James Seutra Kaba, PhD

**Senior Lecturer in Agronomy and Agroforestry**

College of Agriculture and Natural Resources

Kwame Nkrumah University of Science and Technology

Tel: (+233) 247788011 / 501682533

Email: [seutra@yahoo.com](mailto:seutra@yahoo.com) / [jskaba@knust.edu.gh](mailto:jskaba@knust.edu.gh)

[**Scopus Author ID:** 57204876680](http://www.scopus.com/inward/authorDetails.url?authorID=57204876680&partnerID=MN8TOARS)

**Google Scholar**: <https://scholar.google.com/citations?user=71YxoxgAAAAJ&hl=en>

**Profile**

* Agronomist and Agroforestry Scientist
* Certified Expert in Financing Nationally Determined Contributions (NDCs)
* Specialist in integrated nutrient/soil fertility management and Climate change

adaptation

* Specialist in integrating Science with farmers’ knowledge.

**Educational Background**

|  |  |  |
| --- | --- | --- |
| * **Institution** | * **Qualification** | **Year** |
| [Libera Università di Bozen](https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&uact=8&ved=0CCEQFjAAahUKEwiC96-Yn7_IAhUCXBQKHXk6B0M&url=https%3A%2F%2Fwww.unibz.it%2F&usg=AFQjCNEKMDzscTGHaxpqfJGhMi2HfbpDAQ&sig2=0OzQkoMM95bvUrX1JFVR2w)  (Italy) | PhD in Management of Mountain Environment and Agriculture | 2014 – 2017 |
| University of Ghana, Legon  (Ghana) | M. Phil Crop Science | 2009-2011 |
| University for Development Studies  (Ghana) | B.Sc. Agricultural Technology | 2003-2007 |
| Ghana Secondary School, Tamale  (Ghana) | * SSSC (Agriculture Science) | 2000-2002 |

**Additional Academic qualification**

|  |  |  |
| --- | --- | --- |
| Institution | Qualification | Year |
| Frankfurt School of Finance and Management (Germany)  Institute of Natural research and Agronomy (INRA), (Nancy, France) | Certificate: Certified Expert in Financing Nationally Determined Contributions (NDCs)  Certificate: Stable Isotopes in Forest Ecosystem Research | 2020-2021  2015 |

**Employment History**

**2022-Date:**

**Position:** Senior Lecturer

**Organization:** Kwame Nkrumah University of Science and Technology, Ghana

**2018-2022:**

**Position:** Lecturer

**Organization:** Kwame Nkrumah University of Science and Technology, Ghana

**2013-2014:**

**Position:** Crop officer (Upper East Region)

**Organization:** Canadian Hunger foundation-ACDEP.

**2008 – 2010:**

**Position:** Credit Officer (Operations)

**Organization:** World Vision Ghana -APED, Tamale - Northern Region

**2007 – 2008:**

**Position:** Agronomist and Research assistant.

**Organization:** University for Development Studies (UDS) Tamale, Ghana.

**Addition Research Experience**

**2024-2025:**

**Position:** Postdoctoral Research Fellow “Network of Excellence for Land Governance in Africa (NELGA)"

**Organization:** Deutsche Gesellschaft für Internationale Zusammenarbeit

(GIZ) under DAAD

**2020-2023:**

**Position:** Research Fellow

**Organization:** Africa Research and Impact Network (ARIN), Kenya

**2020-2021:**

**Position:** Postdoctoral Research Fellow “Climate change research Alumni and Postdocs in Africa (climapAfrica programme)”

**Organization:** The German Academic Exchange Service (DAAD) and West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL)

**Past and Current Research/Projects**

1. "Exploiting the rhizosphere microbiome of cocoa trees to improve seedling survival under drought stress (2023-2024). DFG funded project under the African-German Scientific Exchange in the Field of Sustainable Intensification of Agriculture. Total amount of 53,615 Euros (Project No. 528791689)
2. "Improving Drought Tolerance and Survival Rate of Cocoa Seedlings with Potassium Fertilizers and Arbuscular Mycorrhiza" (**2020 to 2021)**, sponsored by KReF KNUST/the German Academic Exchange Service (DAAD) under the programme “Climate Research for Alumni and Postdocs in Africa, 2020”. Total of 10,000 Euros (Funding ID: 57516494). Principal investigator.
3. “Climate-Smart Cocoa Agroforestry Research in Ghana” (**2020-2025)**, sponsored by the DANIDA Fellowship Center. Total amount of DKK 11, 750,000 (Project no. 19-11. GHA) Member of research team and co-lead investigator for Work package 2 (Climate-smart soils for sustainable Cocoa Agroforestry systems).
4. “Integrating Climate Smart Agri-Innovative Technology Adoption and Agribusiness Management Skills to Improve the Livelihoods of Smallholder Cocoa Farmers in Ghana” (**2019-2020**), sponsored by Birkbeck - University of London, UK. Total amount of 8,800 British pounds (Grant’s ref:105123-23). Principal researcher for Ghana team.

**International and National Awards Received**

1. Japan Award 2021: Japan International Award for top three Young Agriculture Researcher from Developing Countries. By: Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) and Japan International Research Center for Agricultural Sciences (JIRCAS). (<https://www.affrc.maff.go.jp/kokusaikenkyu/japan_award_211029.html>)
2. ISHS Student Award 2017: Best Oral Presentation at the VIII ISHS symposium on mineral nutrition of fruit crops. By: The International Society for Horticultural Sciences (ISHS).
3. South Tyrol Doctoral Award 2013-2017: By the Province of South Tyrol and Free University of Bozen-Bolzano, Italy.
4. GETFUND Award for 2005/2006 Brilliant and needy student. By: The Ghana Education Trust Fund and The University for Development Studies, Tamale.

**Regular Reviewer for the following Journals**

1. Clean Technologies and Environmental policy (Springer Nature)
2. Pant and Soil (Springer Nature)
3. Waste Management (Elsevier Ltd.)
4. Agroforestry Systems (Springer Nature)
5. Open Agriculture (De Gruyter Open Access)
6. Archives of Agronomy and soil science (Taylor & Francis)
7. Scientific Africa (Elsevier Ltd)
8. Discover Agriculture (Springer Nature)
9. Journal of Plant nutrition (Taylor & Francis)

**List of current Research Publications**

1. Andoh H and **Kaba JS** (2025). Assessment and projection of climate change impact on Ghana’s agricultural crops: evidence from cassava (*Manihot esculenta*) production in the coastal Savannah agroecological zone. *Theoretical and Applied Climatology*. <https://doi.org/10.1007/s00704-025-05428-9>
2. Muhammed H., **Kaba JS.,** Abunyewa AA, Kwashie KSG., Appiah-Kubi Z., Asare AY., Agyei EK., Yamoah FA., Issahaku I & Ntiamoah P (2025). Nurturing with nature: the efficacy of arbuscular mycorrhizal fungi microbe for cocoa sector environmental management, *Journal of Plant Nutrition*. [**https://doi.org/10.1080/01904167.2025.2461276**](https://doi.org/10.1080/01904167.2025.2461276)
3. Abukari, A., **Kaba, JS.,** & Abunyewa, A. A. (2025). Agricultural Utilization of Biochar: A Review of Production Technologies. *Turkish Journal of Agriculture-Food Science and Technology*, *13*(3), 802-813. **https://doi.org/10.24925/turjaf.v13i3.802-813.7357**
4. **Kaba**, J. S., Agyei, E. K., Avilineni, M. K. C., Yamoah, F. A., Issahaku, I., Ntiamoah, P., ... & Mas-Ud, M. (2024). Agroforestry as an old approach to a new challenge of combating climate change: a critical analysis of the cocoa sector. *Discover Agriculture*, *2*(1), 1-10. <https://doi.org/10.1007/s44279-024-00120-4>
5. Boadu, KB., Soadwa, CO., Adamu, O., Ansong, M., **Kaba, JS**., Anokye, R (2024). The Impact of Varying Biochar Rate and Particle Size Derived from Bamboo Culm Residue and Coconut Husk Mixture on Lettuce (Lactuca sativa cv. ‘Tiberius’) Seed Germination and Leaf Morphology. J Sustain Res. 2024;6(3):e240054. <https://doi.org/10.20900/jsr20240054>
6. Meena, V. S., Rakshit, A., Meena, M. D., Baslam, M., Fattah, I. R., Lam, S. S., **Kaba, J. S**. (2024). Waste Management for Sustainable and Restored Agricultural Soil. Elsevier Inc. Academic Press. pages: 460 <https://doi.org/10.1016/C2022-0-00048-9>
7. Anokye, J., Abunyewa, A. A., Jorgensen, U., **Kaba, J. S.,** Twum-Ampofo, K., Dawoe, E., ... & Ulzen, J. (2024). Mitigation of greenhouse gas (GHG) emissions through shade systems and climate-smart soil fertility interventions in cocoa landscapes in the Semi-deciduous ecological zone of Ghana. Soil Advances, 100001. <https://doi.org/10.1016/j.soilad.2024.100001>
8. Yamoah F.A and **Kaba J.S** (2024). Integrating climate-smart agri-innovative technology adoption and agribusiness management skills to improve the livelihoods of smallholder female cocoa farmers in Ghana, *Climate and Development*, 16 (3):169–175 <https://doi.org/10.1080/17565529.2021.2024125>
9. Kwashie, G. K., **Kaba, J. S.,** Appiah-Kubi, Z., Abunyewa, A. A., Asare, A. Y., Agyei, E. K., & Muhammed, H. (2023). Synergic effect of Arbuscular mycorrhizal fungi and potassium fertilizer improves biomass-related characteristics of cocoa seedlings to enhance their drought resilience and field survival. *Open Agriculture*, *8*(1), 20220239. <https://doi.org/10.1515/opag-2022-0239>
10. Abukari, A.., **Kaba, J.S.,** Dawoe, E., Abunyewa A.A (2022)*.* A comprehensive review of the effects of biochar on soil physicochemical properties and crop productivity. *Waste Dispos. Sustain. Energy*. <https://doi.org/10.1007/s42768-022-00114-2>
11. Yeboah O.S., Amponsah I.K., **Kaba J.S** & Abunyewa A.A (2022). Abundance, richness, and use of medicinal plants under different land uses in the Guinea Savanna Zone of Northern Ghana, *All Earth*. 34:1, 202-214. <https://doi.org/10.1080/27669645.2022.2105485>
12. Yeboah O.S., Amponsah I.K., **Kaba J.S** & Abunyewa A.A (2022). Variability of soil physicochemical properties under different land use types in the Guinea savanna zone of northern *Ghana*, *Cogent Food & Agriculture,* 8:1, 2105906. <https://doi.org/10.1080/23311932.2022.2105906>
13. **Kaba J.S**., Asare A.Y., Andoh H., Kwashie G K.S and Abunyewa A.A (2022). Towards sustainable cocoa (Theobroma cacao L) production: the role of potassium fertilizer in cocoa seedlings drought recovery and survival. *International Journal of Fruit Science*, 22:1, 618-627. [**https://doi.org/**10.1080/15538362.2022.2092932](https://doi.org/10.1080/15538362.2022.2092932)
14. Saah Konadu J.A., **Kaba JS** and Abunyewa AA (2022). Inorganic nitrogen fertilizer, biochar particle size and rate of application on lettuce (*Lactuca sativa* L.) nitrogen use and yield, *All Life*, 15:1, 624-635, <https://doi.org/10.1080/26895293.2022.2080282>
15. Gorleku, D. O., Badu, G. P. A., Afele, J. T., **Kaba, J. S.,** & Abunyewa, A. A. (2022). Assessing the Efficiency of Moringa oleifera Leaf Meal on the Growth Performance of Broiler Chicken. Journal of Applied Life Sciences and Environment. 54 (4): 370-376. <https://doi.org/10.46909/journalalse-2021-032>
16. **Kaba J.S.,** Abunyewa A.A., Kugbe J., Kwashie K.S.G., Ansah O.E and Andoh H (2021). Arbuscular mycorrhizal fungi and potassium fertilizer as plant biostimulants and alternative research for enhancing plants adaptation to drought stress: Opportunities for enhancing drought tolerance in cocoa (*Theobroma cacao* L.), *Sustainable Environment*, 7:1, 1963927, <https://doi.org/10.1080/27658511.2021.1963927>
17. Mas-Ud M., Dokurugu F., **Kaba J.S** (2021). Effectiveness of cowpea (Vigna unguiculata L.) living mulch on weed suppression and yield of maize (Zea mays L.). *Open Agriculture. 6: 489–497.* <https://doi.org/10.1515/opag-2021-0031>*.*
18. **Kaba J.S** and Abunyewa A.A (2021). New aboveground biomass and nitrogen yield in different ages of gliricidia (*Gliricidia sepium* Jacq.) trees under different pruning intensities in moist semi-deciduous forest zone of Ghana. *Agroforest System* 95:835–842**.** <https://doi.org/10.1007/s10457-019-00414-3>
19. **Kaba J.S**, Yamoah F.A and Acquaye A (2021). Towards sustainable agroforestry management: Harnessing the nutritional soil value through cocoa mix waste. *Waste Management* 124:264–272. <https://doi.org/10.1016/j.wasman.2021.02.021>.
20. Yamoah FA., **Kaba J.S**, Botchie D and Amankwah-Amoah J (2021). Working towards Sustainable Innovation for Green Waste Benefits: The Role of Awareness of Consequences in the Adoption of Shaded Cocoa Agroforestry in Ghana. *Sustainability*, 13, 1453. <https://doi.org/10.3390/su13031453>
21. **Kaba JS**, Otu-Nyanteh A., Abunyewa A.A (2020). The role of shade trees in influencing farmers’ adoption of cocoa agroforestry systems: Insight from semi-deciduous rain forest agroecological zone of Ghana. NJAS - *Wageningen Journal of Life Sciences*. *92:1, 1-7* <https://doi.org/10.1016/j.njas.2020.100332>
22. Yamoah F.A., **Kaba J.S.**, Amankwah-Amoah J and Acquaye A (2020). Stakeholder Collaboration in Climate-Smart Agricultural Production Innovations: Insights from the Cocoa Industry in Ghana. *Environmental Management*. <https://doi.org/10.1007/s00267-020-01327-z>
23. Ochire-Boadu K., Abunyewa A.A., **Kaba J.S.**, Twum-Ampofo K., Dawoe E.LK., Agbenyega O and Barnes VR (2020). Improved legume fallows: Influence on nitrogen and microbial dynamics, and maize (*Zea mays L*) grain yield in subhumid zone of West Africa. *Cogent Food & Agriculture*, 6:1, 1785778. <https://doi.org/10.1080/23311932.2020.1785778>
24. **Kaba J.S.**, Zerbe S., Agnolucci M., Scandellari F., Abunyewa AA., Giovannetti M., Tagliavini M (2019). Atmospheric nitrogen fixation by gliricidia trees (*Gliricidia sepium* (Jacq.) Kunth ex Walp.) intercropped with cocoa (*Theobroma cacao L.)* in agroforestry systems. *Plant Soil: 435:323-336.* <https://doi.org/10.1007/s11104-018-3897-x>
25. **Kaba J.S.,** Zerbe S., Abunyewa A.A and Tagliavini M ([2019](tel:2019)). Tracing the nitrogen flow between Gliricidia and cocoa trees in intercropping system using the 15N natural abundant method. ***Acta Horticulturae*.** [1242](tel:1242): [587-592](tel:587-592). <https://doi.org/10.17660/ActaHortic.2019.1242.86>
26. Badu E., **Kaba J.S.,** Abunyewa, Akwasi A., Dawoe, Evans K., Agbenyega Olivia and Barnes, Rex V (2019). Biochar and Inorganic Nitrogen Fertilizer Effects on Maize (Zea mays L) nitrogen use and yield in Moist Semi deciduous Forest zone of Ghana. *Journal of Plant Nutrition.*42:19, 2407-2422. <https://doi.org/10.1080/01904167.2019.1659347>
27. **Kaba J.S,** Zerbe S., Zanotelli D., Abunyewa A.A., Tagliavini M (2018). Uptake of nitrogen by cocoa (*Theobroma cocoa* L) trees derived from soil decomposition of gliricidia (*Gliricidia sepium* Jacq.) shoots. *Acta Horticulturae****.*** Pp 263-269. <https://doi.org/10.17660/ActaHortic.2018.1217.33>
28. **Kaba J.S.,** Kumaga F.K., Ofori K (2014). Maximizing peanut (*Arachis hypogaea* L) yield in tropical soils: reducing harvest loss and increasing yield components, Germany. ISBN 978-3-659-22498-0. LAP LAMBERT Academic Publishing (BOOK CHAPTER).