

CURRICULUM VITAE

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Academic and Professional Qualifications

Prof. Eng. Bancy Mbura Mati is the Director, Water Research and Resource Center (WARREC) and Professor at Jomo Kenyatta University of Agriculture and Technology (JKUAT) in the Soil, Water and Environmental Engineering Department (SWEED). She holds a PhD degree from the Faculty of Agricultural Engineering, Food Production and Rural Land Use; Cranfield University of United Kingdom; an MSc degree in Land and Water Management and BSc degree in Agricultural Engineering both from University of Nairobi. She is a registered Consulting Engineer, a Fellow of the Institution of Engineers of Kenya (IEK) and Lead Expert in Environmental Impact Assessment (EIA).

Short Course Certificates

Prof. Mati has also received extra specialized training in: Corporate Governance, Mwongozo Induction Programme for Boards of State Corporations, Leadership and Management, Contract Management, Facilitation & Skills Delivery, Academic Integrity & Plagiarism, Database & Metadata Management, Hydrometeorology, Integrated Water Resources Management (IWRM), Agricultural Carbon Credits, Regional Development Planning, Development Research, Grant Management & Governance, Monitoring & Evaluation, Remote Sensing and GIS, Environmental Impact Assessment, Natural Resources Management & Institutions and French.

Previous Career Experiences

Prof. Mati has previously worked with ICRISAT, as the Programme Manager of IMAWESA (Improved Management of Agricultural Water in Eastern and Southern Africa), an IFAD supported programme that covered in 23 countries in eastern and southern Africa. She has also worked with the International Water Management Institute (IWMI), and earlier with the Ministry of Agriculture in the Soil and Water Conservation Branch, at the Head Office in Nairobi.

Teaching & Supervision Duties

At JKUAT, Prof. Mati teaches and conducts research in the broad areas of Water Management, specializing in Irrigation & Drainage, Watershed Management; Rainwater Harvesting, Soil & Water Conservation, GIS, and Engineers in Society. She is the Coordinator of Students' Research Projects, also supervises PhD, MSc and BSc research projects and represents the university at various national and international forums on water related issues.

Research Coordination and Implementation

Prof. Mati has formulated, coordinated and implemented several research projects and publications of results. Currently, she is coordinator of research projects which include; the Smart Water for Agriculture (SWA) project, the Upper Tana Nairobi Water Fund Project (UTNWF), the Osiligi Integrated Mother-Baby (Babywash) project, and the long-term System of Rice Intensification (SRI) research project. The list of her previous research projects is long. She has facilitated resource mobilization for research to support MSC and PhD research in the broad fields of Land, Agriculture and Water Resources Management. She has coordinated the development and promotion of collaboration and linkages with both local and international institutions, organized workshops, seminars and outreach programmes, promotion and dissemination of knowledge, networking and management of research funds and projects.

Innovations

On innovation, Prof. Mati is credited with introducing to Kenya, a number of innovations including; (i) the System of Rice Intensification (SRI), a technology for growing paddy rice which uses less water, and incredibly increases yields. Through this initiative, research, training and awareness creation, SRI has been adopted by thousands of farmers in Kenya, and helped save irrigation water in five irrigation schemes (Mwea, Ahero, Bunyala, West Kano and South West Kano). (ii) Also pioneered fog harvesting in Kenya, introducing the technology through research at five experimental sites in the Ngong Hills, proving that it is possible to convert fog into drinking water, while the equipment collects both fog and rainwater effectively. (iii) In collaboration with SNV/Kenya, Prof. Mati has been conducting research in Meru County on use of Flying sensors, i.e. drones mounted with satellite tracking NIR and IR cameras to gather high resolution data for use by farmers as an early warning tool on crop stressors and performance. (iv) She has also facilitated the formation and functionalization of the National Irrigation Acceleration Platform (NIAP), a network of professionals engaged in the irrigation value chain meant to strengthen collaboration and linkages among the various stakeholders.

Consultancy and Development Work

Prof. Mati is an active consultant and development worker, tackling water resources management, climate change, sustainable land management, irrigation, catchment management strategies, developing and assessing national and international policies and strategies and institutions, as well as workshop facilitation and project evaluation. She has been a consultant for several international organizations, among them; The World Bank, WBI, FAO, WFP, IFAD, AGRA, ICRAF, UNDP, NEPAD, Nile Basin Initiative/RATP, ILRI, IWMI, EAC/LVBC, RELMA, ASARECA, FARA, CCAFS, GIZ, Metameta, Gibb, WRMA, Camco/PREPARED, CTA, Matrix, Sokoine University of Agriculture, Swiss National Science Foundation and Ministry of Environment and Natural Resources (MENR).

Leadership in Boards/ Organizations

Prof. Mati has served/has served as Board member of several organizations at national and international levels. These include (currently) the Advisory Committee of the United Nations University Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), the Advisory Board of the FogNet Alliance (FNA), the Engineers Board of Kenya (EBK), where she is also Chair of the Agricultural and Mechanical Engineering Panels and the Steering Committee of the Kenya Water for Industry Association (KWIA). She previously served on the Board of the National Biosafety Authority (NBA) and as the Regional Focal Point (Africa), for the UNU-FLORES. She has been an Advisory Board Member of the Kenya Young Water Professionals (KeYWAP) and Chair of Thematic Working Group (TWG) on Water for Economic Development in Kenya. Previously, Prof. Mati has served on the Board of the Global Water Partnership (GWP), and as "Project Ambassador" in IWMI's Bill and Melinda Gates Foundation-AWM Solutions project. She has also served in the Advisory Board of the International Rainwater Harvesting Alliance, and has been member of the National Task Force on Food Security in the Horn of Africa and a resource person at UNECA's ACPC for the CCD. She also served as Member of Council of the Institution of the Engineers of Kenya (IEK), was Chairperson of the Kenya Rainwater Association and Chair of the Greater Horn of Africa Rainwater Partnership.

Scientific Writer & Film Producer

Prof. Mati is an accomplished scientific writer, with over **140 publications** in refereed journals, books, book chapters, training manuals, conference papers, workshop reports, research reports, Policy and Strategy documents and consultancy reports. Prof. Mati has produced a set of **9 documentary films** on land and water management. In 2013, her documentary film on the SRI innovation won 1st prize in Africa, awarded by FARA (Forum for Agricultural Research in Africa). She has also made several Key Note Presentations at national and international forums.

Selected Publications (recent)

- Kathia, M.K., **Mati, B.** Ndiiri, J. and Wanjogu, R. (2019). Integrating Mechanical Weeding and Planting for Reduced Labour Input in Paddy Rice under System of Rice Intensification (SRI). *Agricultural Sciences*, 2019, 10, 121-130. Available at: https://file.scirp.org/pdf/AS_2019021516143705.pdf
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- Ndiiri, J.A., Uphoff, N., **Mati, B.M.**, Home, P.G. and Odongo, B. (2017). Comparison of Yields of Paddy Rice under System of Rice Intensification in Mwea, Kenya. *American Journal of Plant Biology*. 2017; 2(2): 49-60. <http://www.sciencepublishinggroup.com/j/ajpb> doi: 10.11648/j.ajpb.20170202.12
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- Recha J.W., **Mati, B.M.**, Nyasimi, M., Kimeli P., Kinyangi, J.M., and Radeny, M. (2016). Changing rainfall patterns and farmers' adaptation through soil water management practices in semi-arid eastern Kenya. *Journal of Arid Land Research and Management*. Volume 30, 2016, Issue 30, Pp 229-238. <http://www.tandfonline.com/doi/full/10.1080/15324982.2015.1091398>
- Mati, B.M.** (2016): Report of the "Land Degradation Assessment in Kenya. Based on a Study of Land Degradation Assessment (LADA) with Remote Sensing and GIS, for Sustainable Land Management (SLM) in Kenya" Kenya Agricultural Productivity and Sustainable Land Management Project (KASLMP); Ministry of Environment and Natural Resources, Nairobi.
- Mati, B.M.** (2016): Assessment Report: *Overview of the Policy, Legislative and Institutional Frameworks for Sustainable Land Management in the Public Sector in Kenya*. Kenya Country Report. NEPAD Planning and Coordinating Agency (NPCA). Midrand, South Africa & Ministry of Environment & Natural Resources, Nairobi.
- Mati, B.** 2016: Water Conservation. *In*: mainstreaming ecosystem services and biodiversity into agricultural production and management in East Africa. Technical Guidance Document. Food and Agriculture Organization of the United Nations (FAO) and Secretariat of the Convention on Biological Diversity (CBD). Rome, pp 57-74. <http://www.fao.org/3/a-i5603e.pdf>
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- Ngonya, E., **Mati, B.M.**, Locola, I., Lixia, R., Chessa, L., Altea, L. Rogerro, P.P. and Twomlow, S. (2014). Agricultural Land, Water Management and Climate Change in Sub-Saharan Africa. In: *Climate Change and Smallholder Agriculture in Sub-Saharan Africa*. Africa Agriculture Status Report 2014. Alliance for a Green Revolution in Africa. Pp 52 - 75. <https://www-cif.climateinvestmentfunds.org/sites/default/files/aasr-2014climate-change-and-smallholder-agriculture-in-ssa.pdf>
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