

CV Dr. (Eng). JAMES MESSO RAUDE

Name of Staff: Dr. (Eng). James M. Raude, PhD
Profession: Water Resources and Environmental Engineering
Position held: Senior Lecturer and HOD, Soil, Water and Environment Engineering Department (SWEED),
Institution: Jomo Kenyatta University of Agriculture and Technology (JKUAT)
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A. ACADEMIC AND PROFESSIONAL QUALIFICATIONS

7/2007- 4/2013	Egerton University, Egerton – Kenya	PhD- <i>Hydraulic performance of horizontal subsurface flow constructed wetland system in treatment of greywater: The case of peri-urban areas in Nakuru Municipality, Kenya</i>
4/2007-7/2007	Hebrew University of Jerusalem – Israel	Post-Graduate Diploma (Ground water exploration, water resources exploitation and conservation)
8/2003-7/2006	Egerton University, Egerton – Kenya	MSc. Agricultural Engineering (<i>Soil & Water Engineering</i>)
8/1999-8/2002	Egerton University, Egerton – Kenya	BSc. Agricultural Engineering

Dr. (Eng). James M. Raude lecturers in the Department of Soil, Water and Environmental Engineering (SWEED), School of Biosystems and Environmental Engineering (SOBEE), College of Engineering and Technology (COETEC), Jomo Kenyatta University of Agriculture and Technology (JKUAT)-Kenya. He received a Ph.D Degree from Egerton University – Kenya on 26th July 2013; a Post Graduate Diploma in Groundwater Exploration and Water Resources: Exploitation and Conservation from Hebrew University of Jerusalem-Israel, a Bachelors Degree and Master of Science Degree in Agricultural Engineering from Egerton University. He holds several certificates in Sustainable and ecological sanitation from UMB, Norway, UNESCO-IHE, and University of Jyväskylä, Finland. He is a Water Resources and Environmental Engineering expert, a Professional Engineer, a Registered Lead Expert in Environmental Impact Assessment (EIA) and a member of IEK (Institution of Engineers of Kenya).

B. SHORT COURSES

Dr. (Eng). J.M. Raude has additional skills acquired through specialized training that includes: rainwater harvesting and development; Groundwater Exploration and Water Resources: Exploitation and Conservation; Environmental Impact Assessment; Statistics in Applied Climatology; Sustainable sanitation - decentralized, natural and ecological wastewater

treatment; Decentralized Water supply and Sanitation; Safe water Supply and Sanitation and Water productivity reporting with FAO WaPOR Data base.

C. TEACHING & RESEARCH DUTIES

Dr. (Eng). J.M. Raude teaches at JKUAT the following units and also conducts research in the same field: Environmental Management, Environmental Impact Assessment; Environmental Monitoring; Rainwater Harvesting and Development; Water Resources Development; Irrigation and drainage System Design and Management, Drainage Engineering, Hydrology; Soil and water conservation; Reclamation of Arid and Semi-arid; Engineers in Society and Introduction to Farm Power. Dr. Raude teaches both undergraduate and post-graduate students. Additionally, Dr. Raude supervises post-graduate students.

D. PROFESSIONAL EXPERIENCE

Date from - Date to	Company	Position	Description
1 st June 2018-May 2019	JICA-Japanese International Cooperation agency	Principal Investigator	Briquettes making from sanitized human faeces
Nov 2017- July 2018	Promoting Ecological Land Use Management(PELUM	Principal Investigator	Developing an animal feed pallet making machine for use in rural areas,
March 2018 –March - 2020 -	SNV, Netherlands	Co - Investigator	Smart Water for Agriculture Project-
April 2018- March 2019	University of Manchester	Co- Investigator	Water Stewardship Portal (WSP) for the Tana Basin-Kenya
19 th -22 nd September 2017	Promoting Ecological Land Use Management(PELUM)	Lead facilitator	Training extension officers in PELUM Kenya member organisations in Building Climate Resilient Communities through Water Conservation and Sustainable Renewable Energy

Date from - Date to	Company	Position	Description
2015 - 2017	Water Research and Resources Center, Nairobi City Water and sanitation company & JKUAT	CO- Investigator	Quantifying sedimentation rates and potential sources in Ruiru dam using vibro-coring and field assessment techniques. Amount: KES. 8,016,822.50. Financed by Nairobi City Water and Sewerage Company (NCWSC).
2013 - 2016	JKUAT, Nairobi City Water and Sanitation Company LTD	Co- Investigator	Reservoir Survey Using Multi Frequency Acoustic Profiling System For Sustainable Watershed Management and Development. Amount: KES. 4,500,000(4.5 million). Financed by: Jomo Kenyatta University of Agriculture and Technology, Through, Deputy Vice Chancellor (Research, Production and Extension Division).
2012 - 2015	Jomo Kenyatta University of Agriculture & Technology, Egerton University & Ministry of Agriculture	Co - Investigator	Sustainable Development of Water Resources, Water Supply, Nutrition Security and Environmental Sanitation. Case of Njoro River Water Catchment, Njoro District. Amount: KES. 6,000,000(6 million). Financed by: National Council for Science and Technology (NCST), ST and I Grant.
03/2015 – 06/2015	SECAEC	Monitoring and Evaluation Expert	Consultancy Services for Project Evaluation of the Horticulture and Food Security Project. Client: Solidaridad Eastern and Central Africa Expertise Centre (SECAEC) Project Evaluation. Financed by the Netherlands government through its Embassy in Kenya.
2015 - 2016	Wajir County Government	Design Engineer and Team Leader	Design of four water pans measuring 54,000m ³ in four sub-counties of Wajir County- Total cost: KES. 230m.

Date from - Date to	Company	Position	Description
Octo2017 -Feb 2018	Coast Water Services Board	Lead Expert and Team Leader	Environmental Impact Assessment of asbestos Roofing Materials removal, transportation and disposal from Bura Water Treatment plant to Gatuanyaga, Kiambu County
10/2014 - 12/2014	SNV Netherlands Development Organization	Team Leader	Capacity building for wash business innovations and public private partnership (PPP) modelling.
Aug 2017- Feb 2018	Health Advantage (K) LTD	Lead Expert	Environmental Impact Assessment of the proposed Development of an Incinerator in Mbaruk, Nakuru county
02/2014 – 05/2014	Geothermal Development Company	Lead Expert	Updating the Enterprise Risk Register for GDC.
	Wajir Conty Government	Team Leader	Design of rural water supply system for Wajir County-Cost KES. 25M
09/2014 – 12/2014	TEFA Logistics Limited	Lead Expert	Lokipetot Food Security Project. Feasibility study and modernization of Lokipetot Irrigation Scheme, Turkana Central sub-county, Turkana County.
02/2014 - 2016	ALDEF	Advisor	Feasibility study and design of Jai jai Pasture. Irrigation scheme and Irrigation advisor till 2016, Tarbaj sub- county, Wajir County.
05/2014 – 08/2014	ChildFund	Design Engineer	Nagis Irrigatin Scheme; Loima, Turkana County.
10/2014 – 12/2014	JICA	EIA Lead Expert	Mangudho Irrigation Scheme; Ganze, Kilifi County (SIDEMAN-SAL project).
06/2014- 08/2014	JICA	EAI Lead Expert	Challa Tuhire Irrigation Scheme; Taita Taveta County (SIDEMAN-SAL project).
06/2014 – 08/2014	USADF	Team Leader and Design Expert	Lokipetot Irrigation Scheme, Lokipetot-Turkana County.

Date from - Date to	Company	Position	Description
2013	Geothermal Development Company (GDC)	Team leader and EIA lead expert	Proposed Geothermal Drilling Materials Storage Warehouse at GDC Kabarak Farm, Nakuru.
2013	Individual consultant	EIA lead expert	Environmental Impact Assessment Lake Turkana Fishing Project, Turkana North, Sponsored by Oxfam, (2013)
2013	Burler	EIA lead expert	Burler training and Milling School in Ruiru, Kiambu County, Environmental Impact Assessment.
2013	Individual consultant	EIA lead expert	Syokimau Catholic Church, Machakos County, Environmental Impact Assessment (2013); Catholic Church
2012	Ministry of Agriculture/Ministry of Livestock development	EIA lead expert	NALEP Project.
2012	Ministry of Agriculture	EIA Lead Expert	Lobei Waterpan-Loima District, Turkana County, Environmental Impact Assessment Ministry of Agriculture.
2012	Natipnal Agriculture and Livestock Program((NALEP)/ Ministry of Agriculture	EIA lead expert and Team leader	Integrated Food Security Project in Kakuma, Turkana West District, Turkana County, And Environmental Impact Assessment.
2011	World Vision-Kenya	Advisor to the Resident Engineer	Koptiro Irrigation Scheme. Construction of Koputiro Irrigation Scheme in Kainuk Division, Turkana South District. Financed byWorld Vision, Kainuk ADP.
2010	Solidarites International	Lead Expert	Feasibility study for the rehabilitation of Irrigation Schemes in Kerio Division, Turkana Central.
2010	First hand Commercial Agencied and, National Water , Conservation and Pipeline	Resident Engineer	Construction of Kapus Waterpan, Loima Division, Loima District, Turkana County, Financed by National Water Conservation and Pipeline.

Date from - Date to	Company	Position	Description
2009 - 2011	Design Engineer	Resident Engineer	Kangalita Irrigation Scheme. Design, and supervision of establishment of Kangalita Irrigation Scheme in Loima District of Turkana County. Financed by FAO.

E. RESEARCH PROJECTS AND CONSULTANCIES

(i) Funded Research

1. 2015-2018

Funding body: Nairobi City Water and Sewerage Company (NCWSC)

Title: Quantifying sedimentation rates and potential sources in Ruiru dam using vibro-coring and field assessment techniques

Amount: KES. 8,016,822.50

2. 2012-2015: **Funding Body:** National Council for Science and Technology (NCST), ST and I Grant.

Title: *Sustainable Development of Water Resources, Water Supply, Nutrition Security and Environmental Sanitation. Case of Njoro River Water Catchment, Njoro District.*

Dr. Eng. James M. Raude is a co-investigator, in collaboration with researchers from Egerton University and Ministry of Agriculture.

Amount: KES. 6,000,000(6 million)

3. 2013-2016: **Funding Body:** Jomo Kenyatta University of Agriculture and Technology, Through, Deputy Vice Chancellor (Research, Production and Extension Division)

Title: *Reservoir Survey Using Multi Frequency Acoustic Profiling System For Sustainable Watershed Management and Development.*

Amount: KES. 4,500,000(4.5 million)

4. 2006-2010: **Funding Body:** European Commission through Egerton University and Nakuru Municipal Council.

Title: Resource Oriented Sanitation Concepts for Peri-Urban areas of Africa (ROSA).

<http://rosa.boku.ac.at/>

(ii) Consultancies

1. Design of rural water supply system for Wajir County-Cost KES. 25M

2. Design of four water pans measuring 54,000m³ in four sub-counties of Wajir County-
Total cost: KES. 230m. 2015/2016 financial year

3. Jomo Kenyatta University of Agriculture and Technology (JKUAT) through its Water Research and Resource Center (WARREC) in collaboration with Water and Sanitation for the Urban Poor (WSUP) plans training on WASH on 9th -13th November, 2015.
4. Consultancy Services for Project Evaluation of the Horticulture and Food Security Project (HFSP). **Year:** March 2015 – June 2015; **Location:** Kenya
Client: Solidaridad Eastern and Central Africa Expertise Centre (SECAEC)
Main project features: End of Project Evaluation
Positions held: Monitoring and Evaluation Expert
Activities performed: Solidaridad Eastern and Central Africa Expertise Centre (SECAEC) in partnership with SNV and HIVOS have been implementing the Horticulture and Food security Project financed by the Netherlands government through its Embassy in Kenya.
5. **SNV Netherlands Development Organization (October-December, 2014):** Capacity building for wash business innovations and public private partnership (PPP) modeling
6. **Geothermal Development Company –Kenya (Feb-May 2014):** Updating the Enterprise Risk Register for GDC
7. **Lokipetot Food Security Project (September – December 2014):** Feasibility study and modernization of Lokipetot Irrigation Scheme, Turkana Central sub-county, Turkana County.
8. **ALDEF – Kenya** - February 2014 – 2016: Feasibility study and design of Jai jai Pasture Irrigation scheme and Irrigation advisor till 2016, Tarbaj sub-county, Wajir County.
9. **Solidarites International- 2010:** Feasibility study for the rehabilitation of Irrigation Schemes in Kerio Division, Turkana Central.
10. **Resident Engineer – 2010:** Construction of Kapus Waterpan, Loima Division, Loima District, Turkana County, sponsored by National Water Conservation and Pipeline.
11. **Kangalita Irrigation Scheme – 2009-2011:** Design, and supervision (Resident Engineer) of establishment of Kangalita Irrigation Scheme in Loima District of Turkana County, sponsored by FAO.
12. **Koptiro Irrigation Scheme – 2011:** Advisor to the resident Engineer for the construction of Koputiro Irrigation Scheme in Kainuk Division, Turkana South District sponsored by World Vision, Kainuk ADP.
13. **Environmental Impact Assessment Assignments**
 - (i) Asbestos removal and transportation to Kiambu, **Coast Water Services Board** (2018)
 - (ii) Development and Installation of an Incinerator , **Health Advantage Kenya LTD** (2018)
 - (iii) Lake Turkana Fishing Project, Turkana North, Sponsored by **Oxfam**, (2013)
 - (iv) Syokimau Catholic Church, Machakos County, (2013); **Catholic Church**
 - (v) Lobei waterpan-Loima District, Turkana County, **Ministry of Agriculture**, (2012)

- (vi) Integrated Food Security Project in Kakuma, Turkana West District, Turkana County, (2012)
- (vii) Burler training and Milling School in Ruiru, Kiambu County, (2013); **Burler** Ministry of Agriculture/Ministry of Livestock development (**NALEP Project**), (2012)
- (viii) Proposed Geothermal Drilling Materials Storage Warehouse at GDC Kabarak Farm, Nakuru County. Proponent: **Geothermal Development Company (GDC – 2013)**.
- (ix) Nagis Irrigation Scheme; Loima, Turkana County (May –August, 2014) – **ChildFund**. Lodwar Region
- (x) Mangudho Irrigation Scheme; Ganze, Kilifi County (October-December, 2014). **JICA** (SIDEMAN-SAL project).
- (xi) Challa Tuhire Irrigation Scheme; Taita Taveta County October-December, 2014). **JICA** (SIDEMAN-SAL project).
- (xii) Lokipetot Irrigation Scheme, Lokipetot-Turkana County (June-August, 2014); **USADF**

F. PUBLICATIONS

(i) Books and Book Chapters

1. **Raude, J. M**; Mutua, B. M. and Onyando, J.M (2011). *Surface Runoff and Soil Loss under varying Rainfall Intensity in Selected Land Use Practices from River Njoro Catchment-Kenya*: A **Book** published by LAP Lambert Academic Publishing. ISBN 978-3-8443-0356-8. Printed in the UK. pp 1-78.
<https://www.lap-publishing.com/catalog/details/store/gb/book/978-3-8443-0356-8>
2. Wambua, R; Mutua B.M and **Raude, J. M** (2015). Stochastic Drought Forecasting Exploration for Water Resources Management in the Upper Tana River Basin, Kenya in the *Handbook of Research on Computational Simulation and Modeling in Engineering*. A Book Chapter in the *Handbook of Research on Computational Simulation and Modeling in Engineering*, Chapter 17: 512-546. DOI: 10.4018/978-1-4666-8823-0.ch0 17.
<URL:www.igi-global.com/book/handbook-research-computational-simulation-modeling/129612>
3. Austin Otieno, George Karuku, and **James Raude (2017)**. Constructed Wetlands For Wastewater Management
4. Patrick Namu, **James Raude**, Benedict Mutua (**2017**). Optimizing Hydraulic Design Parameters for Irrigation Settling Basin

(ii) Selected papers

1. Maina, C. W., Sang, J. K., **Raude, J. M.**, & Mutua, B. M. (2019). Geochronological and spatial distribution of heavy metal contamination in sediment from Lake Naivasha, Kenya. *Journal of Radiation Research and Applied Sciences*, 12(1), 37-54.

2. Mary Christine Chepchumba; **James M. Raude** and Joseph K. Sang (2019). Geospatial delineation and mapping of groundwater potential in Embu County, Kenya. <http://www.acquesotteranee.net/index.php/acque/article/view/369>; <https://doi.org/10.7343/as-2019-369>
3. de Sousa, L. S., Wambua, R. M., **Raude, J. M.**, & Mutua, B. M. (2019). Assessment of Water Flow and Sedimentation Processes in Irrigation Schemes for Decision-Support Tool Development: A Case Review for the Chókwè Irrigation Scheme, Mozambique. *AgriEngineering*, 1(1), 100-118.
4. Maina, C. W., Sang, J. K., Mutua, B. M., & **Raude, J. M.** (2018). Bathymetric survey of Lake Naivasha and its satellite Lake Oloiden in Kenya; using acoustic profiling system. *Lakes & Reservoirs: Research & Management*, 23(4), 324-332.
5. Wambua, R. M., Mutua, B. M., & **Raude, J. M.** (2018). Detection of Spatial, Temporal and Trend of Meteorological Drought Using Standardized Precipitation Index (SPI) and Effective Drought Index (EDI) in the Upper Tana River Basin, Kenya. *Open Journal of Modern Hydrology*, 8(03), 83.
6. Muema, F., Home, P., & **Raude, J.** (2018). Application of Benchmarking and Principal Component Analysis in Measuring Performance of Public Irrigation Schemes in Kenya. *Agriculture*, 8(10), 162.
7. **Raude, J.M.**, Mutua, B.M and Kamau, D.N. (2018). Simulation of the Hydraulics and Treatment Performance of Horizontal Subsurface Flow Constructed Wetland Treating Greywater. *International Journal of Ecotoxicology and Ecobiology*, 3(2), 42-50.
8. Rendilicha, H. G., Home, P. G., & **Raude, J. M.** (2018). A Preliminary Review of Groundwater Vulnerability Assessment and Pollution Status in Kenya. *Acque Sotteranee-Italian Journal of Groundwater*, 7(2), 7-13.
9. Otieno, A., Karuku, G., **Raude, J.**, & Koech, O. (2018). Accumulation of Nitrogen And Phosphorous By Vetiver Grass (*Chrysopogon Zizanioides*) In A Model Constructed Wetland Treatment System For Polishing Municipal Wastewater. *Victoria*, 22, 23.
10. Maina, C. W., Sang, J. K., Mutua, B. M., & **Raude, J. M.** (2018). A review of radiometric analysis on soil erosion and deposition studies in Africa. *Geochronometria*, 45(1), 10-19.
11. Macharia, M. M., & **Raude, J. M.** (2017). Runoff Response to Climate Variability: An Analysis of Thika River Basin in Kenya Using Hydrological Simulation Model (Hysim). *International Journal of Hydrology Research*, 2(1), 1-12.
12. Wambua, R. M., Mutua, B. M., & **Raude, J. M.** (2017). Analysis of spatial and temporal drought variability in a tropical river basin using Palmer Drought Severity Index (PDSI). *International Journal of Water Resources and Environmental Engineering*, 9(7), 178-190.
13. Sang, J. K., **Raude, J. M.**, Mati, B. M., Mutwiwa, U. N., & Ochieng, F. (2017). Dual Echo Sounder Bathymetric Survey for Enhanced Management of Ruiru Reservoir, Kenya. *Journal of Sustainable Research in Engineering*, 3(4), 113-118.
14. Otieno, A. O., Karuku, G. N., **Raude, J. M.**, & Koech, O. (2017). Effectiveness of the Horizontal, Vertical and Hybrid Subsurface Flow Constructed Wetland Systems in

Polishing Municipal Wastewater. *Environmental Management and Sustainable Development*, 6(2), 158-173.

15. Wambua, R. M., Mutua, B. M., & **Raude, J. M. (2017)**. Analysis of spatial and temporal drought variability in a tropical river basin using Palmer Drought Severity Index (PDSI). *International Journal of Water Resources and Environmental Engineering*, 9(8), 178-190.
16. Wambua, R. M., Mutua, B. M. and Raude, J. M. **(2016)**. Prediction of Missing Hydro-Meteorological Data Series using Artificial Neural Networks (ANN) for Upper Tana River basin, Kenya, *American Journal of Water Resources*, 4(2): 35-43.
17. Maloi, S. K., Sang, J. K., **Raude, J. M.**, Mutwiwa, U. N., Mati, B. M., & Maina, C. W. **(2016)**. Assessment of Sedimentation Status of Ruiru Reservoir, Central Kenya. *American Journal of Water Resources*, 4(4), 77-82.
18. Raphael M. Wambua, **Benedict M. Mutua**, and James M. Raude. **(2015)**. Hydrological Drought Frequency Estimation using Stream Flow Drought Index and Modified Gumbel Method in upper Tana River Basin, *International Journal of Current Research and Review*, 7(22):42-51.
19. Raphael M. Wambua, **Benedict M. Mutua**, and James M. Raude **(2015)**. Spatio-temporal Drought Characterization for the Upper Tana River Basin, Kenya Using Standardized Precipitation Index (SPI). *World Journal of Environmental Engineering*, 3(4): 111-120. DOI: 10.12691/wjee-3-4-2.
20. Imbenzi J. Serede, Benedict M. Mutua and **James M. Raude (2015)**. Calibration of Channel Roughness Coefficient for Thiba Main Canal Reach in Mwea Irrigation Scheme, Kenya
21. Raphael M. Wambua, **Benedict M. Mutua** and James M. Raude. **(2015)**. Detection of drought-risk areas using trends of spatial and temporal drought characteristics in upper Tana River basin, Kenya. Paper submitted for publication in *the Journal of Hydrological Sciences*.
22. Imbezi, J. Serende, Benedict M. Mutua and **James M. Raude (2014)**. A review of hydraulic analysis of irrigation canals using HEC-RAS model: A case study of Mwea Irrigation Scheme, Kenya. Hydrology, Science Publishing Group Doi:10.11648/j.hyd.20140201.11
23. Raphael M. Wambua, Benedict M. Mutua and **James M. Raude (2014)**. Drought Indices Assessment for Sustainable Water Resources Management-a Case Review for upper Tana River Basin, Kenya. *International Journal of Engineering Research & Technology (IJERT)* ISSN: 2278-0181, Vol. 3 Issue 10. ISSN: 2278-0181
24. Wambua, R. M., Mutua, B. M., & **Raude, J. M. (2014)**. Performance of Standardized Precipitation Index (SPI) and Effective Drought Index (EDI) in Drought forecasting using Artificial Neural Networks (ANNs) for upper Tana River basin, Kenya. *International Journal of Engineering Research & Technology*, 3(11), 547-556.
25. Raphael M. Wambua, Benedict M. Mutua and **James M. Raude (2014)**. Drought Forecasting Using Indices and Artificial Neural Networks for Upper Tana River Basin,

Kenya-A Review Concept. The International Open Access Journal of Civil & Environmental Engineering , ISSN: 2165-784X

26. Mwaura, J., Tura, I., and **Raude, J. (2013)**. Assessment of Adaptation Strategies and Knowledge on Climate Change among Pastoralists and Agro-Pastoralists in Fafi and Dadaab Ecosystems, SciTechnol Journal Geoinformatics and Geostatistics: An Overview. ISSN: 2327-4581
27. **Raude, J.M.**, Mutua, B.M. and Kamau, D.N. **(2012)**. Design of Pilot Scale Horizontal Subsurface Flow Constructed Wetland System Treating Greywater. *International Journal of Current Research and Review*, 4(2): 92-104.
28. **Raude, J. M.**, Mutua, B. M., Chemelil, M. C., & Sleytr, K. **(2009)**. Characterization of greywater from urban and peri-urban areas of Nakuru municipality, Kenya. In *Water, sanitation and hygiene: sustainable development and multisectoral approaches. Proceedings of the 34th WEDC International Conference, United Nations Conference Centre, Addis Ababa, Ethiopia, 18-22 May 2009* (pp. 609-614). Water, Engineering and Development Centre (WEDC) Loughborough University of Technology.
29. Maina, C.W., Mutua, B.M., Oduor, S.O. and **Raude, J.M. (2010)**. Water Quality and Self-Purification Ability of River Njoro, Kenya. *Eger. J. Scie. Technol*, 10: 123-138.

G. CONFERENCE PRESENTATIONS

1. **Raude, J. M & Maina C. W. (2018)**. Faecal Sludge Briquettes: Turning Human Waste into Energy. http://www.huussi.net/wp-content/uploads/2018/08/Raude_J.M_DT2018.pdf
2. **Raude, J.M. (2016)**.The Kenya Water Week (20th -25th November 2016) at KICC-Theme: Title: Innovative and Climate Smart Irrigation, Water storage and Reclamation technologies.
3. J.M. **Raude**, B. M. Mutua, and Maina, C. W. (2015). Functionality of Dry Sanitation Systems in Nakuru, Kenya. 5th International Dry Toilet Conference 2015- Tampere, Finland.
<http://www.huussi.net/wp-content/uploads/2014/10/DT2015-Abstract-Book-loQ.pdf>
4. Raphael, M. Wambua, Benedict M. Mutua, and **James M. Raude. (2015)**. Drought forecasting under climate change scenarios using artificial neural networks for sustainable water resources management in upper Tana River basin, Kenya. Paper presented at International Conference held in Dresden NEXUS Conference, United Nation University, DNC2015 on 25th to 27th March 2015.
5. **Raude, J.M.**, Maina, C.W. and Mutua, B.M. (2012). *Performance evaluation of ecological Sanitation Systems in Nakuru*. Paper presented during the Ecosphere Technologies EnviroSan Sanitation Solutions. Global Dry Toilet Associated of Finland. Conference held from 21st to 24th August 2012 at the Holiday Inn Hotel, Yliopistonkatu 44.
6. **Raude, J.M.**, Mutua, B.M. and Kamau, D.N. (2011). *Analysis of Treatment Dynamics of Subsurface Flow Constructed Wetlands in Treatment of Greywater*. Paper presented at the

6th Egerton University Research Week and International Conference held at the ARC Hotel, Egerton University Kenya from 21st to 23rd September 2011.

7. Muchiri E.W., **Raude J.M.** and Mutua, B.M. **(2010)**. *Pilot UDD toilets and grey water treatment systems at Crater view secondary school in Nakuru, Kenya*.
http://www.susana.org/docs_ccbk/susana_download/2-125-en-cs-rosa-uddt-craterviewsecondaryschool-susana.pdf.

H. SUPERVISION OF POST-GRADUATE STUDENTS

(i) PhD Supervision

1. Raphael M. Wambua. PhD (2016): “Drought Assessment and Forecasting Using Selected Drought Indices for Upper Tana River Basin, Kenya”. **STATUS:** 2014-2016- Graduated December, 2016. Registered at Egerton University.
2. Caroline W. Maina. “Soil Erosion and Reservoir Sedimentation Analysis for Sustainable Catchment Management”. A Case Study of Lake Naivasha and Thika Dam”.**STATUS:** Thesis writing
3. Ouedraogo Wendso Awa Agathe: “Hydrological Responses to Combined Climatic Extremes and Land Use Change: Case of Mukurumudzi and Ramisi Catchments”. **STATUS:** Thesis writing
4. Preston Akenga Chebai: “Assessment of Pharmaceutical Uptake on Food Crops Grown on Soils Amended With Wastewaters, Sewage Sludge And Urine”. **STATUS:** Data Collection.
5. Beatrice Langat: “Modelling and Optimization of Fluoride Removal from Water Using Biosorbents”. **Status** – Data Collection
6. Denis Theuri Gitundu: “Assessment and Management of Flash Floods Risk in Enkare Narok River Basin”. **Status** – Data Collection
7. Hannah Ngugi: “Development of a decision support tool for decentralized fecal sludge management options for peri-urban settlements”. **Status:** Data collection.
8. Lateiro Salvador de Sousa: “Thesis Title hydraulic and operational performances of Chókwè irrigation scheme in Mozambique, in view of Sedimentation”. **Status**-Data collection Phase

(iii) Masters Supervision

1. Imbenzi Jairus Serede, MSc. (2015). “Hydraulic Analysis of Thiba Main Canal Reach in Mwea Irrigation Scheme, Kenya”. **Status:** Graduated in December 2015. Registered at Egerton University
2. Michael Maina, MSc. (2016). Runoff Response to Climate Variability: An Analysis of Thika River Basin in Kenya. **Status:** Graduated October 2016. Registered at Pan African University, Tlemcen, Algeria

3. Austine Owuor Otieno, MSc. (2017). "Evaluating Effectiveness of Constructed Wetland Treatment System for Polishing Effluent from Gusii Wastewater Treatment Plant in Kisii, Kenya".
Status: Graduated on 22nd September 2017. Registered at University of Nairobi.
4. Patrick N. Namu, MSc. (2017). "Determination of Optimum Hydraulic Design Parameters of a Settling Basin for Discrete Particles in Irrigation Systems". **Status:** Graduated November 2017. Registered at Jomo Kenyatta University of Agriculture & Technology.
5. Stanley Maloi, MSc (2018). "Assessment of Sedimentation in Thika Dam for Sustainable Water Resource Management Using Geowep". **Status:** Graduated-November 2018. Registered at Jomo Kenyatta University of Agriculture & Technology.
6. Faith Mwema: "Comparative Performance Evaluation of Public Pumped Surface Irrigation Schemes in Kenya Using Benchmarking Process". **Status:** Graduated-November 2018. Registered at Pan Africa University, PAUISTI, Jomo Kenyatta University of Agriculture & Technology.
7. George Kiambuthi. "Comparative Analysis of Factors That Influence Consistence Use of Household Water Treatment and Storage in Northern Kenya". **Status:** Graduated-September 2018. Registered at Pan African University, Tlemcen, Algeria
8. Celestine Mbeke Kilongosi: "Effectiveness of Spate Irrigation in Optimizing Crop Yield in Ol Donyo Nyoi, Ewaso Nyiro South Drainage Basin". **STATUS:** Defended Thesis Successfully. Registered at Egerton University.
9. Chepchumba Marychristine: "Identification of Groundwater Potential Zones Based on Modified Drastic Model Using Remote Sensing and GIS in Embu County". **STATUS-** Draft Thesis Submitted.
10. Daniel M. Wambua: "Environmental And Energy Requirements For Different Production Intensities Of Nile Tilapia (*Oreochromis Niloticus*) In Recirculating Aquaculture Systems: Laboratory And Computer Simulation Studies". **Status:** Draft Thesis Submitted
11. Halake Guyo Rendilicha: "Groundwater Vulnerability Assessment to Surface Pollution: Case Study of River Njoro Sub-Catchment, Kenya". **STATUS:** Thesis writing
12. Caro Chepngeno. "Trickling Filter for Treatment of Aquaculture and Fisheries Processing Wastewater for Reuse in Agriculture". **Status:** Thesis Writing
13. Jackson Mojong' Lochokon: "Potential of Blue-Leaved Spider Bush (*Maerua Decumbens*) as a Medium for Defluoridation of Water". **STATUS:** Data collection
14. Hesborn A. Ondiba: "Characterizing the Producer Gas of a Down Draft Gasifier Stove When Using Different Agriwaste Biomass Material". **Status:** Proposal submitted awaiting approval
15. Hellen J. Sang: "Evaluation of Deficit Sub - Surface Drip Irrigation and Mulching Systems on Water Productivity: A Case of Tomato Crop in Njoro Sub County". **Status-**Data analysis

I. EXTERNALLY EXAMINED MSC AND PHD THESES

(i) PhD Thesis Examined

1. Takele Gadissa Emana, PhD. (2019). "Modelling Potential Impacts of Climate Change on the Hydrodynamics of Lakes in Central Rift Valley Basin, Ethiopia".
2. Nyakach Samuel, PhD (2018). "Evaluation of the Performance of Expanded Black Cotton Soil, as a Hydroponic Medium."
3. Beatrice Kakoi, PhD (2018). "Pollutant Removal from Water Using Plant Materials."
4. WARURU, Bernard Kariuki, PhD (2016). "Diagnostic Screening and Prevalence Assessment of Soil Stability Related Problems Using Infrared Spectroscopy in Lake Victoria Basin, Kenya".
5. Siringi Daniel Ogwoka, PhD. (2014). "Remediation and optimization of chicken processing plant wastewater treatment by electrocoagulation".

(ii) MSC Thesis Examined

1. Celestine M. Kilongosi, MSc (2019). "Effectiveness of soil Moisture Conservation Techniques in Water Productivity of Sorghum under Spate Irrigation in Ewaso Nyiro South Drainage Basin".
2. Jacinta M. Muema, MSc (2018). "The Influence of Wetlands on Stream Flow and Sediment Yield in Muranga Watershed, Muranga County".
3. Leah Amisi (2018). "Response of Event-Based Soil Hydrological Functioning to Land Use in Upper River Njoro Catchment."
4. Dorcas Ndunge Benard (2018). "Development of a Protocol for Evaluating Sand Dam Water Quality in Semi-Arid Areas: A case study of Makueni County. "
5. Steve Ngonda Matiti (2018). "Evaluation of Performance of Rainwater Harvesting Technologies for Water and Food Security: Case Study of Mwingi Central District, Kenya".
6. Kennedy Mutati, MSc (2018). "Assessment of the Influence of Sand Gradation on Site Suitability for Sand Dam: A Case Study of Kitui South, Kenya."
7. Makau, J. Mulei, Msc (2015). "Plant growth and yield of selected vegetables under alternate furrow irrigation in the ASAL areas of Eastern Kenya."
8. Cecilia Wangechi Muriuki, MSc. (2015). "Evaluation of Banana Peels, Pumice and Charcoal Potential to Adsorb Chromium Ions from Tannery Wastewater".
9. Jared Ouma Okungu, Msc. (2017). "Simulation of Water Supply And Demand in Yala Catchment".
10. Fredrick Tito Mwamati. MSc. (2017). "An Assessment of Ground Water Quality in Yatta Plateau in Kitui County, Kenya".

J. REFEREES

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