JOHN YUMBYA MUTUA

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RESEARCH INTERESTS

GIS, remote sensing, spatial statistics, data visualization, reproducible research

EDUCATION

Master of Climate Change Adaptation   December 2020 (Expected)
University of Nairobi   Nairobi, Kenya
Mapping Potential Heat Stress Risk for Dairy Cattle under Current and Future Projected Climatic Conditions in Uganda

B.A., Geography   2009
Moi University   Eldoret, Kenya
A Decision Support System for Flood Hazard preparedness for Nzoia River Basin, Kenya

PEER-REVIEWED PUBLICATIONS

Rahimi J, ***Mutua J***, Notenbaert A, Dieng D and Butterbach-Bahl K (2020). **Will Dairy Cattle Production in West Africa be Challenged by Heat Stress in the Future?** (Accepted in Climate Change Journal).

Mutua J, Marshall K, Paul B and Notenbaert A (2020). **A methodology for mapping current and future heat stress risk in pigs** . (Accepted in International Journal of Animal Biosciences).

Nijbroek, R., Piikki, K., Söderström, M., Kempen, B., Turner, K., Hengari, S., and ***Mutua, J.*** (2018). **Soil Organic Carbon Baselines for Land Degradation Neutrality: Map Accuracy and Cost Tradeoffs with Respect to Complexity in Otjozondjupa, Namibia.** *Sustainability* , 10(5), 1610.

Hamerlynck, O., Zeine, S. M., ***Mutua, J.,*** Mukhwana, L., and Yéna, M. (2016). **Reflooding the Faguibine floodplain system, northern Mali: potential benefits and challenges.** *African Journal of Aquatic Science* , 41(1), 109-117.

Yumbya, J., Vaate, M. B. De, Kiambi, D., Kebebew, F., and Rao, K. 2014. **Geographic Information Systems for assessment of climate change effects on teff in Ethiopia.** *African Crop Science Journal* , 22, 847 - 858

RESEARCH AND CONSULTING

International Centre for Tropical Agriculture, Nairobi, Kenya   April 2015-Present
Geospatial Analyst
My work involves creating reproducible workflows for analyzing complex spatial data, with appropriate analytical methods, informed by my unique combination of skills, experience, and understanding of research themes - climate change, food security and agriculture.

African Biodiversity Conservation and Innovations Centre, Nairobi, Kenya   October 2010-March 2015
GIS Analyst
Designed and implemented models for mapping commodity suitability in East Africa and implemented training and capacity building programs on remote sensingand GIS.

International Centre for Tropical Agriculture, Cali, Colombia   February 2012-June 2012
Visiting Scientist
Contributed to the development of algorithms for mapping and identifying priority wild relatives of rice for conservation.

Institute of Research for Development, Tombouctou, Mali   April 2010-September 2010
GIS/Remote Sensing Consultant
Spectral analysis of Multispectral Landsat 7 Enhanced Thematic Mapper Plus (ETM+) and aerial imagery; Created geospatial datasets for use in ecosystem services mapping projects in Kenya and Mali.

Value Addition and Cottage Industry Development in Africa, Nairobi, Kenya   January 2010-September 2010
GIS Analyst
Maintained the organization's enterprise geodatabase and ensured constant updating; Performed GIS data cleaning; Developed and implemented geostatistical modeling and analysis.

Kenya Electricity Generating Company, Nairobi, Kenya   September 2009-January 2010
Intern
Hydrological modeling and forecasting for hydroelectric power production; Maintained the organization's enterprise geodatabase and ensured constant updating.

Department of Resource Survey and Remote Sensing, Nairobi, Kenya   June 2009-August 2009
Intern
Designed and produced high-resolution well-designed map layouts; Maintained the organization's enterprise geodatabase and ensured constant updating.

Kenya Meteorological Department Nairobi, Kenya   June 2008-August 2008
Intern
Designed and implemented a spatial model for mapping daily rainfall distribution in Kenya; Modeled rainfall-runoff modeling using Galway Flow Forecasting System.

PROFESSIONAL TRAINING

Hands-on Global Soil Information Facilities   May 2017
ISRIC - World Soil Information   *Wageningen, Netherlands*

Automated Geospatial Watershed Assessment (AGWA) Tool   March 2017
University of Arizona   *Tucson, USA*

Advanced Soil and Water Assessment Tool (SWAT)   February 2016
International Livestock Research Institute   *Addis Abbaba, Ethiopia*

JICA-Net Training Program on Remote Sensing and GIS   March 2010
Japan Society of Photogrammetry and Remote Sensing   *Nairobi, Kenya*

SHORT COURSES AND WORKSHOPS LED

R for developing LDN indicators   June 2017
Faculty of Agriculture and Natural Resources, University of Namibia,   *Windhoek, Namibia*

CONFERENCE PRESENTATIONS

Targeting Tools version 1.0   November 2019
AfricaGIS 2019   *Kigali, Rwanda*

The Sub-Saharan Africa Soil Data Manager (SSA-SDM)   November 2019
AfricaGIS 2019   *Kigali, Rwanda*

Bush encroachment mapping in Otjozondjupa region, Namibia   August 2018
FOSS4G 2018   *Dar es salaam, Tanzania*

POSTER PRESENTATIONS

Mapping the suitability of tropical forages - now and in the future -   September 2018
Tropentag   *Ghent, Belgium*

CIAT Soil Carbon Sequestration Research   November 2017
Soil Carbon Sequestration: Supporting NDCs and donor action *ZEF Center for Development Research, University of Bonn*

Development of a SOC Baseline: Experiences from Otjozondjupa, Namibia.   March 2017
Global Symposium on Soil Organic Carbon   *Rome, Italy*

Spatial Targeting of Agricultural Intensification Investments   March 2017
Linking Household Surveys with Spatial Data Workshop   *Arusha, Tanzania*

SKILLS

Software	Expert: ArcGIS Suite, QGIS, ERDAS Imagine suite, ENVI, Google Earth Engine
Languages	Expert: R, LaTeX, HTML, Markdown, XLSForm, git
	Intermediate: Python, MATLAB, JavaScript
Social Media	Twitter: **@JohnYumbya**, 1,900+ tweets, 200+ followers
	Blogs: maintainer, `https://ymutua.github.io`

Open source contributions:
SurfaceTortoise - Find Optimal Sampling Locations Based on Spatial Covariate(s): `https://github.com/cran/SurfaceTortoise`
mapsRinteractive: Local Adaptation and Evaluation of Digital Soil Maps: `https://github.com/cran/mapsRinteractive`
Targeting Tools: `https://github.com/CIAT/targeting_tools_10_3`
CLEANED-RX: `https://github.com/CIAT/cleaned-rx`
Many more projects hosted on GitHub, `https://github.com/ymutua`

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Geospatial Society of Kenya (GSK)   2017-present

Society for Conservation GIS (SCGIS)   2010-present

REFEREES

Dr. Dionysious K Kiambi
Dean, Graduate School
Pan Africa Christian University
P.O Box 56875 - 00200, Nairobi, Kenya
dionysious.kiambi@pacuniversity.ac.ke

William K.Kiplagat
Head, Geography Department
Moi University
P.O. Box 3900 - 30300, Eldoret, Kenya
williamkiplagat@yahoo.com

Dr. James M Kinyanjui
Natural Resource Scientist
Department of Resource Surveys and Remote Sensing
P.O. Box 47146 - 00100, Nairobi, Kenya
mwangikinyanjui@gmail.com