

1. PERSONAL DETAILS

Name: **NAMUSASI EDWARD MASIBAYI**

Date of birth: 16th April 1965

Marital status: Married

Address: P.O. BOX 190, 00100 Kakamega.

Mobile: 0724 155 360

Email: Office: enamusasi@mmust.ac.ke Personal: masibayi@yahoo.com

CAREER OBJECTIVE

To become a Consultant/Lead researcher in Hydrological sciences and Geospatial Information science, and Train young professionals in the same fields.

2. CAREER AND PERSONAL ATTRIBUTES

Career Attributes:

- ❖ Believes in quality training and student satisfaction.
- ❖ Has been exposed to various National and International Research groups
- ❖ Believes in quality and applied research

Personal Attributes:

- ❖ A team player and believes in personal motivation
- ❖ Can work with minimal supervision.

3. Administrative and Management Experiences, & Employment Record

3.1 Administrative and Management Experiences

The following is a summary of my more 30 (1991 – 2021) years administrative and management positions and experiences in GoK and Masinde Muliro University of Science and Technology:

9th December 2015 to date: **Chairman**, Department of Disaster Preparedness & Engineering Management.

2008 – 2010: **Hydrologist/GIS**, Western Kenya Community Driven Development & Flood Management (WKCDD & FM).

November, 2007: **Member**, group of Consultants for the “Development of Flood Risk Scenarios for Burundi” WFP/ICPAC project.

- Jan 2006 – Jan 2007:** Attached to IGAD Climate Prediction and Applications Centre (ICPAC) as **Hydrologist** in charge of Applications (Water Resources, GIS & Remote Sensing, Marine & Wetlands).
- Oct 1992 – Dec 2005:** **Lecturer** in Numerical Methods, Calculus, Hydrology, and Physical Meteorology at Institute for meteorological Training & Research, (IMTR), Nairobi.
- Jan 1991 – Dec. 1992:** **Meteorologist** working at the National Meteorological Centre (NMC), Kenya Meteorological Department (KMD) in the Ministry of Transport & Communications.

3.2 Employment Record

Department of Disaster Preparedness & Engineering Management, Masinde Muliro University of Science & Technology

- Dec 2012 to date: Lecturer.
Feb 2011 – Nov 2012: Assistant Lecturer.

Kenya Meteorological Department (KMD) in the Ministry of Transport & Communications

- Oct 2006 – Jan 2011:** Senior Meteorologist
Jan 1991 – Dec. 1992: Meteorologist

4. ACADEMIC QUALIFICATIONS

- 4.1 Institution attended:** Masinde Muliro University of Science & Technology.
Year: 2008-2011
Result obtained: Doctor of Philosophy (**Ph. D in** Disaster Preparedness & Engineering Management)
Title of thesis: *Hydraulic and Hydrologic modeling for River Nzoia basin, Kenya.*
- 4.2 Institution attended:** Dar-es-Salaam University, Tanzania.
Year: 1999 -2001
Result obtained: Master of Science (**M.Sc. in** Water Resources Engineering (WRE))
Title of thesis: *The rainfall-runoff model for Gucha and Sondu Sub-catchments.*
- 4.3 Institution attended: University of Nairobi**
Year: 1987-1990
Result obtained: Bachelor of Science degree (**B.Sc. Hons- second class**)
Subject: Meteorology

5. PUBLICATIONS IN PEER REVIEWED JOURNALS/ARTICLES

5.1 Publications since last promotion

1. Charles K. Kigen, Francis N. Muyekho, **Edward N. Masibayi**, and Stanley M. Makindi (2019). Potential tropical climate-based spatio-temporal grass variability. IOP Publishing. Environ. Res. Commun. 1 (2019) 021001 <https://doi.org/10.1088/2515-7620/ab0cc7>

2. Omolo David Othiamba, S.B.B Oteng'i and Edward Masibayi (2019). Understanding Relationship between Climate Variability and fodder productivity in Nambale Sub-county, Busia, Kenya.
3. Charles K. Kigen, Francis N. Muyekho, **Edward N. Masibayi**, and Stanley M. Makindi (2019). Spatio-temporal assessment of rainfall influence on vegetation in the arid and semi-arid lands of Kenya. IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT) e-ISSN: 2319-2402, p- ISSN: 2319-2399. Volume 13, Issue 10 Ser. I (October. 2019), PP 37-51 www.iosrjournals.org
4. James Odiero, Basil T.I Ong'or, and **Masibayi N. Edward**, 2018. Rainfall-Runoff Nexus in Mid-block of Yala Catchment (2018). *SSRG International Journal of Civil Engineering (SSRG – IJCE) – Volume 5 Issue 10 – October 2018*.
5. James Odieroa, Basil T.I Ong'ora, & **Masibayi N. Edward**, 2018. Simulation of runoff- water quality effects on surface water supply in Mid-block of Yala Catchment. ICASTOR Journal of Engineering Vol. 11, No. 3 47 – 73. International Journal of Scientific and Research Publications, Volume 7, Issue 7, July 2017 248 ISSN 2250-
6. Saidi Fwamba Wekulo, S.S. China and **E.N.Masibayi** (2018). Evaluation of Land Use/Land Cover Change with Time in Assessing Soil Erosion Risk in Isiukhu River Catchment, Kakamega County, Kenya. American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS) ISSN (Print) 2313-4410, ISSN (Online) 2313-4402 © Global Society of Scientific Research and Researchers.
7. Saidi Fwamba Wekulo, S.S. China and **E.N.Masibayi** (2017). Determination of Actual soil erosion risk with change inland use/land cover in Isiukhu river catchment, Kakamega County, Kenya. International Journal of Scientific and Research Publications, Volume 7, Issue 7, 248 ISSN 2250-3153 www.ijsrp.org.
8. Wekulo Saidi Fwamba, **Edward. N. Masibayi**, Samuel. S. China (2017). Estimation of Spatial Distribution of Potential Soil Erosion Risk in Isiukhu River Catchment, Kakamega County, Kenya. International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Vol. 6 Issue 07, July - 2017 IJERTV6IS070096 (This work is licensed under a Creative Commons Attribution 4.0 International License.) www.ijert.org.
9. Githungo, W., Oteng'i, S.B.B., Wakhungu, J., and **Masibayi, E. N.**, (2016). Multi-criteria based evaluation of user preferences for Drought index. In the special issue of the journal of meteorology and related sciences. 9(2); ISSN 2412-3781. Vol 9, Special issue, may 2016. pp. 13-29.
10. Githungo, W., Oteng'i, S.B.B., Whakhungu, J., and **Masibayi, E. N.** (2016). Viability of Artificial neural network for drought forecasting in ASAL of Kenya. Journal of Meteorological Research (JMR), .ACTA-E-2016-0026.

11. Githungo, W., Oteng'i, S.B.B., Whakhungu, J., and **Masibayi, E. N.**, 2016. Infilling rain gauge missing data gaps with satellite estimates for ASAL of Kenya. Drought hazard assessment and characterization. Hydrology - 130707. <https://www.mdpi.com/2306-5338/3/4/40>
12. Waweru S. G, Onchiri R. O and **Masibayi E. N.** (2016). Factors Causing Structural Failure of the Flexible Pavement along Timboroa to Malaba in Kenya. International Journal of Civil Engineering and Technology (IJCIET). Vol. 7(4), pp. 533 – 538. Article ID: IJCIET_07_04_049. Available online at [http://www.iaeme.com/IJCIET/issues.asp? JType & VType = 7 & IType = 4](http://www.iaeme.com/IJCIET/issues.asp?JType & VType = 7 & IType = 4). ISSN Print: 0976-6308 and ISSN Online: 0976-6316.
13. Waweru S. G, Onchiri R. O and **Masibayi E. N.** (2016). Rutting Failure on Pavement Layers along Timboroa to Eldoret Road Section in Kenya. International Journal of Civil Engineering Research. ISSN 2278-3652 Volume 7, Number 1 (2016), pp. 79-89 © Research India Publications <http://www.ripublication.com>
14. Akali, N.M., Oteng'i, S.B.B., **Masibayi, E. N.**, Mokuu, F.A., and Maloba, J., Mann-Kendall Trends Analysis of Sediment Loading in river Nzoia Basin, Kenya.
15. Akali, N.M., Oteng'i, S.B.B., **Masibayi, E. N.**, Mokuu, F.A., and Maloba, J., 2015. GIS-Based modeling of land use dynamics in River Nzoia Basin, Kenya. *Global Journal of Engineering Science and Research Management*. ISSN 2349-4506, 2(9): 88-104.
16. **Masibayi E.**, Mutua F., Oteng'i S.B.B., 2013: Real-Time River Stage Forecasting Using Upstream Stage Approach for Flood Management, in Nzoia River Basin, Western Kenya: International Journal of Disaster Management and Risk Reduction ISSN 1992 – 2744 Vol. 1, pp.45 54 ©CDMHA, Masinde Muliro University of Science & Technology.

5.2 Previous Publications

1. Waweru S. G and **Masibayi E. M.** 2009. Forest fire disaster management in Kenya. Environmental Fires Risk Reduction. Proceedings of the Workshop on Environmental Fires pp 9 – 15 June 2009, Masinde Muliro University of Science and Technology, Kakamega, Kenya.
2. **Masibayi E.** and Mutua F. 1994: River Flow Modeling for River Nzoia. (Presented in the Second National Workshop on Meteorological Research Applications and Services 5-9 December 1994 Nairobi, Kenya)

6. CONFERENCE AND WORKSHOP PROCEEDING PAPERS

1. Use of GIS for identification of expansive soils in civil engineering infrastructure development. Bemedette W. Sabuni, Sibilike K. Makhanu, Richard Onchiri and Edward Masibayi. PROCEEDINGS of the conference on Expanding Theoretical and Applied Roles of GIS in Dynamic Global Environment. Masinde Muliro University of Science and Technology. ISBN 978 - 9966 - 096 - 54 - 8.

2. Charles K. Kigen, Francis Muyekho, **Edward N. Masibayi**, and Stanley Makindi, (2016). Spatial assessment of climate-based rangeland vegetation variability in Samburu and Marsabit Counties. Mainstreaming Sustainable Land Management in Agro-Pastoral Production Systems of Kenya Project Conference 1st - 4th June, 2016 at the Sentrim Elementaita, Kenya

7. WORKSHOPS, CONFERENCES SEMINARS, AND COURSES ATTENDED

7.1 Workshops, Conferences Seminars, and Courses Attended Since Last Promotion

1. The Finance Management and Procurement training for Non-Finance Managers. Held on 11th to 13th March 2020 at Kisumu Hotel.
2. Quality Management Systems Documentation & Risk Management Training based on 9001: 2015 & 31000: 2009 held at Masinde Muliro University of Science and Technology, Kakamega, Kenya on 3rd – 5th & 14th – 16th November 2018.
3. The First Pan African Research Congress hosted by Masinde Muliro University of Science and Technology on 18th – 21st June 2018 at the Grand Royal Swiss Hotel, Kisumu, Kenya. Theme: Harnessing Research Output for Sustainable Development.
4. A training on Strategic Leadership and Management of Higher Education Institutions conducted by the School of Business and Economics (SOBE) at MMUST between 26th and 28th March 2018.
5. Discipline Management and Industrial Relations Training Programme for MMUST held on 1st to 4th March, 2016 at the Main Catering Unit, MMUST, Kakamega, Kenya.
6. Performance Contracting Awareness Session held at Masinde Muliro University of Science and Technology on Monday 9th November 2015.
7. The International Conference on 'Expanding Theoretical and Applied Roles of GIS in a Dynamic Global Environment' held at Masinde Muliro University of Science and Technology, Kakamega, Kenya on 13th – 14th August 2015
8. The 2nd National Symposium on Disaster Risk Reduction in Kenya held at The Spa Resort, Lake Bogoria, Kenya from 13th – 15th October 2014.
9. Workshop on applied use of observation data in addressing Reducing Emissions from Deforestation and Forest Degradation (REDD+) Monitoring, Reporting & Verification (MRV) 12th to 14th June 2013 at Regional Centre for Mapping of Resources for Development, Nairobi, Kenya.
10. A training workshop on Koha Library Management System held between 22nd January to 11th February 2013 at Masinde Muliro University of Science and Technology.

7.1 Workshops, Conferences Seminars, And Courses Attended Since Last Promotion

1. Workshop on GIS Flood Tool for Mapping extent of Inundation held at Regional Centre for Mapping of Resources for Development (RCMRD), Ruaraka, Nairobi, Kenya presented on 1st September 2010.
2. Recognized for valuable contribution and participation in the Fire Risk Mitigation and Preparedness Workshops held at Masinde Muliro University of Science and Technology from 24th June 2009 – 26th June 2009.
3. A two-week course in Disaster Management conducted by the African Medical and Research Foundation (AMREF) at the AMREF International Training Centre Nairobi, Kenya from 19th to 30th November to December 2007.
4. Attended the 6th EUMETSAT Satellite Application Course ESAC-VI-E held from 20th – 31st August 2007.
5. GIS and Hydrologic Modeling in Support of Water Resources Management organized by USGS FEWS NET Kagali, Rwanda, 17th to 22nd July 2006.
6. Data Processing and Management held at IGAD Climate Prediction and Applications Centre (ICPAC), Nairobi Kenya organized within the framework of WMO/ICPAC Data Rescue Project, 8th to 12th May 2006.
7. Report Writing Seminar at Kenya Institute of Administration (KIA), Nairobi, Kenya, 19th - 23rd July 2004.
8. Training of Trainers' (TOT) course at Kenya Institute of Administration (KIA), Nairobi, Kenya, 17th to 28th May 2004.
9. Training of Trainers' (TOT) on ArcView GIS 3.2a at the Regional Centre for Mapping of Resources for Development (RCMRD)-Nairobi, 20th to 24th January 2003.
10. Geographical Information Systems (GIS) in Water and Environmental Management training workshop held at the Institute for Meteorological Training and Research (IMTR), Nairobi, 10th to 14th September 2001.
11. International Post Graduate Course in Hydrometeorology held at Regional Meteorological Training Centre from 9th November to the 15th December 1997 organized by World Meteorological Organization (WMO), Ministries of Foreign Affairs and Transport Meteorological Service, Israel.
12. HYDROM Workshop held at the Institute for Meteorological Training and Research, Nairobi, 16th to 20th May 1994.

13. HYDATA Workshop held at the Institute for Meteorological Training and Research, Nairobi, 21st to 25th February 1994.
14. Workshop on Applicability of Environmental Physics and Meteorology in Africa, Nairobi organized by the Society of African Physists and Mathematicians (SAPAM), 16th to 20th August 1993.
15. A course of instruction in Management Induction Course for University Graduates at the Department of Staff Training, Ministry of public works, Nairobi, 21st to 24th April 1992.
16. Operational Training Course (O.T.C) at the Institute for Meteorological Training and Research Nairobi, February to August 1991.
18. National Youth Service (Pre-University Training Programme), September to December, 1987.

8. **PROGRAMME DEVELOPMENT, UNIVERSITY TEACHING & RESEARCH SUPERVISION, AND EXAMINATION**

8.1 **PROGRAMME DEVELOPMENT**

I have developed the following programmes:

2018: I developed M.Sc. in GIS and Remote sensing

2016: I developed B.Sc. in Geospatial information science.

2011: Masibayi E., S.B.B. Oteng'i, and Prof. Ininda of University of Nairobi Developed M.Sc. Programme in Climate Change.

8.2 **UNIVERSITY TEACHING**

I teach the following courses as indicated under each programme below.

A. Ph.D. in Disaster Preparedness & Engineering Management

- a) DPE 904: Computer Applications and Modeling in Disaster Management
- b) DPE 906: Remote Sensing & GIS in Disaster Management

B. MSc. in Disaster Preparedness & Engineering Management

- a) DPE 804: GIS & ICT in Disaster Management
- b) DPE 806: Prediction, Monitoring & Management of Disaster Management

C. MSc. in Climate Change & Adaptation

- a) DPE 804: GIS & ICT in Disaster Management
- b) DPM 803: Climate Change & Water Resources
- c) DPM 804: Climate Modeling

D. MSc. in GIS & Remote Sensing

- a) DPG 804: GIS
- b) DPG 803: GIS Database & Programming
- c) DPM 809: Advanced Spatial Analysis & Modeling
- d) DPG 812E: Digital Elevation Models
- e) DPG 813E: Geostatistics

E. BSc. in Disaster Preparedness & Environmental Technology

- a) DPE 305: Applied Hydrology

- b) DPE 306: Environmental Modeling
- c) DPE 307: GIS I
- d) DPE 309: Simulation & Modeling
- e) DPE 404E: GIS II

F. BSc. in Geospatial Information Science

- a) DPG 205: GIS I
- b) DPG 209: Spatial Statistics
- c) DPG 300: Numerical Methods
- d) DPG 307: GIS II
- e) DPE 309: Simulation & Modeling
- f) DPG 310: Spatial Analysis & Modeling
- g) DPG 401: Applications of Remote Sensing & GIS in Disaster Management

8.3 RESEARCH SUPERVISION

8.3.1 PhD Theses

Completed and graduated since the last promotion

1. Charles Kigen (2019). Title: Modeling the impacts of climate on spatial and temporal distribution of rangeland vegetation in Kenya. Completed and graduating in December, 2019.
2. Wekulo Saidi Fwamba (2018): Title: Soil erosion risk assessment along Nandi escarpment using GIS - Kakamega County, Kenya. Completed and graduated in December, 2018.
3. Philip Ndegwa, 2016 Title: Index Based Drought Monitoring and Forecasting in Eastern Arid and Semi-Arid Kenya. Completed and graduated in 2016.
4. Waweru G. S. (2016): Evaluation of factors leading to structural failure in flexible pavements of class "A" roads in Kenya. Completed and graduated in 2016.
5. Moses Akali, (2015) Title: Land Use Change and Sediment Yield in River Nzoia Basin, Kenya. Completed and graduated 2015.

In progress

1. Nganyi Walter (2019): evaluation of influence of synoptic systems on rainfall variability in Kenya lake basin highlands West of Rift valley. (Proposal).
2. Otenyo Philip (2019): Effects of urbanization on sediment load in the nearby rivers, sewerage system efficiency and urban flooding in Kakamega and Bungoma towns. (Proposal)

8.3.2 MSc Theses

Completed and graduated since the last promotion

1. James Odiero (2019): Simulation of rainfall surface runoff – water quality effects on surface water bodies in mid-block of Yala. Completed and will be graduating next month (December).

2. Joseck Joab Maloba, (2016): Effects of increased land use changes on runoff and sediment yield in the upper river Nzoia. Completed and graduated in 2016.

In progress

1. Henry Kakwana (2020): Impact of Spatial Temporal Land use/Land cover Change on Maize Production in Likuyani sub county, Kakamege.
2. Eng. Maurice Marango (2020): GIS Based Road Network Modeling for ease of Congestion in Urban Areas: Case study of Eldoret Municipality, Kenya.
3. Steven Ogallo (2015): Community vulnerability and flood risk management in lower Gucha-Migori basin, Kenya.

8.4 EXAMINATION

I have internally examined the following post graduate students.

8.4.1 PhD Theses

1. David Gikungu Irungu, (2016): Disaster management and sustainable Development entitled "Dynamic Risk Model for Rift Valley Fever Outbreaks on Climatic Data in Kenya.
2. Enock Sabuni Wanyonyi, (2016): Title: Hydrologic Modeling for Management of Yala River Flood flows, Western Kenya.

8.4.2 MSc Theses

Since the last promotion

1. Joseck Joab Maloba, (2016): Effects of increased land use changes on runoff and sediment yield in the upper river Nzoia

Previous

1. Joseph M. Panyako, (2011): Effects of controlled loading on accident on prevalence among transit petroleum road tankers in Kenya.

9. PROJECTS AND CONSULTANCIES

Period	Organization and position including contact references	Country	Brief of activities performed
			2015
2020 - 2021	GIS expert, MMUST	Kenya	Towards COVID-19 containment: Geo-app Surveillance of SARS-CoV-2 and Effectiveness of Home-

			Based Care in Western Region of Kenya
2015	Lead Consultant, Bungoma County	Kenya	Resource Mapping for Bungoma County
2014	Consultant, Kakamega County	Kenya	Mineral Mapping for Kakamega County
2008 - 2011	Consultant, Western Kenya Community Driven Development & Flood (WKCDD & FM),	Kenya	Flood mitigation
2007	Consultant, WFP/ICPAC project	Burundi	Development of Flood Risk Scenarios for Burundi

10. UNIVERSITY DUTIES AND OTHER RESPONSIBILITIES TO THE SOCIETY

1. Chairman, Department of Disaster Preparedness and Engineering Management, December 2015-present
2. Chairman, Board of Management, Namusasi Secondary School.
3. Member, Kakamega County Seasonal Meteorological Weather Forecasting and outlook.
4. Member of University Organizing Committee for African International Research Congress on Knowledge Generation and Dissemination.
5. Organization of International Conference on 'Expanding Theoretical and Applied Roles of GIS in a Dynamic Global Environment' held at Masinde Muliro University of Science and Technology, Kakamega, Kenya on 13th – 14th August 2015.

11. MEMBERSHIP TO PROFESSIONAL BODIES

1. Member of the Kenya Meteorological Society (KMS)
2. Member of Association of Disaster Management and Conflict Resolution of Kenya (ADMCRK).

REFEREES

1. Prof. Francis Mutua, PhD
Department of Meteorology,
University of Nairobi
P.O. Box 30197,
Nairobi, Kenya.

2. Prof. S. B. B. Oteng'i, PhD
Department of Disaster Preparedness & Engineering Management
MMUST, P.O. Box 190,
Kakamega, Kenya.