

# JOHN YUMBYA MUTUA

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## RESEARCH INTERESTS

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

## EDUCATION

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**Master of Climate Change Adaptation**

**University of Nairobi**

Mapping heat stress risk for dairy cattle under current and future climatic conditions in Uganda

Continuing

Nairobi, Kenya

**B.A., Geography**

**Moi University**

2009

Eldoret, Kenya

## PEER-REVIEWED PUBLICATIONS

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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

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**International Centre for Tropical Agriculture**, Nairobi, Kenya

*Geospatial Analyst*

2015-Present

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

2010-March 2015

*GIS Analyst*

October

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

*Visiting Scientist*

February 2012-June 2012

Developed an R algorithm for mapping and identifying priority rice wild relatives species for conservation.

**Institute of Research for Development**, Tombouctou, Mali

*GIS/Remote Sensing Consultant*

April 2010-September 2010

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

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

## INVITED TALKS

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

## CONFERENCE PRESENTATIONS

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

## POSTER PRESENTATIONS

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**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

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**Software** Expert: ArcGIS Suite, QGIS, ERDAS Imagine suite, ENVI, Google Earth Engine  
**Languages** Expert: R, L<sup>A</sup>T<sub>E</sub>X, 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](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

<b>Geospatial Society of Kenya (GSK)</b>	2017-present
<b>Society for Conservation GIS (SCGIS)</b>	2010-present

## REFERENCES

**Dr. Dionysious K Kiambi**  
 Dean, Graduate School  
 P.O Box 56875 - 00200, Nairobi, Kenya  
[dionysious.kiambi@pacuniversity.ac.ke](mailto:dionysious.kiambi@pacuniversity.ac.ke)

**William K.Kiplagat**  
 Head, Geography Department  
 P.O. Box 3900 - 30300, Eldoret, Kenya  
[williamkiplagat@yahoo.com](mailto: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](mailto:mwangikinyanjui@gmail.com)