LK Sam-Amoah

Professor · Department of Agric. Engineering
University of Cape Coast

ORCID 0000-0002-9461-1931 · Homepage ucc.edu.gh/lsam-amoah · Google Scholar scholar.google.com/citations?user=-5fWvBgAAAAJ&hl=en · Profile scholar.ucc.edu.gh/staff/dbf862cb-9836-467c-9fc0-328d6d83edc5

RESEARCH

Interests	Soil and Water Engineering · Irrigation Engineering and Management
Areas	Analytical Chemistry · Food Science · Plant Science · Soil Science · Biomedical Engineering · Molecular Biology

RESEARCH SUMMARY

53	1,099	18	27	1.49	16%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 53 publications listed below, 1993–2026. Field-weighted impact is the mean over the 31 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 31 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Professor 1994–present
Agric Engineering, University of Cape Coast, Cape Coast, Ghana

EDUCATION AND QUALIFICATIONS

PhD 1997–2001
Newcastle University, Newcastle upon Tyne, United Kingdom

MPhil 1992–1994
Newcastle University, Newcastle upon Tyne, United Kingdom

MSc Irrigation 1991–1992
Newcastle University, Newcastle upon Tyne, United Kingdom

BSc Agric Engineering 1981–1986
Agricultural Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 50

1. Faruk Kwansah Nyame, **Livingstone Kobina Sam Amoah**, Joshua Danso Owusu-Sekyere, Ransford Opoku Darko, Francis Kumi, Clement Nyamekye (2026). Effect of irrigation frequency on cocoa (Theobroma cacao L.) bean quality in Ghana's major production zone. *International Journal of Agricultural Research Innovation and Technology*. https://doi.org/10.3329/ijarit.v15i2.87895
2. R. O. Darko, F. Odoi-Yorke, A. A. Abbey, E. B. Agyekum, **L. K. Sam-Amoah** (2025). A review of current trends and evolution of irrigation water management practices on greenhouse gas emissions. *International Journal of Energy and Water Resources*. https://doi.org/10.1007/s42108-025-00448-7
3. Wisdom Eyram Kwame Agbesi, **Livingstone Kobina Sam-Amoah**, Ransford Opoku Darko, Francis Kumi, George Boafo (2025). Numerical Models for Predicting Water Flow Characteristics and Optimising a Subsurface Self-Regulating, Low-Energy, Clay-Based Irrigation (SLECI) System in Sandy Loam Soil. *Water*. https://doi.org/10.3390/w17142058

4. Wisdom Eyram Kwame Agbesi, **Livingstone Kobina Sam-Amoah**, Francis Kumi, Ransford Opoku Darko, George Boafo (2025). Optimal operating parameters for a subsurface self-regulating, low energy, clay-based irrigation (SLECI) system in sandy loam soil across multiple rooting depths. *Multiscale and Multidisciplinary Modeling Experiments and Design*. https://doi.org/10.1007/s41939-025-01108-3

5. Faruk Kwansah Nyame, **Livingstone Kobina Sam-Amoah**, Joshua Danso Owusu-Sekyere, Ransford Opoku Darko, Francis Kumi, Clement Nyamekye (2025). Optimizing Irrigation and Tree Age for Enhanced Cherelle Retention in Cocoa (Theobroma cacao L.) Production in Ghana. *Applied Fruit Science*. https://doi.org/10.1007/s10341-025-01687-y

6. Gilbert Osei, **Livingstone K. Sam-Amoah**, Joshua Owusu-Sekyere, Harald Hansmann, Francis Kumi, Kezia Mensah (2025). Performance characteristics of self-regulating low energy clay-based irrigation system in different soil types. *Journal of the Ghana Institution of Engineering (JGhIE)*. https://doi.org/10.56049/jghie.v25i1.212

7. Ransford Opoku Darko, Flavio Odoi-Yorke, Agnes Abeley Abbey, Emmanuel Afutu, Joshua Danso Owusu-Sekyere, **Livingstone Kobina Sam-Amoah**, Lawerence Acheampong (2024). A Review of Climate Change Impacts on Irrigation Water Demand and Supply - A Detailed Analysis of Trends, Evolution, and Future Research Directions. *Water Resources Management*. https://doi.org/10.1007/s11269-024-03964-z

8. Gilbert Osei, Joshua Owusu-Sekyere, **Livingstone Sam-Amoah**, Francis Kumi, Harald Hansmann, Vincent Agyemang, Ransford Darko, Kezia Mensah, Delwyn Okhumai (2024). Bell pepper (Capsicum annuum) response to self-regulating low energy clay-based irrigation (SLECI) system, burying depth and fertilizer application dosage. *Journal of Central European Agriculture*. https://doi.org/10.5513/jcea01/25.4.4462

9. Vida Gyimah Boadu, Ernest Teye, Francis Padi Lamptey, Charles Lloyd Yeboah Amuah, **L.K. Sam-Amoah** (2024). Novel authentication of African geographical coffee types (bean, roasted, powdered) by handheld NIR spectroscopic method. *Heliyon*. https://doi.org/10.1016/j.heliyon.2024.e35512

10. Ransford Darko, Clement Sagoe, **Livingstone Sam-Amoah**, Francis Kumi, Mark Nyameche (2023). Assessment of Irrigation water quality and selected soil parameters at Mankessim irrigation scheme, Ghana. *Poljoprivredna tehnika*. https://doi.org/10.5937/poljteh2302034d

11. Edward Ken Essuman, Ernest Teye, Rosemond Godbless Dadzie, **Livingstone K. Sam-Amoah** (2023). Pesticide Residues and Unauthorized Dyes as Adulteration Markers in Chilli Pepper and Tomato. *International Journal of Food Science*. https://doi.org/10.1155/2023/5337150

12. Vida Gyimah Boadu, Ernest Teye, Charles L. Y. Amuah, Francis Padi Lamptey, **Livingstone Kobina Sam-Amoah** (2023). Portable NIR Spectroscopic Application for Coffee Integrity and Detection of Adulteration with Coffee Husk. *Processes*. https://doi.org/10.3390/pr11041140

13. Edward Ken Essuman, Ernest Teye, **Livingstone K. Sam-Amoah**, Charles L.Y. Amuah (2023). Rapid and non-destructive prediction of adulterated chilli powder by employing pocket-sized NIR spectrometer and chemometrics. *Infrared Physics & Technology*. https://doi.org/10.1016/j.infrared.2023.104961

14. Edward Ken Essuman, Ernest Teye, Rosemond Godbless Dadzie, **Livingstone K. Sam-Amoah** (2022). Consumers' Knowledge of Food Adulteration and Commonly Used Methods of Detection. *Journal of Food Quality*. https://doi.org/10.1155/2022/2421050

15. Vida Gyimah Boadu, Ernest Teye, Charles L. Y. Amuah, **L. K. Sam-Amoah** (2022). Rapid authentication of coffee bean varieties of different forms by using a pocket-sized spectrometer and multivariate data modelling. *Analytical Methods*. https://doi.org/10.1039/d2ay01480g

16. Kelvin Edom Alordzinu, Jiuhao Li, Yubin Lan, Sadick Amoakohene Appiah, Alaa AL Aasmi, Hao Wang, Juan Liao, **Livingstone Kobina Sam-Amoah**, Songyang Qiao (2021). Ground-Based Hyperspectral Remote Sensing for Estimating Water Stress in Tomato Growth in Sandy Loam and Silty Loam Soils. *Sensors*. https://doi.org/10.3390/s21175705

17. Ransford Opoku Darko, Junping Liu, Shouqi Yuan, **Livingstone K. Sam-Amoah**, Haofang Yan (2020). Irrigated agriculture for food self-sufficiency in the sub-Saharan African region. *International journal of agricultural and biological engineering*. https://doi.org/10.25165/j.ijabe.20201303.4397

18. **LK Sam-Amoah**, K Agyei Frimpong, F Kumi (2020). Role of higher education and science, technology and innovation in capacity development in Ghana. *African Journal of Rural Development*. https://afjrdev.org/

index.php/jos/article/download/600/443

19. Ernest Teye, Elliot Anyidoho, Robert Agbemafle, **Livingstone K. Sam-Amoah**, Chris Elliott (2019). Cocoa bean and cocoa bean products quality evaluation by NIR spectroscopy and chemometrics: A review. *Infrared Physics & Technology*. https://doi.org/10.1016/j.infrared.2019.103127
20. Ernest Teye, Chris Elliott, **Livingstone Kobina Sam-Amoah**, Cheetham Mingle (2019). Rapid and nondestructive fraud detection of palm oil adulteration with Sudan dyes using portable NIR spectroscopic techniques. *Food Additives & Contaminants Part A*. https://doi.org/10.1080/19440049.2019.1658905
21. Peter Osei Boamah, Yan Huang, Mingqing Hua, Jacqueline Onumah, **Livingstone K. Sam-Amoah**, Paul Osei Boamah, Yaao Qian, Qi Zhang (2016). Sorption of copper onto low molecular weight chitosan derivative from aqueous solution. *Ecotoxicology and Environmental Safety*. https://doi.org/10.1016/j.ecoenv.2016.01.014
22. **Livingstone, Sam-Amoah**, Yawson, D.O., Frimpong, K. Agyei, Abole, E., Livingstone, Sam-Amoah (2016). Status and challenges of the higher agricultural education sector in Ghana. *RePEc: Research Papers in Economics*. https://doi.org/10.22004/ag.econ.263566
23. **L.K. Sam- Amoah**, W.K.T. Willie, J.D. Owusu- Sekyere (2015). Effects of Deficit Irrigation and Chicken Manure Interactions on the Growth and Yield of Okra in a Pot Experiment. *Asian Journal of Agricultural Research*. https://doi.org/10.3923/ajar.2016.47.55
24. W.K.T. Willie, J.D. Owusu- Sekyere, **L.K. Sam- Amoah** (2015). Interactions of Deficit Irrigation, Chicken Manure and NPK 15:15:15 on Okra Growth and Yield and Soil Properties. *Asian Journal of Agricultural Research*. https://doi.org/10.3923/ajar.2016.15.27
25. Peter Osei Boamah, Yan Huang, Mingqing Hua, Qi Zhang, Jingbo Wu, Jacqueline Onumah, **Livingstone K. Sam-Amoah**, Paul Osei Boamah (2015). Sorption of heavy metal ions onto carboxylate chitosan derivatives—A mini-review. *Ecotoxicology and Environmental Safety*. https://doi.org/10.1016/j.ecoenv.2015.01.012
26. Ernest Teye, Xingyi Huang, **Livingstone K. Sam-Amoah**, Jemmy Takrama, Daniel Boison, Francis Botchway, Francis Kumi (2014). Estimating cocoa bean parameters by FT-NIRS and chemometrics analysis. *Food Chemistry*. https://doi.org/10.1016/j.foodchem.2014.12.042
27. Xingyi Huang, Ernest Teye, **Livingstone K. Sam-Amoah**, Fangkai Han, Liya Yao, William Tchabo (2014). Rapid measurement of total polyphenols content in cocoa beans by data fusion of NIR spectroscopy and electronic tongue. *Analytical Methods*. https://doi.org/10.1039/c4ay00223g
28. Xingyi Huang, Ernest Teye, Joshua D. Owusu-Sekyere, Jemmy Takrama, **Livingstone K. Sam-Amoah**, Liya Yao, Caleb K. Firempong (2014). Simultaneous Measurement of Titratable Acidity and Fermentation Index in Cocoa Beans by Electronic Tongue Together with Linear and Non-linear Multivariate Technique. *Food Analytical Methods*. https://doi.org/10.1007/s12161-014-9862-2
29. **J.D. Sam-Amoah**, RO Darko (2013). Calibration and Validation of AquaCrop for Full and Deficit Irrigation of Hot Pepper. *ARPN Journal of Agricultural and Biological Science*.
30. E. E. Abano, **L. K. Sam-Amoah**, J. Owusu, F. N. Engmann (2013). Effects of ascorbic acid, salt, lemon juice, and honey on drying kinetics and sensory characteristic of dried mango. *Hrčak Portal of scientific journals of Croatia (University Computing Centre)*.
31. Ernest Ekow Abano, **Livingston Kobina Sam-Amoah**, Ato Bart-Plange (2013). Variation in ultrasonic frequency and time as pre-treatments to air-drying of carrot. *Journal of Agricultural Engineering*. https://doi.org/10.4081/jae.2012.e23
32. **J.D. Sam-Amoah** (2013). Water Requirement, Deficit Irrigation and Crop Coefficient of Hot Pepper (Capsicum frutescens var legon18) Using Irrigation Interval of Two (2) Days. *ARPN Journal of Agricultural and Biological Science*.
33. **LK Sam-Amoah** (2012). Application of antagonistic microorganisms for the control of postharvest decays in fruits and vegetables. *VIRTUAL*. https://www.sid.ir/paper/666926/en
34. **Sam-Amoah** (2012). Crop coefficient (kc), water requirement and the effect of deficit irrigation on tomato in the coastal savannah zone of Ghana. *International Journal of science and nature*. https://scholar.google.com/scholar?cluster=17958281893887181599&hl=en&oi=scholarr

35. F Annor-Frempong, BA Shamaki, **LK Sam-Amoah**, AO Mensah (2011). Application of Action Research Methodology in Improving the Processing Quality of Local Rice in the Dadin-Kowa Community of Gombe State Nigeria. *Journal of Agricultural Extension*. https://doi.org/10.4314/jae.v14i2.64125
36. ABANO ERNEST EKOW, RS Amoah, **Amoah** (2011). Comparison of two storage structures for the storage of sweet potato tuberous roots in the coastal savannah zone of Ghana. *University of Cape Coast*. https://ir.ucc.edu.gh/items/287f6127-1ed1-41ba-94e3-66d126c52154
37. **Sam-Amoah** (2011). Effect of Salinity Level of Irrigation Water on the Yield of Tomato. *ARPN Journal of Agricultural and Biological Science*.
38. **LK Sam-Amoah**, B Anderson (2011). Effect of irrigation interval on chlorophyll fluorescence of tomatoes under sprinkler. *Asian Journal of Agricultural Research*. https://doi.org/10.5555/20123220674
39. ABANO ERNEST EKOW, **LK Sam-Amoah** (2011). Effects of different pretreatments on drying characteristics of banana slices. *ARPN Journal of Engineering and Applied sciences*. https://www.academia.edu/download/89745530/608-203.pdf
40. **LK Sam-Amoah** (2011). M. Takase, LK Sam-Amoah and JD Owusu-Sekyere. *Asian Journal of Plant Sciences*.
41. **LK Sam-Amoah**, FA Armah (2010). AquaCrop simulation of rainfed maize water productivity in south-central Ghana. *IN: Workshop of Capacity Development for Farm Management Strategies to Improve Crop-Water Productivity using AquaCrop*. https://www.researchgate.net/profile/David-Yawson-2/publication/260794021_Simulation_of_Rain-fed_Maize_Water_Productivity_in_South-Central_Ghana/links/589f24e992851c7fb4bdeb53/Simulation-of-Rain-fed-Maize-Water-Productivity-in-South-Central-Ghana.pdf
42. **LK Sam-Amoah** (2010). Estimation of the material losses and gari recovery rate during the processing of varieties and ages of cassava into gari. *Asian Journal of Agricultural Research*. https://www.academia.edu/download/89745607/qredirect.pdf
43. **LK Sam-Amoah** (2010). M. Takase, JD Owusu-Sekyere and LK Sam-Amoah. *Asian Journal of Plant Sciences*.
44. **E.E. Sam-Amoah** (2010). Using Residual Moisture to Support a Second Crop in a Rice-Based Cropping System in Two Different Agro-Ecological Zones in Ghana. *ARPN Journal of Agricultural and Biological Science*.
45. **LK Sam-Amoah** (2007). Assessment of Dried Mango Chips Physio-Organoleptic Properties Under Different Pretreatments. *University of Cape Coast, Cape Coast*.
46. **LK Sam-Amoah** (2005). Is rice self-sufficiency in Ghana possible?: the case of irrigated and valley bottom ecologies. *Journal of the Ghana science Association*. https://www.africabib.org/rec.php?RID=Q00040534
47. **LK SAM-AMOAH** (2001). ASSESSING THE PERFORMANCE OF IRRIGATION SCHEMES VVITH MINIMUM DATA ON VVATER DELIVERIES. *IRRIGATION AND DRAINAGE*. https://scholar.google.com/scholar?cluster=15422985078693594457&hl=en&oi=scholarr
48. **LK Sam-Amoah** (2001). Assessing the performance of irrigation schemes with minimum data on water deliveries 1. *Irrigation and Drainage: The journal of the International Commission on Irrigation and Drainage*. https://doi.org/10.1002/ird.12
49. **LK Sam-Amoah** (2001). The experience of irrigation management transfer in Ghana: a case study of Dawhenya Irrigation Scheme. *Irrigation and Drainage Systems*. https://doi.org/10.1023/a:1017550914360
50. **LK Sam-Amoah** (1996). Comparative analysis of évapotranspiration using climatic factors. *Proceedings of the 2nd national Conference on Agricultural Engineering, Sept*.

Book chapters 1

1. **L. K. Sam-Amoah**, R. O. Darko, J. D. Owusu-Sekyere (2024). Calibration and Validation of Aquacrop for Hot Pepper (Legon 18) Irrigation. *Research Advances and Challenges in Agricultural Sciences Vol. 1*. https://doi.org/10.9734/bpi/racas/v1/6631b

Reports 1

1. **LK Sam-Amoah** (2008). Governance and sustainable development. *Centre for Development Studies*. https://scholar.google.com/scholar?cluster=7360567036790373953&hl=en&oi=scholarr

Theses 1

1. **Livingstone Kobina Sam-Amoah** (1993). The modelling of weed competition in broadcast rice. *University of Newcastle upon Tyne*. https://scholar.google.com/scholar?cluster=3670509020885893444&hl=en&oi=scholarr