

Proposed Position: **TEAM LEADER**

Name of Staff: **Prof. (Eng). James Messo Raude**

Profession: **Agricultural Engineering (Water and Environmental Engineering)**

Date of Birth: 1966

Years with Firm: **4** Nationality: **Kenyan**

Membership in Professional Societies: **EBK (A2707); EIK; KESBAE, IEK (M.3530)**

Detailed Tasks Assigned: **Overall team leader and EIA/EA Lead Expert (2277)**

Key Qualifications

Dr. Eng. James M. Raude has over 18 years' experience in water and environment field, teaching, conducting consultancies and research. He has spent several years working in Arid and Semi-Arid areas (ASAL), namely Turkana, Mandera, Garissa, Wajir, Kilifi, Taita Taveta amongst others. In Turkana, Dr. Raude designed and supervised several projects. For instance, Kakong Waterpan, Lokapel Waterpan, design of Lokipetot Irrigation scheme and re-design of Kangelita Irrigation Scheme. More recently (February – March 2020), Dr. Raude conducted ESIA for 5 waterpan projected through a collaboration between Turkana County government and World Food Program. Dr. Raude has conducted over 50 Environmental and Social Impact Assessments (ESIA), conducted feasibility studies and designs of various water and environment related projects. Further Dr. Raude teaches Environmental Impact Assessment, Design of water Supply Systems, Rainwater Harvesting and storage, Irrigation and drainage engineering amongst other units at JKUAT. It is also worth mentioning that Dr. Raude has supervised and graduated over 10 master's students and 3 PhD students all in water and environment related thesis area. Dr. Raude has over 50 publications in referred journals.

Education

YEAR	AWARDS	Degree(s) or Diploma(s) obtained:
2013	PhD	PhD in Agricultural Engineering (Water & Environmental Engineering)
2007	Postgraduate Diploma	Post Graduate Diploma in Groundwater Exploration and Water Resources: Exploitation and Conservation
2006	Masters	MSc. in Agricultural Engineering
2002	Bachelors	BSc. in Agricultural Engineering
2015	Diploma	Diploma – Safe and Sustainable Sanitation
2008	Certificate	Certificate-Sustainable Ecological Sanitation
2008	Certificate	Certificate –Decentralized Water Supply and Sanitation Systems

Work experience: Over 20 years. 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. Dr. 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. Worked in Turkana for three years (2008-2011).

Professional experience

Date from - Date to	Company	Position	Description
Feb-March 2020	WFP & County Government of Turkana	Team Leader and EIA Lead Expert	ESIA of Proposed Naduat Water Pan, Nakalale Ward, Turkana North Sub County
Feb-March 2020	WFP & County Government of Turkana	Team Leader and EIA Lead Expert	ESIA of Proposed Pokotom Water Pan, Letea Ward, Turkana West Sub County, Turkana County
Feb-March 2020	WFP & County Government of Turkana	Team Leader and EIA Lead Expert	ESIA of Proposed Komudei Water Pan, Lopur Ward, Turkana West Sub County
Feb-March 2020	WFP & County Government of Turkana	Team Leader and EIA Lead Expert	Kakwanyang' in Turkana, Central sub County, Turkana County
Feb-March 2020	WFP & County Government of Turkana	Team Leader and EIA Lead Expert	Kaleng'morok in Turkana South Sub County, Turkana County
Nov, 2019-Dec2019	Ministry of Agriculture, Livestock & Fisheries State Department of Crops; Kenya Small Scale Irrigation And Value Addition Project (Sivap)	Team Leader and EIA Lead Expert	ESIA of Ruungu Irrigation Development Project in Ruungu, Tharaka Nithi County
August-August 2019	Millennium Water Alliance (MWA)/Kenya Resilient Arid Lands Partnership for Integrated Development (Kenya RAPID)	Facilitator	Capacities building of county government so as to improve delivery of services in the Water, Sanitation and Hygiene (WASH) sector
1 st June 2018-May 2019	JICA-Japanese International Cooperation agency	Principal Investigator	Briquettes making from sanitized human faeces
2019	CODWAX Management Agencies	Team Leader/ EIA Lead Expert	Proposed Development Of A Hotel On Lr No. Bunyala/Bukoma/1474 at Bukoma, Port Victoria Township In Busia County
2018	Health Advantage Kenya LTD	Team Leader/ EIA Lead Expert	Proposed Installation Of Solid Waste Incinerator At Lalwet, On Plot No: Miti Mingi/Mbaruk Block 4/710 (Ingobor) Nakuru County

Date from - Date to	Company	Position	Description
2018	Mrs. Salome Gichura PO BOX 74882 – 00200, NAIROBI	Team Leader/ EIA Lead Expert	Environmental Impact Assessment Project Report For The Proposed Development Of Hostel On Lr No 12/272, Thika Municipality, Kiambu County
2018	Mr. David Mutinda Mutuku P.O. Box 10189-00100, Nairobi.	Team Leader/ EIA Lead Expert	Proposed Fuel Filling Station on Plot Lr. No 2352 Kikumuni/Masinga, Machakos County
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
2015 - 2016	Wajir County Government	Design Engineer and Team Leader	Design of four water pans measuring 54,000m3 in four sub-counties of Wajir County- Total cost: KES. 230m.
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 Gatuanaga, Kiambu County
10/2014 - 12/2014	SNV Netherlands Development Organization	Team Leader	Capacity building for wash business innovations and public private partnership (PPP) modelling.
02/2014 – 05/2014	Geothermal Development Company	Lead Expert	Updating the Enterprise Risk Register for GDC.
9/2014 - 1/2015	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 & OXFAM	EIA Lead Expert and Design Engineer	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).

Date from - Date to	Company	Position	Description
06/2014 – 08/2014	USADF	Team Leader and Design Expert	Lokipetot Irrigation Scheme, Lokipetot-Turkana County.
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	EIA Lead Expert	Lobei Waterpan-Loima District, Turkana County, Environmental Impact Assessment Ministry of Agriculture.
2012	National 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 Koptiro Irrigation Scheme in Kainuk Division, Turkana South District. Financed by World 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.
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.

Employment record

YEAR		Position and organization
FROM	TO	
17.04.2015	Date	Senior Lecturer, JKUAT
1.08.2015	To date	Chairman, Soil, Water & Environmental Engineering Department, JKUAT
01.08.2013	16.04.2015	Lecturer, BEED, JKUAT

01.01.2012	30.07.2013	Assistant Lecturer, BEED, JKUAT
01.04.2011	31.12.2011	Research Officer-Kenya Agricultural Research Institute (KARI)-Garissa
01.07.2008	30.03.2011	Ministry of Agriculture, District Agricultural Engineer, Turkana South
1.03.2007	30.10.2010	ROSA Project (Resource Oriented Concepts for Peri-Urban areas of Africa, Egerton University part- time lecturer and PhD candidate.
1.01.1991	2.09.2007	Field Operations Manager, Kibigori Plantations LTD

1. Other relevant information (e.g., Publications)

Books and Book Chapters

Raude, J. M; Mutua, B. M. and Onyando, J.M (2011). Surface Runoff and Soil Loss under varying rainfall intensity.

<https://www.lap-publishing.com/catalog/details/store/gb/book/978-3-8443-0356-8>

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. Pages:508-539.

URL:www.igi-global.com/book/handbook-research-computational-simulation-modeling/129612

Selected papers

1. 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.

2.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.

3.Raude, J. M., Mutua, B. M., & 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.

4.Namu, P. N., **Raude, J. M.**, Mutua, B. M., & Wambua, R. M. (2018). Determination of Discrete Particles Optimum Design Parameters for Surface Irrigation System Settling Basin. *JOURNAL OF SUSTAINABLE RESEARCH IN ENGINEERING*, 4(2), 33-44.

5.Wambua, R. M., Mutua, B. M., & **Raude, J. M.** (2018). Analysis of Drought and Wet-Events Using SWSI-Based Severity-Duration-Frequency (SDF) Curves for the Upper Tana River Basin, Kenya. *Hydrology*, 6(2), 43.

6.Mutua, B. M., Wambua, R. M., & **Raude, J. M.** (2018). Drought Forecasting Under Climate Change Scenarios Using Artificial Neural Networks for Sustainable Water Resources Management in Upper Tana River Basin, Kenya.

7.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.

8.Ouédraogo, W., **Raude, J.**, & Gathenya, J. (2018). Continuous Modeling of the Mkurumudzi River Catchment in Kenya Using the HEC-HMS Conceptual Model: Calibration, Validation, Model Performance Evaluation and Sensitivity Analysis. *Hydrology*, 5(3), 44.

9.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.

10. Maina, C. W., Sang, J. K., Mutua, B. M., & Raude, J. M. (2017). Bathymetric survey of Lake Naivasha and its satellite Lake Oloiden in Kenya; using acoustic profiling system. *Lakes & Reservoirs: Research & Management*. <http://dx.doi.org/10.1111/lre.12247>
11. 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.
<http://www.academicjournals.org/journal/IJWREE/article-abstract/E23790265327>
12. 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. <http://sri.jkuat.ac.ke/ojs/index.php/sri>
13. 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.
<http://www.macrothink.org/journal/index.php/emsd/article/view/11486>
14. Maloi, S. K., Sang, J. K., Raude, J. M., Mutwiwa, U. N., Mati, B. M., & Maina, C. W. Assessment of Sedimentation Status of Ruiru Reservoir, Central Kenya. *American Journal of Water Resources*, 4(4), 77-82. <http://pubs.sciepub.com/ajwr/4/4/1/>
15. 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
16. 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
17. Raphael M. Wambua, Benedict M. Mutua and James M. Raude (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 (IJERT) ISSN: 2278-0181, Vol. 3 Issue 11 ISSN: 2278-0181.
18. 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
19. 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
20. 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