KARATINA UNIVERSITY

STAFF PROFILE TEMPLATE

1. **Name:** Mr. Peter Kinyae Musyimi
2. **Designation**: Tutorial Fellow of Geography
3. **Employment details**

School: School of Education and Social Sciences

Department: Humanities and Languages

Contact Information

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Research Links:

Orcid number: https://orcid.org/0000-0003-4165-8565
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Web of Science: http://www.webofscience.com/wos/author/record/AEK-3562-2022
Research Gate:
https://www.researchgate.net/profile/PeterMusyimi?ev=hdr_xprf&_sg=9Pfd4NfnmsdNbvD57fKHbF4eWqqXFqQNmM7LWKy58beXwRyzU695SUstKO9r_99xouVNnODnf0u_nsm8fdmwb46&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6ImhvbWUiLCJwYWdlIjoiaG9tZSIsInBvc2l0aW9uIjoiZ2xvYmFsSGVhZGVyIn19

4. **Describe your professional self**

Mr. Peter Musyimi is a Tutorial Fellow of Geography at Karatina University, School of Education and Social Sciences, Department of Humanities and Languages. Prior to this appointment , He was a Graduate Assistance at the same school and Department. He completed his Master of Arts in Geography and Bachelor of Education(Arts) Geography/Kiswahili from Karatina University. Currently, he is a PhD Candidate under Stipendium Hungaricum Scholarship to pursuing PhD studies in Earth sciences at Eötvös Loránd University (ELTE), Budapest Pázmány Péter, Hungary on full scholarship. He worked as a volunteer teacher with UN-Windle Trust Kenya in Dadaab Refugee camp, the largest in the world

His research interests are in the area of Geography and Earth Sciences with bias in climatology and meteorology, remote sensing and GIS and agrometeorology. He is a skilled researcher focused on climate change and variability; drought and water scarcity. He is also currently carrying out meteorological measurement using data loggers and Temperature-Moisture-Sensor (TMS). The parameters measured include soil moisture, soil temperature, air temperature and humidity at 2m above the surface at Mount Kenya rainforest biome at 3050 m above sea level at Karatina University at 1998 m above sea level. He has published in highly ranked journals and collaboratively carried out research in fields and discipline of remote sensing and its applications in climate studies, renewable energy in Wind and Solar energy. He has participated in international conferences with contributions from his research. He is a member Geography Association Club, Karatina university , European Meteorological Society (EMS), European Geosciences Union (EGU). He served as a workload allocation coordinator at the Department of Humanities and Languages, School of Education and Social Sciences in 2020. He also served as a member in the Sustainable Developmental Goals Committee on Climate Action, School of Education and Social Sciences and an Assistant Examination Coordinator at the Department of Humanities and Languages, School of Education and Social Sciences, Karatina University in 2019. He teaches undergraduate courses in both physical and human geography.

5. **Area/ Field of specialization**: Geography and Earth Sciences: Climatology and Meteorology, Remote Sensing and GIS, Agrometeorology.

6. **Research interests**: Climate impacts, Evapotranspiration modelling, Drought characterization, Water Scarcity, Meteorological measurements, Hydro climatology, Applied remote sensing, agricultural meteorology and climatology.

7. List some of your key published works

Peer-reviewed Publications

1. **Musyimi, P. K**., Sahbeni, G., Timár, G., Weidinger, T., & Székely, B. (2023). Analysis of Short-Term Drought Episodes Using Sentinel-3 SLSTR Data under a Semi-Arid Climate in Lower Eastern Kenya. *Remote Sensing*, *15*(12), 3041.https://doi.org/10.3390/rs15123041

2. Rotich, I. K., & **Musyimi, P. K**. (2023). Wind power density characterization in arid and semi-arid Taita-Taveta and Garissa counties of Kenya. *Cleaner Engineering and Technology*, 100704. https://doi.org/10.1016/j.clet.2023.100704

3. Sahbeni, G., Székely, B., **Musyimi, P. K**., Timár, G., & Sahajpal, R. (2023). Crop Yield Estimation Using Sentinel-3 SLSTR, Soil Data, and Topographic Features Combined with Machine Learning Modeling: A Case Study of Nepal. *AgriEngineering*, *5*(4), 1766-1788.http://doi.org/10.3390/agriengineering5040109

4. Timár, G., **Musyimi, P. K**., & Appel, S. (2023). Projection analysis and georeference of the 1:2M Africa map by Régnauld de Lannoy de Bissy (1891-1902). In Annual Conference Digital Approaches to Cartographic Heritage - Proceedings, ISSN 2459-3893, pp. 187-193. https://www.researchgate.net/profile/

5. Sahbeni, G., Ngabire, M., **Musyimi, P. K**., & Székely, B. (2023). Challenges and Opportunities in Remote Sensing for Soil Salinization Mapping and Monitoring: A Review. *Remote Sensing*, *15*(10), 2540. http://doi.org/10.3390/rs15102540

6. **Musyimi, P. K.**, Székely, B., Gandhi, A., & Weidinger, T. (2022). Palmer-type soil modelling for evapotranspiration in different climatic regions of Kenya. *Hungarian Geographical Bulletin*, *71*(4), 365-382.https://doi.org/10.15201/hungeobull.71.4.4

7. **Musyimi, P. K**., Sahbeni, G., Timár, G., Weidinger, T., & Székely, B. (2022). Actual evapotranspiration estimation using sentinel-1 SAR and sentinel-3 SLSTR data combined with a gradient boosting machine model in Busia county, Western Kenya. *Atmosphere*, *13*(11), 1927. http://doi.org/10.3390/atmos13111927

8. Gandhi, A., Bartok, B., Ilona, J., Musyimi, P. K., & Wedinger, T. (2022). Historical fog climate dataset for Carpathian Basin from 1886 to 1919. Data in Brief, 44, 108500. https://doi.org/10.1016/j.dib.2022.108500

9. **Musyimi, P.K**., (2020) Climate variability adaptation in rural Kenya. https://www.afrikablog.hu/climate-variability-adaptation-in-rural-kenya

10. Huho, J. M., Kosonei C.R, & **Musyimi, P.K**. (2020). Sociodemographic determinants of households' food wastes in Garissa Sub-County, Kenya. Budapest International Research and Critics institute Journal. Budapest Institute. ISSN 2615-3076, 932-946

11. Böttcher, Zora Delphine; Helbig, Torben Leon; Hingst, Finn-Rasmus; Kagwi Njuguna, Elvis James; Karanja Wangui, Edwin; Kingori, Paul; **Kinyae Musyimi, Peter**; Nyaguthii Njiraini, Doreen; Orozco, Richard Jose; Orth, André Günter; Ouko Ang'ila, Robert; Petersen, Gyde; Rau, Franziska; Ried, Christian David; Robinson, James Scott; Schampera, Charlotte; Schmidt, Kim-Karen; Thiesmeier, Alma Irma Maria; Wairimu Mwaura, Ann; Wangui, Maina Esther (2018). Rural-urban transitions –Livelihood, Human-Wildlife Interactions, Land Use and Land Cover Change in the Buffer Zone of Mount Kenya National Park. December 2018, 1-94. https://www.dropbox.com/sh/m21vph4dov6m277/AACKeDnpG0CGsbsjzwwEREw8a?dl=0

12. **Musyimi P.K**, Huho, J.M., and Opiyo, F.E. (2018) Understanding Drought Characteristics and Perceived Effects on Water Sources in Kenya's Drylands: A Case Study of Makindu Sub-County. In Fymat A. L. and Kapalanga, J. (eds) Advancing Africa's Sustainable Development: Proceedings of the 4th Conference on Science Advancement. Cambridge Scholars Publishing, Newcastle upon Tyne, NE6 2PA, UK pp 324 – 349

13. **Musyimi, P.K**., Nduru, G. M., Huho, J.M., & Opiyo, E. F. (2018). Economic Gains of Water Scarcity Adaptation Strategies in Makindu Sub-County, Kenya. Machakos University Journal of Science and Technology, ISBN978-9966-820-64-8 Vol. 1, Issue 1, November 2018

14. **Musyimi, P.K**., Nduru, G. M., Huho, J.M., & Opiyo, E. F. (2018). Assessing Climate Variability Adaptation and Coping Strategies among Rural Households in Kenya. Journal of Water and Environmental Technologies. Vol. (02) August 2018.ISSN: 2508-9250, 342-349
15. **Musyimi, P.K**., Nduru, G. M., Huho, J.M., & Opiyo, E. F. (2018). Households' Perceptions on Impact of Drought on Water Resources in Makindu Sub-County, Kenya AFRREV Vol. 12(3) July 2018, 64-73. https://doi.org/10.4314/afrrev.v12i3.7

Book Chapters

1. **Musyimi P.K**., Székely, B, & Weidinger, T. (2023) .Meteorological Measurements in Mount Kenya Region, Importance of Qulality Control, Preparatory Steps and Calibration. *Egyetemi Meteorológiai Füzetek, University notes of Meteorology, Department of Meteorology Eötvös Loránd University*, 155-169. ISSN 0865-7920. https://doi.org/10.31852/EMF.35.2023.155.169

2. Agustiyara, A., Székely, B., Nurmandi, A., **Musyimi, P.K**. (2023). Remote Sensing Applied for Land Use Change Assessment and Governance in Riau-Indonesia. In: Stephanidis, C., Antona, M., Ntoa, S., Salvendy, G. (eds) HCI International 2023 Posters. HCII 2023. *Communications in Computer and Information Science, vol 1835. Springer,*

Cham. https://doi.org/10.1007/978-3-031-36001-5_56

3. **Musyimi, P. K**., Székely, B., & Weidinger, T. (2022) Maize coefficient influence on real evapotranspiration in Garissa County, Kenya in: Pongrácz, R.; Mészáros, R.; Kis, A. (eds.) Aktuális meteorológiai kutatások: Az éghajlatváltozás és hatásainak vizsgálata, levegőminőségi elemzések. Budapest, Magyarország: *ELTE Meteorológiai Tanszék*, 110-118. https://doi.org/10.31852/EMF.34.2022.110.118

4. **Musyimi, P. K**., Székely, B., & Weidinger, T. (2020). Long-term (1901–2016) temperature-based potential evapotranspiration and aridity index analysis for the lower eastern region of Kenya. In Pongrácz, R.; Mészáros, R.; Kis, A. (eds.) Current PhD research at the 75-year-old Department of Meteorology. Budapest, Magyarország: *ELTE Department of Meteorology*. https://doi.org/10.31852/EMF.33.2020.074.083

Published Abstracts

1. **Musyimi, P. K**., Mendyl, A., Agustiyara, A., Székely, B., & Weidinger, T. (2023). Hourly reference evapotranspiration analysis using synoptic meteorological measurements and ERA5 reanalysis data from Kenyan Counties, EMS Annual Meeting 2023, Bratislava, Slovakia, 4–8 Sep 2023, EMS2023-331, https://doi.org/10.5194/ems2023-331

2. Mendyl, A., **Musyimi, P. K**., Adrás Zénó, G., and Weidinger, T.(2023, September). Analysis of Wind Data and Assessment of Wind Energy Potential in North-West Hungary, EMS Annual Meeting 2023, Bratislava, Slovakia, 4–8 Sep 2023, EMS2023-114, https://doi.org/10.5194/ems2023-114

3. Mendyl, A., Gandhi, A., **Musyimi, P. K**., Székely, B., & Weidinger, T. (2022, May). Comparative analysis of wind and solar energy potential from different climate regions, case studies of Morocco, India, and Kenya. In EGU General Assembly Conference Abstracts (pp. EGU22-380). https://doi.org/10.5194/egusphere-egu22-380

4. **Musyimi, P. K**., Székely, B., & Weidinger, T. (2022). Reference evapotranspiration estimation and influence of coffee on real evapotranspiration in humid climatic regions of Kenya. In EGU General Assembly Conference Abstracts (pp. EGU22-388). https://doi.org/10.5194/egusphere-egu22-388

5. Sahbeni, G., **Musyimi, P. K**., Székely, B., & Weidinger, T. (2022). The Relationship Between Soil Moisture and Drought Monitoring Using Sentinel-3 SLSTR Data in Lower Eastern Counties of Kenya. In EGU General Assembly Conference Abstracts (pp. EGU22-6058). https://doi.org/10.5194/egusphere-egu22-6058

6. **Musyimi, P. K.,** Székely, B., & Weidinger, T.(2021) Maize coefficient influence on real evapotranspiration in Garissa country, Kenya, webGeoMATES 2021, International Congress on Geomathematics in Earth- & Environmental Sciences, ABSTRACT BOOK of the webGEOMATES 2021 congress for young scientists, Hungarian Geological

Society, 26, 2021, Hungary.

7. **Musyimi, P. K**., Székely, B., & Weidinger, T. (2021). Long-term reference and real evapotranspiration modelling using a one-dimensional Palmer-type soil model for different climatic regions of Kenya (No. EMS2021-330). Copernicus Meetings. https://doi.org/10.5194/ems2021-330