

2009: Management of Prosopis species through utilization strategies in Djibouti. Government of Djibouti and FAO.

2005 – To Date: Coordinator- the National Timber Grading Course – KEFRI/KFS/KeBs/Private sector programme

2003: Improved Utilization of Neem (*Azadirachta indica*) for Carving by Akamba Co-operative Society. Undertook development, layout and testing of Wood drying Kiln for safe drying of curvings. WWF/EARPO and Akamba Co-operative Society

2002: Skill Improvement Training for small-Scale Timber sawyers in Meru Central District. A Consultant funded by Forest Action Network.

10.4 Collaboration with external organizations

10.4.1 Collaboration with Kenya Bureau of Standards in Timber and Bamboo products standard development

10.4.2 Collaboration with Ndarugu Plantations (1960) Limited, Coot Holdings Limited and Snipe Investments Limited on “Incorporation of Laminated (Glulam and Cross Laminated Timber (CLT))” in the development of the Ndarugu Metropolis and Ndarugu’s Student City.

11 EXTERNAL AND INTERNAL RESEARCH GRANTS

(Include research grants won)

1. **2016/17:** Developed and Won Funds for the Project “*Strength and treatability properties of various Eucalyptus species for electricity transmission poles in Kenya*” NRF Multidisciplinary Research Grant 2016/2017.
2. **2009-2016:** Provided technical advice and backup in the design, installation and commissioning of the Kenya timber millers training saw mill at Kenya Forest College, Londiani. “Miti Mingi Maisha Bora”, Forest Reform Programme funded by the Kenya and Finland Governments.
3. **2009-2016:** Technical Team Leader, -Activity 3.3 (Small and Medium Enterpriss (SME) wood industry), Kenya/Finland Forest Reform Programme(MitiMingiMaisha

Bora). Providing technical support in Enhancing Efficient timber processing and capacity building.

4. **2008- 2010:** Participated in “Commercialization as means of managing *Prosopis juliflora* in Kenya” A World Bank Project under Kenya Agricultural Productivity Programme, Competitive Grant System (KAPP-CGS (2008- 2010)).
5. **2008- 2010:** Provided technical Expertise in designing the machine requirements, training and applications for value addition in processing of wooden handcraft products in the project (Sustainable production and market access strategies for wooden handicrafts from Kenyan dry lands) funded by World Bank through Kenya Agricultural Productivity Programme Competitive Grant System (KAPP-CGS (2008-2010)).
6. **2008- 2010:** Provided technical expertise on machine requirements, capacity building in processing and value addition of *Prosopis* timber, charcoal and pod products (2008-2010). “*Commercialization as means of managing Prosopis juliflora in Kenya*”. A Project funded by World Bank under Kenya Agricultural Productivity Programme, Competitive Grant System (KAPP-CGS).

12 LOCAL, REGIONAL & INTERNATIONAL APPOINTMENTS

2020: Appointed to the Multi-Agency Team for Mapping, Verification and Valuation of Mature and Over-mature Forest Plantations in Kenya. *Office of the Cabinet Secretary, Ministry of Environment and Forestry*)

2019: Appointed Chair to the Research and Academic Committee, KEFRI Graduate Research School. *KEFRI*

2019: Appointed a Technical Resource member for the Research and Development of Composite Boards. *NETFUND*.

2019: Appointed Chair, Technical Team for Auditing Saw Milling Industry in Kenya. *Directorate of Forest Conservation, Ministry of Environment and Forestry*.

2019: Appointed Member, Committee on Roadmap to Implementation of the Enterprise Business Plan for KEFRI. *Director, KEFRI*.

2016: Appointed Member of Technical Team to Formulate a New Finland-Kenya Forestry Cooperation Project. *State Department of Natural Resources, Ministry of Environment, Natural Resources and Regional Development Authorities*.

2007: Appointed Coordinator of Timber Grading Training Course in Kenya.

12.2 International

2016: Key Note Speaker: Western and Central Africa Timber Sawing and Trade Workshop, Kigali, Rwanda. 21-24th September 2016.

13 AWARDS AND RECOGNITION

2020: Cabinet Secretary Commendation: On professional inputs into the assignment “Mapping, Verification of Mature and Overmature Forest Plantations in Kenya” Ministry of Environment and Forestry.

2017: Award Competitive Research Grants: National Research Fund (NRF) for the implementation of the project “Strength and treatability properties of various Eucalyptus species for power transmission poles in Kenya”; Multidisciplinary Research Grant 2016/2017. *National Research Fund (NRF)*

2017: The Director’s Commendation (KEFRI) on the award of Multidisciplinary Competitive grants 2016/2017 from National Research Fund (NRF) Grants under the Multidisciplinary Research Grant - 2016/2017.

2015: Certificate of Excellence (KEFRI) for excellent performance in 2014/2015 Financial Year.

2000: Awarded Competitive Research Grants. The AAS Young Scientists Grants, 1999/2000 *African Academy of Sciences (AAS)*.

14 CONTRIBUTION TO KEFRI’S ADVANCEMENT

2019 – Todate – Management of research and institutional resources as the Deputy Programme

- Director (National Forest Products Research Programme)

- Planning and coordination of NFPRP Research Advisory Committees (CRACs)

2009 –To date: Management of Research Activities, as Sub-Thematic Leader (Timber Processing and Engineering (National Forest Products Research Programme)

Past Years:

1. Development of Research Proposals for Call for Proposals
2. Co-operation with other Research Organizations in Research and Development Programmes
3. Coordinating and Training stakeholders on processing and utilization of forest products

15 MEMBERSHIP TO PROFESSIONAL BODIES

1. Member, Forestry Society of Kenya (FSK)
2. Member and Deputy Coordinator, Research Group 5.06.04 (Utilization of Dry land Timber)- International Union for Forestry Research Organizations (IUFRO).

16 REFEREES

1. Dr. Joseph K. Githiomi
Deputy Director, Forest Products and Development
Kenya Forestry Research Institute
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Tel:+254 722496795
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2. Prof. Christopher L. Kanali
School of Engineering
Jomo Kenyatta University of Agriculture and Technology
P. O. Box 62000. Nairobi, Kenya
Tel: +254721351700
Email: kanali_cl@yahoo.com
3. Rev (Dr) Julius K. Manthi
Deliverance Church International
P. O. Box 507 -00902.
Machakos, Kenya