JOHN YUMBYA MUTUA

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RESEARCH INTERESTS

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

EDUCATION

Master of Climate Change Adaptation   Continuing
University of Nairobi   Nairobi, Kenya
Mapping heat stress risk for dairy cattle under current and future climatic conditions in Uganda

B.A., Geography   2009
Moi University   Eldoret, Kenya

PEER-REVIEWED PUBLICATIONS

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   2015-Present
Geospatial Analyst
My work revolves around 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 in GIS and remote sensing.

International Centre for Tropical Agriculture, Cali, Colombia   February 2012-June 2012
Visiting Scientist
Developed an R algorithm for mapping and identifying priority rice wild relatives species 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.

SHORT COURSES AND WORKSHOPS LED

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

INVITED TALKS

Geospatial Innovation at CIAT: Today and a View into the future   November 2017
Kenyatta University, GIS Day   *Nairobi, Kenya*

CONFERENCE PRESENTATIONS

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**, 1,800+ tweets, 176+ followers
	Blogs: maintainer, `https://jyumbya.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/jyumbya`

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Geospatial Society of Kenya (GSK)	2017-present
Society for Conservation GIS (SCGIS)	2010-present

REFERENCES

Dr. Dionysious K Kiambi
Dean, Graduate School
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William K.Kiplagat
Head, Geography Department
P.O. Box 3900 - 30300, Eldoret, Kenya
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Dr. James M Kinyanjui
Natural Resource Scientist
Department of Resource Surveys and Remote Sensing
P.O. Box 47146 - 00100, Nairobi, Kenya
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