

**EDWIN KIMUTAI KANDA**

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**PERSONAL DETAILS**

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Year of Birth            1985  
ID Number                23750287  
Gender                    Male  
Nationality                Kenyan  
Languages                English and Kiswahili

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**ACADEMIC QUALIFICATIONS**

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**Higher Education**

2019                        **PhD (IRRIGATION ENGINEERING)**  
University of KwaZulu – Natal, SOUTH AFRICA  
Thesis title:  
*Soil water dynamics and response of cowpea under Moistube irrigation*

2016:                        **Master of Science in Project Management**  
Jomo Kenyatta University of Agriculture and Technology, KENYA  
Thesis title:  
*Factors influencing completion of water projects in Kakamega County*

2014:                        **Master of Science in Water Engineering**  
Moi University, KENYA  
Thesis Title:  
*Application of MIKE 11 simulation model for water quality management in River Nzoia*

2008:                        **Bachelor of Technology in Civil and Structural Engineering (First Class Honours)**  
Masinde Muliro University of Science and Technology, KENYA

**Basic Education**

2001:                        KCSE (O - Level) Mean Grade A – (Minus): Tambach High School  
1997:                        KCPE: Chechan Primary School

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**OTHER SKILLS**

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- Hydrological Modelling
- Structural design Softwares such as AutoCAD, Prokon, RCC Spreadsheet, ArchiCAD

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## PROFESSIONAL BODIES

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- Engineers' Board of Kenya (EBK) – Graduate Engineer (B15663)
- International Association of Hydrological Sciences – Member

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## INTERESTS

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- Water, Sanitation and Hygiene
- Water resources management
- Irrigation engineering

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## GRANTS AND AWARDS

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1. MMUST URF 2020 – KSh 1,000,000 – Water Poverty Index in Kakamega County – Principal Investigator
2. MMUST URF 2020 – KSh 1,000,000 – Innovative wastewater treatment technology – Co- Principal Investigator
3. MMUST Corona Virus Disease (COVID-19) Response University Research Fund (2020) – KSh, 400,000
4. MMUST–Integrated energy system in Kenya URF (2019/2020) – KSh 1,000,000
5. Association of African Universities Small Grants for Theses (2017) – USD 3500
6. National Research Fund (NRF), Kenya – KSh 1,800,000
7. MMUST PhD Partial Scholarship (2016-2018) = KSh 1,440,000
8. NACOSTI MSc grants (2012) – KSh 167,000
9. DAAD MSc Scholarship (2010-2012) – Tuition and Research expenses

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## CONSULTANCIES

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1) Dec 2020 – Date

Western Kenya Fellbaum Community Health Center and Requisite Infrastructure

**Activities and Tasks**

- Water, sanitation and Hygiene (WASH)
- Civil and Structural works
- Environmental impact Assessment
- Risk Assessment and management

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## WORK EXPERIENCE

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August 2019 – Present

**Masinde Muliro University of Science and Technology**

P.O Box 190 Kakamega, 50100

**Lecturer**

Duties:

- Research, Teaching and Postgraduate supervision

**Courses (UG):** Water supply and systems, Environmental Engineering, Occupational Safety and Health and Hydraulics

**PG-** Water and wastewater treatment and water quality and aquatic ecology

- Departmental Examination Co-ordinator

- August 2014 – July 2019      **Masinde Muliro University of Science and Technology**  
P.O Box 190 Kakamega, 50100  
**Assistant Lecturer**  
Duties:
- Research and Teaching
- Main Courses:** Water and Environmental Engineering, Structural Engineering, Soil Mechanics, Engineering Materials and Hydrology
- Responsibilities**
- Departmental Examination Co-ordinator
  - Departmental Time Table and Exam Co-ordinator (2014 – 2016)
  - Projects Co-ordinator (2014 – 2015)
  - Co-ordinator TVET Programmes (2013 – 2014)
- May 2014 – Dec 2015:      **Dedan Kimathi University of Technology**  
**Part- Time Lecturer**  
**Courses:** Theory of Structures, Strength of Materials, Public Health Engineering, Environmental Engineering, Water Resources Management, and Research Methods
- August 2009 – July 2014      **Masinde Muliro University of Science and Technology**  
**Graduate Assistant**  
Duties and Responsibilities:
- Assisting in Research and Teaching
  - Co-ordinator, Diploma Programme
- May – July 2009      **Ministry of Roads Marakwet District**  
Worked as **Technical Supervisor, Roads 2000 Programme**  
Duties and Responsibilities:
- Supervision of workmanship during Road construction
  - Ensure adherence to the specifications in terms of material quality
- January – April 2009      **Cherang'any CDF Project – Kiptoror Bridge and Associated works**  
Worked as **Site Engineer**  
Duties and Responsibilities:
- Design of the structural elements of the bridge
  - Supervision of the construction works of the bridge to ensure adherence to design specifications with special reference to workmanship, material quality and construction methods

August – Dec 2008

**Kensetsu Kaihatsu Consultants- Nairobi**

Worked as **Engineer and Head of Technical Section**

Duties and Responsibilities

- Preparation of feasibility study reports
- Preparation of tender documents
- Geotechnical investigation
- Carrying out Roads and Structural Designs

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**SEMINARS, WORKSHOPS, CONFERENCES AND PUBLICATIONS**

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**Publications in Refereed Journals**

- 1) T.L. Dirwai, T. Mabhaudhi, **E.K. Kanda** and A. Senzanje (2021). Moistube irrigation technology development, adoption and future prospects: A systematic scoping review. *Heliyon* 7
- 2) **Edwin Kimutai Kanda**, Aidan Senzanje and Tafadzwanashe Mabhaudhi (2020). Calibration and validation of the AquaCrop model for full and deficit irrigated cowpea (*Vigna unguiculata* (L.) Walp). *Physics and Chemistry of the Earth* (in Press).
- 3) **Edwin Kimutai Kanda**, Aidan Senzanje and Tafadzwanashe Mabhaudhi (2020). Modelling soil water distribution under Moistube irrigation for cowpea (*Vigna unguiculata* (L.) Walp.) *Crop. Irrigation and Drainage* 69(5): 1116-1132
- 4) **Edwin Kimutai Kanda**, Aidan Senzanje, Tafadzwanashe Mabhaudhi and Shadrack Chisenga Mubanga (2020). Nutritional yield and nutritional water productivity of cowpea (*Vigna unguiculata* L. Walp) under varying irrigation water regimes. *Water SA* 46(3): 410-418
- 5) **Edwin Kimutai Kanda**, Wenquan Niu, Tafadzwanashe Mabhaudhi and Aidan Senzanje (2020). Moistube Irrigation Technology: A Review. *Agricultural Research* 9 (2): 139-147
- 6) **Edwin Kimutai Kanda**, Aidan Senzanje and Tafadzwanashe Mabhaudhi (2020). Effect of moistube and subsurface drip irrigation on cowpea (*Vigna unguiculata* (L.) Walp) production in South Africa. *Water SA* 46(2): 197-204
- 7) **Edwin Kimutai Kanda**, Aidan Senzanje and Tafadzwanashe Mabhaudhi (2020). Soil water dynamics under moistube irrigation. *Physics and Chemistry of the Earth* 115: 1-8
- 8) **Edwin Kimutai Kanda**, Tafadzwanashe Mabhaudhi and Aidan Senzanje (2018). Hydraulic and clogging characteristics of moistube irrigation as influenced by water quality. *Journal of Water Supply: Research and technology – AQUA*, 67(5): 438 – 446.

- 9) **Kanda, E.K.**, T. Mabhaudhi and A. Senzanje (2018). Coupling hydrological and crop models for improved agricultural water management – A review. *Bulg. J. Agric. Sci.*, 24 (3): 380–390.
- 10) **Edwin K. Kanda**, James Odiero, Valery O. Lutta, Basil I.T. Ong'or (2018). Challenges Facing Small and Medium Water Service Providers in Kenya: A Case of Amatsi Water Services Company, Vihiga County. *Journal of the Civil Engineering Forum*, 4(1): 19-26.
- 11) Cleophas Mutoro, Karen Asinza, **Edwin K. Kanda** and Abraham Malenya (2017). Effect of Contractor Capacity and Monitoring and Evaluation on Completion of Water Projects among Water Services Boards in Kenya *International Journal of Research in Management, Science & Technology* 5 (1): 163 – 167.
- 12) **Edwin K. Kanda**, Emmanuel C. Kipkorir and Job R. Kosgei (2017). Modelling of nitrates in River Nzoia using MIKE 11. *Water Practice & Technology* 12(1): 217 – 223.
- 13) Karen Asinza, **Edwin K. Kanda**, Yusuf Muchelule, Shedrack Mbithi (2016). Influence of Financial Capacity and Monitoring on Project Quality of Housing Construction in Nakuru County, Kenya. *International Journal of Research in Management, Science & Technology* 4(3): 38 – 43.
- 14) **Edwin K. Kanda**, Emmanuel C. Kipkorir and Job R. Kosgei (2016). Dissolved oxygen modelling using artificial neural network: a case of River Nzoia, Lake Victoria basin, Kenya. *Journal of Water Security*, 2: 1-6
- 15) **Edwin K. Kanda**, Yusuf Muchelule, Simon Mamadi, (2016). Factors Influencing Completion of Water Projects in Kakamega County, Kenya. *International Journal of Research in Management, Science & Technology* 4( 2): 1-5.
- 16) **Edwin K. Kanda**, Yusuf Muchelule, Simon Mamadi, Douglas Musiega (2016). The Effect of Consultant Related and External Factors on Completion of Water Projects in Kakamega County, Kenya. *International Journal of Civil and Structural Engineering Research* 4(1): 19-25.
- 17) **Edwin K. Kanda**, Job R. Kosgei and Emmanuel C. Kipkorir (2015). Simulation of organic carbon loading using MIKE 11 model: a case of River Nzoia, Kenya. *Water Practice & Technology*,10(2): 298 – 304.
- 18) **Kanda, E.K.**, Taragon, J.K, Waweru, G and Onchiri R (2014). Assessment of pollution status of River Nzoia using physic-Chemical characteristics. *Journal of Science Technology Education and Management* 6 (1&2): 24 – 32.
- 19) **Kanda, E. K.**, Taragon, J. K, Waweru S.G.and Kimokoti, S. N (2013).The Water Act 2002 and The Constitution of Kenya 2010: Coherence and Conflicts Towards

Implementation. *International Journal of Disaster Management and Risk Reduction* 5 (2): 31 – 40.

- 20) R. O. Onchiri, S.G Waweru and **E.K Kanda**. 2011. Assessment of Water Quality in Kakamega Municipality. *International Journal of Disaster Management and Risk Reduction* 3(3): 51 – 58

### Publication in conference proceedings

1. Kipchumba Cheronno and **Edwin Kimutai Kanda** (2020). Evaluation of solid waste management practices in Kakamega Municipality. Sustainable Research and Engineering Conference held on 6<sup>th</sup> – 7<sup>th</sup> October 2020 in Jomo Kenyatta University of Agriculture and Technology
2. Lutta V.O, **Kanda E.K**, Odiero J., Chebii S.J (2018). Assessment of drinking water quality in distribution system: A case study of Kabarnet Water supply, Baringo County, Kenya. Proceedings of 1<sup>st</sup> PAIRC, held on June 17<sup>th</sup> to June 22<sup>nd</sup> 2018, Kisumu, Kenya: 236 – 242.
3. Waweru S.G and **Kanda E.K** (2012). Municipal Solid waste management in Kenya. A comparison of middle income and slum areas. *Proceedings of the international conference on Disaster Risk Reduction and Conflict Resolution for sustainable Development*, Masinde Muliro University of Science and Technology, Kakamega, Kenya. 185 – 190
4. Onchiri, R.O, **Kanda, E.K** and Mosiria, M.D (2012). Impacts of Wastewater Effluent on Lukoye Stream: Analysis of the performance of Busia treatment plant. *Proceedings of the international conference on Disaster Risk Reduction and Conflict Resolution for sustainable Development*, Masinde Muliro University of Science and Technology, Kakamega, Kenya. Pp.417- 421
5. J. K. Taragon, **E. K. Kanda**, J. R. Kosgei (2012) Potential groundwater contamination by nitrate-nitrogen as influenced by irrigation and fertilizer application rates. *Conference proceedings of 8<sup>th</sup> international conference at Moi University, Eldoret, Kenya*. 4- 8<sup>th</sup> September 2012.

### Books and Book Chapters

1. Edwin Kimutai Kanda, Aidan Senzanje and Tafadzwanashe Mabhaudhi (2021). Coupling Hydrus 2D/3D and AquaCrop models for simulation of water use in cowpea (*Vigna unguiculata* (L.) Walp). In: Ting D.S.K and Vassel-Be-Hang A. (eds). *Sustaining Tomorrow*. Springer, Cham: 53-63
2. Edwin K. Kanda (2020): *Structure of a research proposal, thesis and dissertation*. Kipchumba Foundation, Nairobi. **ISBN-13**: 979-8642649886

### Seminars, Workshops and Conferences

Oct 20 <sup>th</sup> – 25 <sup>th</sup> 2019	2 <sup>nd</sup> Cairo Water Week and 2 <sup>nd</sup> African Young Water Professionals conference, Cairo Egypt.
Aug 13 <sup>th</sup> – 15 <sup>th</sup> 2019	South African Institute of Irrigation Engineers (SABI) Congress held in Durban, South Africa Paper presented: <i>Moistube irrigation, crop growth, yield and water use efficiency</i>
Nov 23 <sup>rd</sup> – 30 <sup>th</sup> 2018	Summer School and International training seminar on “managing waste as a resource” University of KwaZulu – Natal, Durban, South Africa
Nov 13 <sup>th</sup> – 15 <sup>th</sup> 2018	South African National Committee on Irrigation and Drainage (SANCID) Symposium held in Mpumalanga, South Africa Paper presented: <i>Effect of soil texture on soil water movement under Moistube irrigation</i>
Sep 17 <sup>th</sup> – 20 <sup>th</sup> 2018	South African Institute of Agricultural Engineers (SAIAE) Symposium held in Durban South Africa Paper presented: <i>Yield response of cowpea to varying water regimes under Moistube irrigation</i>
August 12 <sup>th</sup> – 17 <sup>th</sup> 2018	International Committee on irrigation and Drainage (ICID) International Conference held in Saskatoon, Saskatchewan, Canada Paper presented: <i>Simulation of soil water dynamics under Moistube irrigation</i>
August 1 <sup>st</sup> – 3 <sup>rd</sup> 2017	South African Institute of Irrigation Engineers (SABI) Congress held in Cape Town, South Africa Paper presented: <i>Hydraulic and clogging characteristics of Moistube Irrigation</i>
Nov 14 <sup>th</sup> – 15 <sup>th</sup> 2016	Training Seminar on Advanced Modelling of Water Flow and Solute Transport in Porous Media with HYDRUS held at Nelson Mandela Metropolitan University, George Campus, George, South Africa
May 15 <sup>th</sup> – 16 <sup>th</sup> 2014	Workshop on Faculty of Engineering Curriculum Review held at Masinde Muliro of Science and Technology
April 17 <sup>th</sup> – 21 <sup>th</sup> 2014	Workshop on Capacity Development for Farm Management Strategies to Improve Crop-Water Productivity using AquaCrop held in Mekelle University, Mekelle City, Ethiopia

January 23 <sup>rd</sup> – 24 <sup>th</sup> 2014	University Training Workshop on Curriculum Development and Review for Public Universities in Kenya: Implementation and Accreditation held at MCU, MMUST in Kakamega, Kenya
August 23 <sup>rd</sup> – 24 <sup>th</sup> 2012	KDSA-DAAD conference on the role of County Governments in Water Resources Management in Kenya: Challenges & Opportunities held in Moi University School of Health Sciences; Medical Education Centre Eldoret
June 28 <sup>th</sup> – 30 <sup>th</sup> 2012	Masinde Muliro University 4 <sup>th</sup> Annual international Conference Paper Presented: <i>Solid Waste Composition: A Pre-Requisite for Better Solid Waste Management in Kenya</i> by J.K Taragon, R.O Onchiri, <b>E.K Kanda</b> , D.C Matasero and S.C Ptiso
May 9 <sup>th</sup> – 11 <sup>th</sup> 2012	Institution of Engineers of Kenya (IEK) conference, Nairobi
January 12 <sup>th</sup> - 14 <sup>th</sup> 2011	Hydrometry and Flood management workshop at Moi University
August 16 <sup>th</sup> - 27 <sup>th</sup> 2010	ICT and Pedagogy Training Workshop at Masinde Muliro University

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### COMMUNITY SERVICE

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Member, Board of Management, Queen of Peace Secondary School, 2016 – 2019

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### REFEREES

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 Masinde Muliro University of Science and Technology,  
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Prof. (Eng.) Richard O. Onchiri,  
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