

CURRICULUM VITAE

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DATE OF BIRTH: 6th April, 1964

CAREER OBJECTIVES

To excel in Research and Development of Eco-Efficient Technologies and Skills for Sustainable management, Processing and Utilization of Natural Products for Economic Development, Environmental Conservation and Enhanced livelihoods.

EDUCATION

- 2010 -2016** **PhD**, Biomechanical and Environmental Engineering, Jomo Kenyatta University of Agriculture and Technology, Kenya.
Thesis: Optimization of on-farm machine design parameters for eco-efficient timber sawing based on empirical approach.
Supervisors: Prof. Christopher Kanali; Prof. Douglas Shitanda
- 2012 – 2015** Diploma in Transformational Leadership, with Credit Pan African Christian University, Nairobi, Kenya.
- 2000 - 2003** Master of Philosophy (M.Phil.), Wood Science and Technology (Wood Mechanics & Timber Engineering), Moi University, Eldoret, Kenya.
Thesis: Strength characteristics of Adhesives and paints used for furniture manufacturing in Kenya.
Supervisor: Dr. Fred Ngonzi Muisu; Dr. Ben Chikamai
- 1987 – 1990** Bachelor of Science (Wood Science and Technology) with 2nd Class Upper Division, Moi University, Eldoret, Kenya.
- 1985 – 1986** Kenya Advanced Certificate of Education (KACE), Kangundo High School, Machakos, Kenya.
- 1981 – 1984** Kenya Certificate of Education (KCE), Kangundo High School, Machakos, Kenya.
- 1974 – 1980** Certificate of Primary Education (CPE), St. Mary's Boys Primary School, Machakos, Kenya.

TECHNICAL SKILLS

- 2017 Certificate in Trustee Development Program Kenya. College of Insurance, 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. 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, Nagoya City, Japan.
- 1996 Wood Based Materials Application Technologies, Nagoya International Training Centre, Japan.

HONOURS, AWARDS AND COMMENDATIONS

- 2017 Award Research Grants: National Research Fund 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.
- 2017 KEFRI letter of commendation on the award of National Research Fund Grants under the Multidisciplinary Competitive grants 2016/2017.
- 2015 Awarded a KEFRI Certificate of Excellence for excellent performance in 2014/2015 Financial Year.
- 2000 Awarded Research Grants from African Academy of Sciences for the project "Strength Characteristics of Adhesives and Paints for Wood in Kenya" The AAS Young Scientists Grants 1999/2000.

WORK EXPERIENCE

2017 to date Principal Research Scientist; National Forest Products Research Programme, Kenya Forestry Research Institute.

Duties and Responsibilities:

Problem identification, planning and implanting research projects of multidisciplinary nature; lead scientist in large projects; resource mobilization and budgeting, utilization and rationalization; guidance and mentoring of middle level scientists; publication and dissemination of research findings.

Focus: Natural resources management and processing technologies; Timber Engineering, Seasoning, adhesion and Preservation technologies.

Achievement

1. Participating in the "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.
2. Implementing the project "Strength and treatability properties of various Eucalyptus species for electricity transmission poles in Kenya" under the NRF Competitive Multidisciplinary Research Grants (2016/2017).

2007 – 2017 Senior Research Scientist, Forest Products Research Centre, Kenya Forestry Research Institute.

Duties and Responsibilities

Research problem identification; participation in proposal development and implementation of multidisciplinary projects, principal investigator of medium sized projects, resource budgeting, utilization and rationalization, guidance and mentoring of junior scientists and communication of research findings.

Focus

Natural resources management; wood processing and utilization systems development; timber engineering, seasoning, adhesion and preservation technologies.

Achievement

1. Developed the Proposal “*Strength and treatability properties of various Eucalyptus species for electricity transmission poles in Kenya*” NRF Multidisciplinary Research Grant 2016/2017.
2. 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.
3. 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.
4. 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. 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)).
6. Coordinator- the National Timber Grading Course –KEFRI/KFS/KeBs/Private sector programme
7. Provided technical advice 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).
8. Initiated development initiatives for eco-efficient systems for on-farm timber processing in Kenya (2007- ongoing).

2003-2006 Research Scientist I, Forest Products Research Centre, Kenya Forestry Research Institute.

Duties and Responsibilities

Participation in development and implementation of multidisciplinary research projects, guidance and mentoring of junior scientists, supervision of students on attachment and dissemination of research findings.

Focus On-farm Timber processing; natural resources management, skill improvement in Timber Engineering; Timber Seasoning, preservation, adhesion and carving technologies.

Achievements

1. Initiated research in on-farm timber processing and saw milling systems used in Kenya (2003).
2. Conducted studies on strength of various mechanical joints in wood (glued, nailed and bolt joints) (2004).

1994-2003 Research Scientist II, Forest Products Research Centre, Kenya Forestry Research Institute.

Duties and Responsibilities

Participation in proposal development and implementation of multidisciplinary research projects and dissemination of research findings.

Focus Forest Products, Harvesting, processing and Utilization technologies.

Achievements

1. Attained training in capacity building in Wood Based Materials Application Technologies for Research Scientists in Japan (1996).
2. Developed a winning proposal "Strength Characteristics of Adhesives and Paints for wood" funded through Capacity Building for Young Scientist in Forest Research: African Academy of Sciences (AAS), 2000.
3. Successfully completed the study on strength characteristics for adhesives and paints used in furniture manufacturing in Kenya, through capacity building initiatives by African Academy of Sciences (2001-2003).

1990-1994 Assistant Research Scientist, Forest Products Research Centre, Kenya Forestry Research Institute.

Duties and Responsibilities

To be initiated into appropriate research philosophy and methodology under the guidance of senior scientists, participation in seminars and short courses on research practice.

Focus Forest products, processing and utilization technologies.

Achievements

Sharpened skills in conducting research in forest products
Participated in development and implementation of various small research proposals.

CONSULTANCIES

- 2009** 1. 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), involving;
- Development of training curriculum and materials.
 - Conducting training for saw mill machine operators and secondary wood processing personnel.
 - Evaluation and report writing
2. 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 involving;
- Development of tailored training curriculum, training schedule and materials.
 - Conducting training in theory and practicals.
 - Conducting evaluation and writing of training report.
3. Management of Prosopis species through utilization strategies in Djibouti. Government of Djibouti and FAO involving;
- Assessment of extend of Prosopis invasion.
 - Determination of technical requirements and training needs for management to contain invasion.
 - Initiation of strategies, systems and machinery for processing and utilization of wood and pod products from Prosopis species.
 - Procurement, installation and testing of required machinery for processing of Prosopis products.
 - Initiation of training of local personnel in management of Prosopis through processing and utilization strategies in 6 regions in Djibouti.
- 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 involving;
- Design and Development of a Solar Wood Seasoning Kiln
 - Testing of the wood Kiln.
 - Development of Seasoning Scheduled for Neem wood using the Solar Kiln.
- 2002** Skill Improvement Training for small-Scale Timber sawyers in Meru Central District. A Consultant funded by Forest Action Network, involving;
- Development of training materials for small-scale timber sawyers using chainsaws and mobile saw bench methods.
 - Training the sawyers on the best techniques to employ when using chainsaws and mobile saw benches for improved timber recovery.

Teaching Experience

2013/2014 Academic Year Bachelor of Science in Forestry, South Eastern Kenya University (SEKU), Kenya.

Courses Unit Taught ENF 213: Forest Mensuration and Inventory
ENF 216: Environmental Economics and Policy

2014/2015 Academic Year Bachelor of Science in Forestry, South Eastern Kenya University (SEKU), Kenya.

Course Unit Taught ENF 403: Forest Economics
ENF 404: Timber Harvesting

2016/2017 Academic Year Department of Forestry, Karatina University, Kenya

Course Unit Taught WST 300: Wood Properties
FOR 414: Timber Harvesting

ADMINISTRATIVE RESPONSIBILITIES

November 2003- January 2004; November- January, 2007

Acting Centre Director – Forest Products Research Centre.

2006 - to date

National Coordinator, Timber Grading Course, an initiative of Kenya Forestry Research Institute, Kenya Forest Service, Ministry of Public Works and Private sector for optimum utilization of timber in the construction industry.

2001, 2004, 2009

Centre representative in the KEFRI technical team for the National exhibitions and public information disseminations.

2000- to date

Centre coordinator for Academic attachments, supervision and internship at the National Forest Products Research Programme.

2015-2017 Member, KEFRI Tender Committee

2015/2016 Chair, Inspection and Acceptance Committee, KEFRI Lamu Project.

REMARKABLE SKILLS

1. Research and Development

- 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
- Proficiency in primary timber processing (saw milling) and secondary processing (wood machining systems, ergonomics and safety, timber seasoning and 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

2. Communication (ICT)

- Computer literate with working knowledge and proficiency in various statistical, spreadsheets, word processing and analytical software.

PUBLICATIONS

A. Journal Papers

1. 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.
2. 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>).
3. George Muthike, 2016. Optimization of on-farm machine design parameters for eco-efficient timber sawing based on empirical approach. PhD Thesis, JKUAT.
4. 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.
5. 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.
6. 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.

Conference Papers

1. 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.
2. George Muthike and Joseph Githiomi., 2018. The status of the wood industry in Kenya. 5th KEFRI Scientific Conference (17-19th April, 2018). Nairobi Kenya.
3. 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.
4. 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.
5. 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.
6. 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.
7. Muthike GM, The potential of chain saw milling in Kenya. (in) Forestry research for environmental conservation, improved livelihoods and economic development. KEFRI Scientific Conference, 6th- 9th October 2008. Kenya Forestry Research Institute, Nairobi, Kenya.

8. 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.
9. 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.
10. 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.
11. 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.
12. 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.

Operational Manuals and guidelines

1. Githiomi JK and Muthike GM. Guidelines for Air-Drying of Timber: LowCost Timber Drying Method for Sawyers, Merchants and other Users. Published by Forest 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 by Forest Products Research Centre, Kenya Forestry Research Institute (KEFRI) Nairobi, Kenya 2006.
3. 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.

Technical Reports

1. Muthike GM., Chikamai BN. and Muisu FN. Strength Characteristics of Polyvinyl Acetate Glues and Nitrocellulose Clear Varnishes Used in Furniture Manufacturing in Kenya. Kenya Forestry Research Institute (KEFRI), 2003.
2. Muthike GM. and Githiomi JK. Recovery Rates for Mobile Sawbenches, Pitsaws and Powersaws Used in Sawing Plantation and Farm Trees in Kenya. Research Report, KEFRI, PF/KAR/24, 2003.
3. Muthike GM. And Njenga MG. Sawing Methods available in Processing On-farm Trees. Research paper to Farm Forestry and Plantation Forestry Programmes, KEFRI, 2002.
4. Muthike GM. and Onchieku JM., 2002. Skill Improvement Techniques in Small-scale Timber Sawing. Paper presented in a training seminar for small-scale timber sawyers in Meru Central district in Kenya, organised by Forest Action Network (FAN) in September 2002.
5. Muthike GM., and Ndegwa NM., 1996. The Status of the Furniture Industry in Kenya. Unpublished survey report to KEFRI.

CONFERENCES AND WORKSHOPS ATTENDED

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.
12. KEFRI Scientific Conference (Recent Advances in Forestry Research and Technology Development for Sustainable Forest Management), KEFRI HQ, Nairobi, November 2004.

PROFESSIONAL MEMBERSHIP

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).

RESPONSIBILITIES IN THE SOCIETY

1994 – 2008	Member, Board of Governors, Mbuani Secondary School-Machakos.
2007 – 2012	Associate Pastor. Deliverance Church – Athi River.
2012 – To date	Senior Pastor and General Overseer. Deliverance Believers Fellowship Church (DBFC).

REFEREES

1. Dr. Joseph K. Githiomi
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Kenya Forestry Research Institute
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2. Prof. Christopher L. Kanali
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REFEREES

3. Rev (Dr) Julius K. Manthi
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