


# PROF. JAYNE NJERI MUGWE; BSc, Mphil, PhD

## CURRICULUM VITAE

<http://agriculture.ku.ac.ke/index.php/faculty-profiles/faculty/78-template-details/design-a-features/70-dr-jayne-mugwe>

### 1.1 PERSONAL INFORMATION

#### 1.1.1 Prof. Jayne Njeri Mugwe

	<p><b>Qualifications:</b> BSc (Moi); M Phil (Moi); PhD (Kenyatta).</p> <p><b>ASSOCIATE PROFESSOR</b> <b>Area of Specialization:</b> Integrated Soil fertility Management.</p> <p><b>Email:</b> <a href="mailto:mugwe.jayne@ku.ac.ke">mugwe.jayne@ku.ac.ke</a>; <a href="mailto:jaynemugwe@yahoo.com">jaynemugwe@yahoo.com</a></p> <p>Designation: Associate Professor <a href="#">Google Scholar</a>:</p> <p><a href="#">ORCID ID</a></p> <p><a href="#">Research gate</a>:</p> <p><a href="#">Publons</a></p>
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#### 1.1.2 Academic qualifications and Professional Qualifications

Certificate	Institution	Qualification	Date awarded
Ph D	Kenyatta University	Soil Fertility Management	2007
M Phil	Moi University	Soil Science	1997
BSc	Moi University	Forestry	1989
KACE	Kangaru High School	3 principal passes and one subsidiary	1984
KCE	Mary Hill High School	Division one	1982

#### Summary

Associate Professor in research methods and applied soil science dedicated to guiding students through the research journey. The aim is to help graduate students conduct quality research and publish in credible journals. A researcher in agricultural and environmental science with extensive experience in managing and implementing research projects. Has published more than 60 peer -reviewed journal articles, >25 book chapters and participated in numerous scientific conferences

### **1.1.3 EMPLOYMENT HISTORY/WORKING EXPERIENCE**

**January 2022 to Date:** Ag. Registrar, Research, Innovation and Outreach

#### **Duties**

**Work closely on a day to day basis with Deputy Vice Chancellor Research, Innovation and outreach in:** Coordination and administration of Kenyatta University Research Vision and Mission. Specific roles include;

1. Coordinate and implement programmes and activities that support research, innovation, outreach and extension related activities
2. Encourage and support the development and implementation of high quality research initiatives while maintaining a culture of compliance among faculty staff and students
3. Build, strengthen and enhance skills and competencies for research and innovation among faculty staff and students

**February 2020 to December 2021 Associate Professor:** Department of Agricultural Science and Technology

#### **Duties**

- Teaching and supervising undergraduate and post graduate students
- Examination of PhD and Masters thesis
- Attend oral examination for PhD and masters students
- Member of departmental post graduate studies
- Member of Departmental quality Management systems

#### **Units Taught**

**Graduate Courses;** KCU 801: Research Methods, KRM 813 Advanced Agriculture and Environment, KRM 802: Soil Fertility Evaluation, KRM 804: Cropping Systems and Agroforestry

**Undergraduate courses;** KCU 400: Research Project, KRM 305: Research Methods and Agricultural Experimentation; KCU 202: Principles of Soil Science, KRM 300 Soil Fertility and plant nutrition; KST 422: Agroforestry Development

**May 2013 to January 2020:** Senior Lecturer (KU)

**September 2017 to May 2018:** Sabbatical leave at the University of Embu (Reviewed Curriculum in BSc Agriculture, and taught Research Methods courses at both undergraduate and post graduate levels )

**August 2011 to February 2017:** Chairperson: Department of Agricultural Resource Management

**April 2009 to May 2013:** Lecturer (KU)

**2004 to 2009:** Senior Research Officer: Kenya Forestry Research Institute (KEFRI) HQs

**1991 to 2004:** Research Officer: KEFRI

**1990 to 1991:** Assistant Research Officer: KEFRI

#### **Area of Specialization**

- Integrated Soil Fertility Management; Research Methods

## Research Interests

- Soil Health and fertility
- Soil productivity
- Legume cropping systems
- Adoption of agricultural technologies
- Climate Change

## **ADMINISTRATIVE RESPONSIBILITIES**

- August 2011 to February 2017: Chair of Department of ARM
- 3<sup>rd</sup> March to 15<sup>th</sup> April, 2015: Ag Dean, School of Agriculture and Enterprise Development.
- April 2009 to August 2011: In charge of Timetable; Department Brochure development
- April 2009 to August: In charge of Field trips coordination
- Chairperson: Soil Science Society of East Africa (2010 to 2011)

### **1.1.4 Major Achievements since 2013**

1. **September, 2020:** Research Grant by Kenya Climate Smart Agriculture Project (KSCAP). *“Balanced nutrition for management of soil acidity and nutrients deficiency for sustained agricultural productivity”*; **KES 9,524,813.**
2. **February, 2020.** Promoted to Associate Professor of Soil Fertility Management
3. **May 2019:** Grant to Host East Africa Community Masters scholarships (Masters in integrated Soil fertility Management)
4. **April 2019:** Proposal to Host PASET PhD scholarships in integrated Soil fertility Management) selected for on-site visits
5. **Published 65 articles** in peer reviewed journals
6. **Published Seven (7)** Book chapters (Total 39 Book Chapters)
7. **Published Eight (8)** project Reports
8. **14 Papers** in peer reviewed proceedings
9. **15 Papers** presented in conferences but not in proceedings
10. **Post graduate supervision:** Successfully supervised Four (4) PhD students and 32 Masters students since Joining KU in 2009.
11. **External Examiner:** South Eastern University, Captain Cook University, Jomo Kenyatta of Agriculture and Technology
12. **Administration:** Chair of Department (ARM) for 5.6 years (Headed accreditation of Animal Health and production programme and creation of the Department of Animal Sciences; initiated open learning programmes)
13. **Grants:** Winning Research Grant to carry of (AGRA 2013 SHP 014) that started in May 2014 and ended in April 2017 (closure letter received) Title: Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya (**USD 549,645**) <http://socoproject.org/>
14. Best paper in food security during the 11<sup>th</sup> Egerton University conference held in March, 2017
15. **Grants:** Successfully completing Donor funded project (AGRA 2009 SHP 022) and receiving closure letter after fulfilling requirements of the grant (**USD 806,629**) <http://research.ku.ac.ke/index.php/en/component/content/article/119-latest-research-news/286-dirt-matters-invest-in-soils-improve-livelihoods>
16. Earning a Nine Months Sabbatical leave to University of Embu
17. Supporting 15 Masters student in their Research Projects through AGRA SHP 014 Grant (Self Initiative)
18. Supporting two (2) Masters student with CONNESSA Grant

19. Community outreach through working with farmers and preparing extension materials

### **1.1.5 Other recent responsibilities and duties**

1. Member of committee on enhancing completion rate of post graduate students at Kenyatta University
2. Secretary of University Research Advisory Board (URAB)
3. Chair of Science, Technology and Innovation (STI) mainstreaming committee

## **2.0 RESEARCH AND PUBLICATIONS**

### **2.1 PAPERS/PUBLICATIONS IN REFEREED JOURNALS**

1. Njenga MW, **Mugwe JN**, Mogaka H, Nyabuga G, Kiboi MN, Ngetich F, Mucheru-Muna M, Sijali I, Mugendi D (2021). Determinants of Farmers' Knowledge on Soil and Water Conservation Technologies in Dry Zones of Central Highlands, Kenya. *Journal of Agricultural Extension*, 25: 127-143, <http://www.journal.aesonnigeria.org/index.php/jae/article/view/297>
2. Mugi-Ngenga EW, Kiboi MN, Mucheru-Muna MW, **Mugwe JN**, Mairura FS, Mugendi DN, Ngetich FN (2021). Indigenous and conventional climate-knowledge for enhanced farmers' adaptation to climate variability in the semi-arid agro-ecologies of Kenya. *Environmental Challenges* 5 (2021) 100355, <https://doi.org/10.1016/j.envc.2021.100355>
3. Njenga MW, **Mugwe JN**, Mogaka H, Nyabuga G, Kiboi MN, Ngetich F, Mucheru-Muna M, Sijali I, Mugendi D (2021). Communication factors influencing adoption of soil and water conservation technologies in the dry zones of Tharaka-Nithi County, Kenya. *Heliyon*, <https://doi.org/10.1016/j.heliyon.2021.e08236>
4. Kimiti W W, Mucheru-Muna MW, **Mugwe JN**, Ngetich KF, Kiboi MN and Mugendi DN (2021). Lime, manure and Inorganic Fertilizer Effects on Soil Chemical Properties, Maize Yield and Profitability in Acidic Soils in Central Highlands of Kenya . *Asian Journal of Environment & Ecology*, Page 40-51 DOI: [10.9734/ajee/2021/v16i330250](https://doi.org/10.9734/ajee/2021/v16i330250). Published: 21 September 2021
5. G.G. Mwaura , M.N. Kiboi , **J.N. Mugwe** , G. Nicolay , E.K. Bett, A. Muriuki , C.M. Musafiri , F.K. Ngetich (2021) Economic evaluation and socioeconomic drivers influencing farmers' perceptions on benefits of using organic inputs technologies in Upper Eastern Kenya, *Environmental Challenges* doi: <https://doi.org/10.1016/j.envc.2021.100282>
6. Ndeke AM, **Mugwe JN**, Mogaka H, Nyabuga G, Kiboi M, Ngetich FK, Mucheru-Muna M, Sijali I, Mugendi DN. (2021). Gender-specific determinants of Zai technology use intensity for improved soil water management in the drylands of Upper Eastern Kenya" *Heliyon* 7 e07217. <https://doi.org/10.1016/j.heliyon.2021.e07217>
7. **Mugwe J.N** and Oduor E.O. (2021). Integrated Soil Fertility Management Approaches for Climate Change Adaptation, Mitigation, and Enhanced Crop Productivity. Springer Nature Switzerland AG 2021. W. Leal Filho et al. (eds.), Handbook of Climate Change Management, [https://doi.org/10.1007/978-3-030-22759-3\\_325-1](https://doi.org/10.1007/978-3-030-22759-3_325-1)
8. Mucheru-Muna MM, Ada MA, **Mugwe JN**, Mairura SM, Ada A, Mugi-Ngenga E, Zingore S, Mutegi JK (2021). Socio-economic predictors, soil fertility knowledge domains and strategies

- for sustainable maize intensification in Embu County, Kenya. *Heylion* 7:2 e06345.  
<https://doi.org/10.1016/j.heliyon.2021.e06345>
9. Mwaura, G. G., Kiboi, M. N., Bett, E. K., **Mugwe, J. N.**, Muriuki, A., Nicolay, G., & Ngetich, F. K. (2021). Adoption Intensity of selected organic-Based soil fertility management technologies in the Central Highlands of Kenya. *Frontiers in Sustainable Food Systems*, 4.  
<https://doi.org/10.3389/fsufs.2020.570190>
  10. **Mugwe, J.N.**, Ayieko D, Bett E and Mogaka., H (2020). Determinants of smallholders farmers' participation in collective marketing of maize in the central highlands of Kenya. *African Journal of Rural Development*, [S.l.], v. 4, n. 2, p. 225-241., April, 2020. ISSN 2415-2838.  
<https://www.afjrd.org/jos/index.php/afjrd/article/view/2000>.
  11. **Mugwe JN**, Ngetich FK and Oduor E (2019). Integrated Soil Fertility Management: Evolving paradigms toward integration© Springer Nature Switzerland W. Leal Filho et al. (eds.), *Zero Hunger*. [https://doi.org/10.1007/978-3-319-69626-3\\_71-1](https://doi.org/10.1007/978-3-319-69626-3_71-1)
  12. Mwende N, Danga B, **Mugwe J.N.**, and Kizito (2019). Effect of Integrating Tied ridging, Fertilizers and Cropping Systems on Maize Performance' in Arid and Semi-Arid Lands of Eastern Kenya. *African Journal of agricultural Science and technology*: 5: (2) 86-91  
<http://www.ajest.info/index.php/ajest/article/view/355>
  13. Murage, FM, **Mugwe J.N.**, Ngetich, K.F, Mucheru-Muna, M.M and Mugendi, DN (2019). Adoption of soybean by smallholder farmers in the Central Highlands of Kenya. *African Journal of Agricultural economics and Rural Development* 7 (5) 1-12. <https://ir-library.ku.ac.ke/handle/123456789/19470>
  14. Mwebia F,W.. **Mugwe, J.N.**, Mucheru-Muna M., Mugendi, D.N. (2019). Influence of farmer groups' characteristics on up scaling uptake of soil fertility technologies in Eastern Kenya. (2019). *Journal of Agriculture* 6 (1) 1-17 <http://www.researchjournali.com/view.php?id=4848>
  15. Bett, E., **Mugwe, J.**, Nyalugwe, N. Haraman, E., Williams, F., Tambo, J., Wood, A. and Bundi, M. (2018). Impact of plant clinics on disease and pest management, tomato productivity and profitability in Malawi. *CABI Working Paper* 11, 30pp.  
<https://dx.doi.org/10.1079/CABICOMM-25-8089>
  16. Verde, B., Danga, B., **Mugwe J.**, (2018). Interactive effect of goat manure, phosphate fertilizer and lime on soil fertility in Embu County, Kenya. *Discovery Agriculture*: 4:1-8.  
<http://ir-library.ku.ac.ke/handle/123456789/18731>
  17. Kiboi, M.N., Ngetich, K.F., Diels, J., Mucheru-Muna, M., **Mugwe, J.**, Mugendi, D.N (2017). Minimum tillage, tied ridging and mulching for better maize yield and yield stability in the Central Highlands of Kenya. *Soil & Tillage Research*, 170: 157-166.  
<https://doi.org/10.1016/j.still.2017.04.001>
  18. Njeru, P., Maina, I., Lekasi J., Kimani, S., Esilaba, A, **Mugwe, J.** and Mucheru-Muna, M (2016). Climate Smart agriculture adaptation strategies for rainfed agriculture in drought prone areas of central Kenya. *International Journal of Agricultural Resources, Governance and Ecology*. Vol 12 (2) 113-124. <https://doi.org/10.1504/IJARGE.2016.076928>
  19. Mugi-Ngenga EW, Mucheru-Muna MW, **Mugwe JN**, Ngetich FK, Mairura FS, and Mugendi DN (2016). Household's socio-economic factors influencing the level of adaptation to climate

- variability in the dry zones of Eastern Kenya. *Journal of Rural Studies* 43 (2016) 49-60. <https://doi.org/10.1016/j.jrurstud.2015.11.004>
20. Musyoki JK, Mugwe JN, Mutundu K & Muchiri M. (2016) Factors influencing level of participation of community forest associations in management forests in Kenya, *Journal of Sustainable Forestry*, 35:3, 205-216, DOI: 10.1080/10549811.2016.1142454. <http://dx.doi.org/10.1080/10549811.2016.1142454>
  21. Masika KO, Mucheru-Muna MM, Ngetich FK, **Mugwe JN**, Mugendi DN, Mairura F, Shisanya C and Makokha GL (2015). Potential of deterministic and geostatistical rainfall interpolation under high rainfall variability and dry spells: case of Kenya's Central Highlands. *Theoretical and applied climatology* Vol 199 No 3-4. ISSN 0177-798X. *Theoretical Applied Climatology*. DOI 10.1007/s00704-015-1413-2. <https://hdl.handle.net/10568/73658>
  22. Masika OK, Mucheru-Muna MM, Ngetich F K, **Mugwe JN**, Mugendi DN, Mairura FK and Muriuki J (2015). Using APSIM Model as a Decision –support tool for long term integrated nitrogen management and maize productivity under semi arid conditions in Kenya. *Experimental Agriculture*: 52 (2) 279-299 <https://doi.org/10.1017/S0014479715000095>
  23. Kabirigi M., Musana B., Ngetich F, **Mugwe J**, Mukuralinda A and Nabahungu NL (2015). Applicability of conservation agriculture for climate change adaptation in Rwanda's situation. *Journal of Soil Science and Environmental Management*: 6 (9) 241-248. DOI 10.5897/JSSEM15.0508 . <https://hd.handle.net/10568/76573>
  24. Masika OK, Mucheru-Muna MM, Ngetich FK, **Mugwe JN**, Mugendi DN and Mairura FK (2015). Rainfall Variability, Drought Characterization, and Efficacy of Rainfall Data Reconstruction: Case of Eastern Kenya. *Advances in Meteorology* Volume 2015 (2015), Article ID 380404, 16 pages. <http://dx.doi.org/10.1155/2015/380404>
  25. Bashagaluke J., Nicole N., Didier F. , Mochoge B., **Mugwe J**, Walangululu J., (2015). Application of infrared technique in soil properties characterization in South Kivu province of DR Congo. *African Journal of Food Science and Technology* (ISSN: 2141-5455) Vol. 6(2) pp. 58-67. <http://www.interestjournals.org/AJFST>
  26. Muchai S K, Mucheru-Muna MW, **Mugwe JN**, Mugendi DN and Mairura FK (2014). Client focused Extension approach for disseminating soil fertility management in central Kenya. *International journal of Agricultural Extension (IJAЕ)* 02 (02) 129-136. <http://escijournals.net/index.php/IJAЕ/article/view/801>  
<http://ir-library.ku.ac.ke/handle/123456789/11707>
  27. Ahmat1 FL, **Mugwe JN**, Kimani S, Gweyi JO (2014). Maize response to Tithonia diversifolia and rock phosphate application under two maize cropping systems in Kenya. *Journal of Applied Biosciences* 79:6983 – 6991 ISSN 1997–5902. <http://dx.doi.org/10.4314/jab.v79i1.18>
  28. Macharia JM, **Mugwe JN**, Mucheru-Muna M, Mugendi DN (2014). Socioeconomic factors influencing levels of knowledge in soil fertility management in the central highlands of Kenya. *Journal of Agricultural Science and Technology*; 701-711 ISSN 1939-1250 doi: 10.17265/2161-6264/2014.09.003. <https://ir-library.ku.ac.ke/handle/123456789/10372>



29. Ngetich, K. F., Diels, J., Shisanya, C. A., **Mugwe, J. N.**, Mucheru-Muna, M. and Mugendi, D. N. (2014). Effects of selected soil and water conservation techniques on runoff , sediment yield and maize productivity under sub-humid and semi-arid conditions in Kenya. *Catena*, 121, 288-296. doi: 10.1016/j.catena.2014.05.026. <https://doi.org/10.1016/j.catena.2014.05.026>
30. Mucheru-Muna, M, Mugendi, D.N., Pypers P, **Mugwe, J.N.**, Kungu, J., Vanlauwe, B. and Merckx, R (2014). Enhancing maize productivity and profitability using organic inputs and mineral fertilizer in central Kenya smallhold farms. *Experimental Agriculture*, volume 50 (2), pp. 250 <https://doi.org/10.1017/S0014479713000525>
31. Matusso JMM, **Mugwe JN** and Mucheru-Muna MW (2014). Effect of different maize (*Zea mays* L.) – soybean (*Glycine max* (L.) Merrill) intercropping patterns on yields and land equivalent ratio. *Journal of Cereals and Oilseeds*: 4 (4)48-57. <http://ir-library.ku.ac.ke/handle/123456789/8781>
32. Ngetich, F.K., Mucheru-Muna, M., **Mugwe, J.N.**, Shisanya, C.A., Diels, J., Mugendi, D.N. (2014). Length of growing season, rainfall temporal distribution, onset and cessation dates in the Kenyan highlands. *Agricultural and Forest Meteorology* 188: 24-32. doi: 10.1016/j.agrformet.2013.12.011. <https://doi.org/10.1016/j.agrformet.2013.12.011>
33. Matusso JMM, **Mugwe JN** and Mucheru-Muna MW (2014). Effect of different maize (*Zea mays* L.) – soybean (*Glycine max* (L.) Merrill) intercropping patterns on yields, light interception and leaf area index in Embu West and Tigania East sub counties. *Academic Research Journal of Agricultural Science and Research* Vol. 2(2), pp. 6-21.
34. Matusso JMM, **Mugwe JN** and Mucheru-Muna MW (2014). Changes of Soil Inorganic N, Soil Organic C and N Uptake by Maize and Soybean under Different Intercropping Patterns in Embu West and Tigania East Counties of Central Kenya. *Academic Research Journal of Agricultural Science and Research* Vol. 2(2), pp. 22-33, April 2014
35. Okeyo, A.I., Mucheru-Muna, M., **Mugwe, J.N.**, Ngetich, F.K., Mugendi, D.N., J. Diels, C.A. Shisanya, (2014). Effects of selected soil and water conservation technologies on nutrient losses and maize yields in the central highlands of Kenya. *Agricultural Water Management*, 137, 52-58. <http://www.sciencedirect.com/science/article/pii/S0378377414000390>
36. Matusso, J. M. M., **Mugwe J. N.** and Mucheru-Muna M. (2014) Effects of Different Maize (*Zea mays* L.) – Soybean (*Glycine max* (L.) Merrill) Intercropping Patterns on Yields and its Economics. *Advanced Journal of Agricultural Research* Vol. 2(003), pp. 038-048, ISSN: 2360-9354 Advanced Journals <http://www.advancedjournals.org/AJAR>
37. Matusso, M., **Mugwe, J.N.**, Mucheru-Muna, M. (2014). Effects of different maize (*Zea mays* L.) – soybean (*Glycine max* (L.) Merrill) intercropping patterns on soil mineral-N, N-uptake and soil properties *African Journal of Agricultural Research: Vol 9 (1)*, pp. 42-55, 2 January, 2014 DOI: 10.5897/AJAR2013.7178 ISSN 1991-637X ©2014. <http://ir-library.ku.ac.ke/handle/123456789/8762>
38. Verde BS, Danga BO and **Mugwe JN** (2013). Effects of manure, lime and mineral P fertilizer on soybean yields and soil fertility in a Humic Nitisol in the central highlands of Kenya. *International Journal of Agricultural Science Research* : 2 (9) 283-291.

39. Nduwumuremyi A, Ruganzu R, **Mugwe JN**, Rusanganwa AC (2013). Effects of unburned lime on soil pH and base cations in acidic soil. *ISRN Soil Science* Volume 2013, Article ID 707569, 7 pages. <http://dx.doi.org/10.1155/2013/707569>
40. Verde BS, Danga BO and **Mugwe JN** (2013). The effects of Manure, Lime and fertilizer on N uptake and Soybean Yields (Glycine Max (L.) Merril) in the central highlands of Kenya. *Journal of Environmental Science and Engineering* B2 111 – 116 ISSN a1934-8932.
41. Athanase N, **Mugwe JN**, Ruganzu V, Rusanganwa C and Nyirinkwaya B (2013). Effects of Travertine on Selected Soil Properties and yield of Irish Potato (*Solanum Tuberosum L*) in acidic soils. *Journal of Agricultural Science and Technology* A3 175 – 182 ISSN 1939-1250.
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47. Nduwumuremyi, A, Ruganzu, V., **Mugwe, J.N.** Sylvestre, H. (2013). Soil acidification and lime quality: sources of soil acidity, its effects on plant nutrients, efficiency of lime and liming requirements, *Agricultural Advances*: 2(9) 259-269, ISSN 2251-7820, DOI: 10.14196/aa.v2i9.988.
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50. Kimaru SM, **Mugwe J**, Mucheru-Muna MW, Mugendi DN (2013). Gender disparities in uptake of information on soil fertility management in the central highlands of Kenya. *International Journal of Agricultural Science and research (IJASR)* 3 (2) 197-206. <https://www.researchgate.net/publication/262680353>
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54. Mucheru-Muna MW, Mugendi D, **Mugwe J**, and Kung'u J (2009). Soil mineral N dynamics in a maize crop following different soil fertility amendments in different soil fertility status in sub-humid and semiarid regions in Central Kenya. *Research Journal of Agriculture and Biological Sciences 5 (6): 978-993*
55. **Mugwe JN**, Mucheru-Muna MM, Mugendi DN, Kung'u JB, Bationo A and Mairura F (2009) Adoption potential of selected organic inputs for improving soil fertility in the central highlands of Kenya. *Agroforestry Systems, 76: 467-485*
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## **2.2: Other Publications**

### **2.2.1 PEER-REVIEWED BOOK CHAPTERS WITH ISBN NUMBERS**

#### **2.2.1 Since May, 2013**

S/n	Author	Year	Title	ISBN/ISSN Reference No.
1	<b><u>Mugwe JN and Oduor E</u></b>	2020	Integrated soil fertility management approaches for climate change adaptation, mitigation, and enhanced crop productivity	Handbook on Climate Change
2	<b><u>Mugwe JN</u></b> , Ngetich FK and Oduor E	2019	Integrated Soil Fertility Management: Evolving paradigms toward integration	© Springer Nature Switzerland AG 2019 W. Leal Filho et al. (eds.), Zero Hunger, <a href="https://doi.org/10.1007/978-3-319-69626-3_71-1">https://doi.org/10.1007/978-3-319-69626-3_71-1</a>
3	Njeru PNM, <b><u>Mugwe JN</u></b> , Mucheru-Muna M, Maina I, Kimaini S and	2018	Drought tolerant crops in Kirinyaga County, Kenya. Climate Smart Agriculture Adaptation Strategies.	In Leal Filho W (eds) Handbook for Climate Change Resilience. Springer, Cham.

	Lelgut D			<a href="https://doi.org/10.1007/978-3-319-71025-9_80-1">https://doi.org/10.1007/978-3-319-71025-9_80-1</a>
4	Harawa R, Sileshi G, Miguel M, Kanampiu JF, <b>Mugwe J</b> , Baijukya F; Karanu M, Ngwira A. Odendo M	2016	Scaling Out Maize/Soybean Production Systems in Sub-Saharan Africa In: Going beyond demos to transform African Agriculture. The journey to AGRA's soil Health programme. Alliance for a Green Revolution in Africa	ISBN No. 978-0-9980765-0-8 <a href="https://agra.org/technical-documents/">https://agra.org/technical-documents/</a>
5	Kisaka MO, Mucheru-Muna M, Ngetich F, <b>Mugwe J</b> , Mugendi DN, Mairura F	2015	Seasonal Rainfall Variability and Drought Characterization: Case of Eastern Arid Region, Kenya. In: WL Filho, AO Esilaba, KPC Rao, G Sridhar (Eds). Adapting African Agriculture to Climate Change Climate Change Management 2015, pp 53-71	(Springer NL ISBN 978-3-319-13000-2; DOI 10.1007/978-3-319-13000-2_5
6	Njeru, P.N.M. <b>Mugwe, J.N.</b> , Maina, I, Mucheru-Muna, M., Mugendi, D.N, Lekasi, J.K (2015).	2015	Integrating Farmers and Scientific Methods for Evaluating Climate Change Adaptation Options in Embu County. Eds Walter Leal Filho, Anthony O. Esilaba, K. P. C. Rao and G. Sridhar. <b>Adapting African Agriculture to Climate Change. Climate Change Management</b> 2015, pp 185-197	(Springer NL ISBN 978-3-319-13000-2; DOI 10.1007/978-3-319-13000-2_5
7	Njeru PNM, <b>Mugwe JN</b> , Maina I, Mucheru-Muna M, Mugendi DN, Lekasi JK, Kimani SK, Wamuongo J, Oeba VO and Muriithi F).	2014	Adapting Rain-fed Agriculture to Climate Change: An Overview of Sorghum ( <i>Sorghum bicolor</i> (L.) Moench) and Cowpea Production in agro-Pastoral Areas of Eastern Kenya. In: Eds, Khalif Z, Gachene CKK, Gicheru P, Mburu DW, Gakahu CG. Sustainable Land Management in Dry Lands of Kenya Improving Land Productivity through Participatory Research and Technology Transfer.	United Nations Development Programme - Kenya 2014, pp 137-145 (ISBN 978 9966 1805 5 1)
8	<b>Mugwe JN</b> and Ngoga N	2014	Climbing up with climbing beans in Rwanda and Kenya. In AGRA and IIRR (2014) Investing in Soil: Cases and lessons from AGRA's Soil Health Programme. Alliance for a Green Revolution in Africa and International Institute of Rural construction pp 59 -64	ISBN: 978-9966-754-08-0
9	Kimaru-Muchai S.W, <b>Mugwe J.M.</b> , Mairura F.S and Mugendi D.N. (2013)	2013	Communication channels used in dissemination of soil fertility management practices in the Central Highlands of Kenya. In: Bernard Vanlauwe, Piet van Asten, Guy Blomme (Eds) Agro-Ecological Intensification of Agricultural Systems in the African Highlands. Pp 281 - 290	ISBN-10: 0415532736, ISBN-13: 978- 0415532730

### 2.2.2:Book Chapters before February 2013

1. Mugendi DN, Mucheru-Muna MW, and **Mugwe JN**, 2012. Organic Materials. Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. *ISBN 9966-9821-1-6*
2. Ngetich, K.F., **Mugwe, J.N.**, Mucheru-Muna, M., Shisanya, C.A., Diels, J. and Mugendi, D.N. (2011). Assessment of strategies that optimize water productivity in maize: Simulation and testing of crop field practices using AquaCrop and field experimentation in central highlands of Kenya. In; Ardakanian, R. & Walter, T. (eds) 2011. Capacity Development for Farm Management Strategies to Improve Crop-Water Productivity using AquaCrop: Lessons Learned. Knowledge Series No. 7, UNW-DPC, Bonn, Germany Pp 88. Available from: [www.unwater.unu.edu/file/get/222](http://www.unwater.unu.edu/file/get/222)
3. **Mugwe JN**, Mucheru-Muna M, Mugendi D.N and Mwebia F (2012). Organic materials. Methodologies and approaches for uptake and scaling up soil fertility management In: Mugendi DN, Mucheru-Muna MW and **Mugwe JN** (Eds.) 2<sup>nd</sup> Revised Edition (2012). Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. (*ISBN 9966-9821-1-6*) *pgs 116 – 128.*
4. Felix K. Ngetich, Chris A. Shisanya, **Jayne Mugwe**, Monicah Mucheru-Muna and Daniel Mugendi (2012). The Potential of Organic and Inorganic Nutrient Sources in Sub-Saharan African Crop Farming Systems, Soil Fertility Improvement and Integrated Nutrient Management - A Global Perspective, Joann K. Whalen (Ed.), ISBN: 978-953-307-945-5, InTech, Available from: <http://www.intechopen.com/articles/show/title/the-potential-of-organic-and-inorganic-nutrient-sources-in-sub-saharan-african-crop-farming-systems>
5. Kimaru-Muchai S, Mugwe JN, Mugendi DN and Mucheru-Muna M.W (2012). In: Mugendi DN, Mucheru-Muna MW and **Mugwe JN** (Eds.) 2<sup>nd</sup> Revised Edition (2012). Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. (*ISBN 9966-9821-1-6*) *pgs 129-138.*
6. **Mugwe JN**, Mugendi DN, Mucheru-Muna M and Muthamia JM (2012). Methodologies and approaches for uptake and scaling up soil fertility management In: Mugendi DN, Mucheru-Muna MW and **Mugwe JN** (Eds.) 2<sup>nd</sup> Revised Edition (2012). Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. (*ISBN 9966-9821-1-6*) *pgs 116 – 128.*
7. **Mugwe JN**, Mugendi DN, Mucheru-Muna M, Odee D and Kungu J (2011). Soil inorganic N and N uptake by maize following application of legume biomass, tithonia, manure and inorganic fertilizer in central Kenya In: Innovations for a Green Revolution In Africa: Exploring The Scientific Facts; Bationo A, Waswa B, Okeyo J, Maina. Springer ISBN 978-90-481-2541-8. DOI 10.1007/978-90-481-2543-2. Vol 2 pgs 605 – 616
8. Mucheru-Muna W.M, Mugendi DN, Pypers P, **Mugwe JN**, Vanlauwe B, Merckx R and Kung'u JB (2011). Effect of organic inputs and mineral fertilizer on maize yield in a Ferralsol and a Nitisol in central Kenya. In: Innovations for a Green Revolution In Africa: Exploring The Scientific Facts; Bationo A, Waswa B, Okeyo J, Maina. Springer ISBN 978-90-481-2541-8. DOI 10.1007/978-90-481-2543-2. Vol 1 pgs 191-204
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11. Mugendi DN, **Mugwe JN**, Mucheru-Muna M, Karega R, Muriuki J, Vanlauwe B and Merckx R. (2011). Dissemination of integrated soil fertility management technologies using participatory approaches in the central highlands of Kenya. In: Innovations For a Green Revolution In Africa: Exploring The Scientific Facts; Bationo A, Waswa B, Okeyo J, Maina. Springer ISBN 978-90-481-2541-8. DOI 10.1007/978-90-481-2543-2. Vol 2 pgs 1279 – 1298
12. Ngetich, K.F., **Mugwe, J.N.**, Mucheru-Muna, M., Shisanya, C.A., Diels, J. and Mugendi, D.N. (2011). Assessment of strategies that optimize water productivity in maize: Simulation and testing of crop field practices using AquaCrop and field experimentation in central highlands of Kenya. In: Ardakanian, R. & Walter, T. (eds) 2011. Capacity Development for Farm Management Strategies to Improve Crop-Water Productivity using AquaCrop: Lessons Learned. **Knowledge Series No. 7**, UNW-DPC, Bonn, Germany Pp 88.
13. Mucheru-Muna MW, Mugendi DN, **Mugwe J**, and Kung'u J (2007). Economic evaluation of local inputs in Meru South District, Kenya. In A. Bationo (eds.) Advances in Integrated Soil Fertility Management in Sub-Saharan Africa: Challenges and Opportunities, pp 443–448, Springer NL. **ISBN 978-1-4020-5759-5**
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16. **Mugwe JN**, Mucheru-Muna MW, Mugendi DN and Mwebia F (2006). Organic Materials. In: Mugendi DN, Mucheru-Muna MW and Mugwe JN (Eds) 2006. Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. **ISBN 9966-9821-1-6**
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18. Karega R, Njuki J, Kungu J, **Mugwe J**, Muriu F and Mucheru M (2006) Participatory problem diagnosis, monitoring and evaluation and scaling up. In: Mugendi DN, Mucheru-Muna MW and Mugwe JN (eds) 2006. SOIL FERTILITY: ENHANCING COMMUNITY EXTENSION. Manilla Publishers, Nairobi, Kenya pg 73 - 92.
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21. Mucheru MW, Mugendi DN, Micheni A, **Mugwe J**, Kung'u J, Otor S and Gitari J (2003). Improved food production by use of soil fertility amendment strategies in the Central Highlands of Kenya. In: Bationo A (ed.) Managing Nutrient Cycles to Sustain Soil Fertility in Sub-Saharan Africa. pp 585-594. Academy Science Publishers, Nairobi, Kenya.

22. Mucheru MW, Mugendi DN, **Mugwe J**, Adiel K, Kung'u J, and Micheni A (2003). Organic Resources in Soil Fertility Management in Eastern Kenya. In: Savala CEN, Omare MN and Woomer PL (ed.) Organic Resource Management in Kenya: Perspectives and Guidelines. pp 26-33. Forum for Organic Resource Management and Agricultural Resource Management (FORMAT)
23. Mugendi DN, Mucheru-Muna M, **Mugwe J**, & Bationo A (2003). Enhancement of food productivity using leguminous shrubs in the Eastern highlands of Kenya. African Crop Science Conference Proceedings, Vol. 6. 581-586
24. Mucheru-Muna M, Mugendi DN, Kangai R, Kung'u J, **Mugwe J** and Otor S (2004). Farmer participation in enhancing food productivity through agroforestry in the central highlands of Kenya. In Temu AB, Chakeredza S, Mogotsi K, Muthali D and Mulinge R (eds.). Rebuilding Africa's capacity for agricultural development: the role of tertiary education. Reviewed papers presented at ANAFE Symposium on Tertiary Agricultural Education, April 2003. ICRAF, Nairobi, Kenya. ISBN:92-9059-1609
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26. Mucheru M, Mugendi DN, Micheni A, **Mugwe J**, Kung'u JB, Gitari J (2004). Enhancement of food productivity using locally available nutrient replacements in the central highlands of Kenya. In: Msaky JJ, Msumali GP and Rwehumbiza FBR (Eds), Soil Science Research and Technologies: Foundations for Sustainable Food Security: Proceedings of the 19<sup>th</sup> SSSEA Conference, 2-7 December 2001, Moshi, Tanzania
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### **2.2.2 Books published/edited**

1. Mugendi DN, Mucheru-Muna MW and **Mugwe JN** (Eds.) 2<sup>nd</sup> Revised Edition (2012). Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. (ISBN 9966-9821-1-6)
2. Kirumba E, Mugendi DN and **Mugwe JN** (2010). Gender Differentials in Adoption of Agricultural Innovations in Kenya. Publisher: Lap Lambert Academic Publishing Ag & Co Kg; ISBN: 9783838397832: Germany. 128 pages



3. Mugendi DN, Mucheru-Muna MW and **Mugwe JN** (Eds.) (2006). Soil Fertility: Enhancing Community Extension. Manilla Publishers, Nairobi, Kenya. (*ISBN 9966-9821-1-6*)

### **2.2.3 Papers in Conference proceedings**

1. Mwende N, Danga B.O, **Mugwe J**, Kwena K. 2018. Effect of Tied Ridges, Fertilizers and Cropping Systems on Maize Profit margin in the Semi – arid Areas of Machakos County, Kenya. University: 12<sup>th</sup> Egerton University International Conference
2. Mwende N, Danga B.O, **Mugwe J**, Kwena K. 2018. Effect of Tied Ridges, Fertilizers and Cropping Systems on Soil Moisture Content and Maize Yield in Semi – arid Areas of Machakos, County, Kenya University: 11<sup>th</sup> Egerton University International Conference 29<sup>th</sup> - 31<sup>st</sup> March, 2017, Page 38.
3. Mwende N, Danga B.O, **Mugwe J**, Kwena K. 2018. Response of Yield and Yield Components of Maize as affected by Tied Ridges, fertilizers and cropping systems in the Semi – arid Areas of Machakos County, Kenya University: 2<sup>nd</sup> School of Agriculture and Enterprise Development, Kenyatta University, 29<sup>th</sup> – November – 2<sup>nd</sup> December, 2016, Page 84.
4. Mwebia F.W., Mucheru-Muna M.W., **Mugwe J.N.** and Mugendi D.N. (2015). Farmer Groups' Characteristics Influencing Application of Soil fertility Technologies in the Central Highlands of Kenya. In: Isutsa, D.K. Proceedings of the First International Research Conference held in Chuka University, 29<sup>th</sup> to 31<sup>st</sup> October, 2014 Chuka, Kenya, pp 81-90 (*with student*)
5. Mwebia F.W., Mucheru-Muna M.W., **Mugwe J.N.** and Mugendi D.N. (2015). Farmer Groups' Members' Household Factors Influencing Selection of Soil fertility Technologies in the Central Highlands of Kenya. In: Isutsa, D.K. Proceedings of the First International Research Conference held in Chuka University, 29<sup>th</sup> to 31<sup>st</sup> October, 2014 Chuka, Kenya, pp 90-100 (*with student*)
6. Kisaka MO, Mucheru-Muna M, Ngetich FK, **Mugwe J**, Mugendi D, Mairura F (2014). Does long term low rate and inorganic nitrogen management guarantee maize yield under semi arid conditions of eastern Kenya. In Fourth RUFORIM Biennial Conference. pp 487- 493
7. Ngie M, Danga BO, **Mugwe J** and Kwena K (2014). Response of yields and yields components of maize as affected by tied ridges, fertilizers and cropping systems in the semi arid areas of Machakos County, Kenya (2014). In Waceke Wanjohi, Daniel Kyalo, Purity Nguhiu and Cyrus Gichaga. 2<sup>nd</sup> Biennial international Conference on enhancing sustainable agricultural production and marketing systems; from 27<sup>th</sup> November to 2<sup>nd</sup> December 2014. pp 409 -415
8. Murage F, **Mugwe J**, Mucheru\_Muna M and Mugendi DN (2014). Effect of Phosphorous on yield and growth of soybean (Glycine Max L) Varieties in central highlands of Kenya. In Waceke Wanjohi, Daniel Kyalo, Purity Nguhiu and Cyrus Gichaga. 2<sup>nd</sup> Biennial international Conference on enhancing sustainable agricultural production and marketing systems; from 27<sup>th</sup> November to 2<sup>nd</sup> December 2014. pp 356 – 367
9. Ada M, Mucheru –Muna, **Mugwe JN**, Zingore S, Mugi\_Ngenga E, Mairura F and Ayieko D. 2014. Determinants of use of integrated soil fertility management strategies and phosphorous

management for maize production intensification in Runyenjes sub county, Kenya. In Waceke Wanjohi, Daniel Kyalo, Purity m. Nguhiu and Cyrus Gichaga. 2<sup>nd</sup> Biennial international Conference on enhancing sustainable agricultural production and marketing systems; from 27<sup>th</sup> November to 2<sup>nd</sup> December 2014. Pp 409 -415 In Waceke Wanjohi, Daniel Kyalo, Purity Nguhiu and Cyrus Gichaga. 2<sup>nd</sup> Biennial international Conference on enhancing sustainable agricultural production and marketing systems; from 27<sup>th</sup> November to 2<sup>nd</sup> December 2014. Pp 198 -213.

10. Kisaka, M.O. Mucheru-Muna, F.K., Ngetich, **J. Mugwe**, D. Mugendi and F. Mairura (2013). Characterization of seasonal rainfall variability and drought probability of the semi arid areas of Mbeere region in Embu County, Kenya. In: Githunguri C, Kimani S, Esilaba A, Njeru P, Lekasi J, Gachene C, Baaru M, Muriuki A, Nyamwaro S, Maina F, Muniafu M, Kibunja C, Mangale N. Transforming rural livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation? Joint proceedings of the 27th Soil Science Society of East Africa and the 6th African Soil Science Society. pp 64-75
11. P.N.M. Njeru, I. Maina, **J. Mugwe**, M. Mucheru-Muna, D. Mugendi, J.K. Lekasi, S.K. Kimani, J. Miriti B.J. Mugo, H. Mwangi, V.O. Oeba, A.O. Esilaba and F. Muriithi (2013). Drought mitigating technologies: lessons learnt from sorghum and cowpea production in semi-arid areas of Embu County, eastern Kenya. In: Githunguri C, Kimani S, Esilaba A, Njeru P, Lekasi J, Gachene C, Baaru M, Muriuki A, Nyamwaro S, Maina F, Muniafu M, Kibunja C, Mangale N. Transforming rural livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation? Joint proceedings of the 27th Soil Science Society of East Africa and the 6th African Soil Science Society. pp 203-211
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13. Abuli, J.S, **J. N. Mugwe**, M. Mucheru-Muna, D. N. Mugendi (2013) Economic suitability of selected phosphorus sources on soybean yield in central highlands of Kenya. In: Githunguri C, Kimani S, Esilaba A, Njeru P, Lekasi J, Gachene C, Baaru M, Muriuki A, Nyamwaro S, Maina F, Muniafu M, Kibunja C, Mangale N. Transforming rural livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation? Joint proceedings of the 27th Soil Science Society of East Africa and the 6th African Soil Science Society. pp 456-463
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15. J.M.M. Matusso, J.N. **Mugwe**, M. Mucheru-Muna (2013). Effects of different Maize (*Zea mays* L.) – Soybean (*Glycine max* (L.) Merrill) Intercropping Patterns on Soil Mineral-N, N-uptake and Soil Properties. In: Githunguri C, Kimani S, Esilaba A, Njeru P, Lekasi J, Gachene C, Baaru M, Muriuki A, Nyamwaro S, Maina F, Muniafu M, Kibunja C, Mangale N. Transforming rural livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation? Joint proceedings of the 27th Soil Science Society of East Africa and the 6th African Soil Science Society. pp 1046 -1061
16. J.M.M. Matusso, **J.N. Mugwe**, M. Mucheru-Muna (2013). Effects of different maize, soybean intercropping patterns on yields and its economics. In: Githunguri C, Kimani S, Esilaba A, Njeru P, Lekasi J, Gachene C, Baaru M, Muriuki A, Nyamwaro S, Maina F, Muniafu M, Kibunja C, Mangale N. Transforming rural livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation? Joint proceedings of the 27th Soil Science Society of East Africa and the 6th African Soil Science Society. pp 1062-1075
17. Kisaka M, Mucheru-Muna M, Ngetich FK, **Mugwe JN**, Mugendi DN, Mairura FK (2013). Seasonal rainfall variability and aptness of Geographical (GIS) interpolation techniques in the arid regions of Embu County, Kenya. African Crop Science Proceedings,11: 883-893. ISSN 1023-070X/2013. In African Crop Science Proceedings 11: 883 -893. ISSN 1023-070X/2013

#### **2.2.4: Refereed Learning Modules**

- KRM 801:E-Module on Research Methods: Topic on Data Management and analysis (PUCU)
- KRM 813: Agriculture and Environment
- KCU 202: Principles of Soil Science

#### **2.2.5 SELECTED PROJECT REPORTS**

<b>S/n</b>	<b>Authors</b>	<b>Project Report Title</b>	<b>Client/Donor</b>
1	Jayne Mugwe	<b>Final Report: May 15 2014 to April 15, 2017</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	Alliance for a Green Revolution in Africa
2	Jayne Mugwe	<b>Interim Report: April 2016 to September 2016</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	Alliance for a Green Revolution in Africa
3	Jayne Mugwe	<b>Interim Report: October 2015 to March 2016</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	Alliance for a Green Revolution in Africa
4	Jayne Mugwe	<b>Interim Report: April 2015 to September 2015</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-	Alliance for a Green Revolution in Africa

		based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	
5	Jayne Mugwe	<b>Interim Report: October, 2014 to March 2015</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	Alliance for a Green Revolution in Africa
6	Jayne Mugwe	<b>Interim Report: April 2014 to September 2014</b> (AGRA 2013, SHP 014) Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya; Soy & Bean Commercialization Project ( <i>SoCo Project</i> )	Alliance for a Green Revolution in Africa
7	Jayne Mugwe	<b>Final Report: May 15 2014 to April 15, 2017</b> (AGRA 2013, SHP 022) Enhancing Productivity and Market Development of Soybeans and Climbing Beans in Central Highlands Kenya	Alliance for a Green Revolution in Africa
8	Jayne Mugwe	ERAFRICA-IC-080: CONNEcting knowledge, scales and actors; an integrated framework for adaptive organic resource management, targeting soil aggradation and agro-ecosystems' resilience in SSA (CONNESSA)	Alliance for a Green Revolution in Africa

### **2.2.6 Presentation of Papers at Professional Conferences (from 2007)**

S/No	Presenter	Title of Paper presented	City/Country	Date of Conference	Funding (US\$)
1.	<b>Mugwe, J.N.</b> , Mutesa, F., Ngetich, F.K., Mucheru-Muna, M., and Mugendi, D.N. (2018).	Mulching and Soil Fertility Amendments Effects on Maize yields, Soil Carbon and Nitrogen in Embu County, Kenya	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN
2.	Macharia, M., Mucheru-Muna, M.N, <b>Mugwe, J. N.</b> , Ngetich. F. and Mugendi, D.N (2018).	Effects of tied ridging, manure and Tithonia combined with Fertilizer on maize-soybean yields and their profitability in central highlands of Kenya	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN
3.	Kimiti, W, Mucheru-Muna M.N <sup>1</sup> , <b>Mugwe J N</b> , Ngetich F and Mugendi D.N (2018).	Effect of lime, manure and fertilizer on soil acidity and maize performance in Tharaka Nithi County	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN
4.	Kibet P, <b>Mugwe JN</b> , Korir N K, , Mucheru-Muna M.N and Ngetich FK, Mugendi D.N (2018).	Granular and powdered limes effects on soil properties and maize ( <i>Zea mays L</i> ) performance in soils of Tharaka Nithi County, Kenya	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN

5.	Ngetich, K.F., Diels, J., <b>Mugwe, J.N.</b> , Mucheru-Muna, M.W., Shisanya, C.A. & Mugendi, D. N. (2018)	Rainfall distribution, sowing date and timing of nitrogen fertilizer application effects on soil water content and maize productivity in Tharaka-Nithi County, Kenya	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN
6.	Mwende N., Danga B.O., <b>Mugwe J.</b> , and and Kwena K. (2018)	Profit margin in maize production under tied ridges, fertilizers and cropping systems in semi-arid areas of Machakos County, Kenya	12 <sup>th</sup> Egerton University International Conference, Njoro, Kenya	27 <sup>th</sup> to 29 <sup>th</sup> March 2018	OWN
7.	<b>Mugwe JN</b> , Sibomana D., Ngetich FK, Mucheru-Muna MM and Mugendi DN	Response of Maize and Soybean to Tied Ridging and Combined Application of Manure, Tithonia and Fertilizer in the Central Highlands of Kenya	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	AGRA
8.	Mate H., <b>Mugwe JN</b> , Wambugu SK, Mucheru-Muna M and Mugendi DN,	Factors affecting the participation of smallholder farmers in collective marketing initiatives in the f Eastern Highlands of Kenya	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	Farm Concern International
9.	Njagi EW., Mucheru-Muna, M., <b>Mugwe, J.</b> , Ngetich, K F., and Mugendi, D N.	Collective action in seed distribution; Case of soybean ( <i>Glycine max</i> ) in Mbeere South, Meru South and Imenti South sub counties of Eastern Kenya	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	AGRA
10.	Murage, F.M., <b>Mugwe, J.N.</b> , Ngetich, K.F., Mucheru-Muna, M.M. and Mugendi, D.N	Effect of phosphorus on growth and yields of soybean ( <i>Glycine max L</i> ) varieties in the central highlands of Kenya	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	AGRA
11.	Kibet P <sup>1*</sup> , NK Korir <sup>1</sup> , <b>Mugwe JN</b> , Mucheru-Muna M.N <sup>3</sup> and Mugendi D.N <sup>4</sup>	Effects of agricultural lime types on soil properties and maize ( <i>Zea mays L</i> ) performance in acidic soils of Tharaka Nithi county, Kenya	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	AGRA
12.	Njoroge GM, <b>Mugwe.J.</b> , Ngetich K.F, Mucheru-Muna. M, Bett. E, and Mugendi.D	Agroecological suitability screening of soybean ( <i>Glycine max</i> ) varieties in Meru and Tharaka Nithi counties	11 <sup>th</sup> Egerton University International Conference and Innovation week	29 <sup>th</sup> to 31 <sup>st</sup> March 2017	RUFORUM
13.	Masika OK, Mucheru-Muna Ngetich FK, <b>Mugwe JN</b> , Mugendi DN and Mairura F	Spatial-temporal maize productivity and stability response to soil-water-use efficiency strategies under high rainfall variability agroecologies	Third International Conference, Chuka University 26 <sup>th</sup>	26 <sup>th</sup> to 28 <sup>th</sup> October 2016	AGRA -SHP 014

			to 28 <sup>th</sup> October 2016		
14.	Masika O.K, <b><u>Mugwe JN</u></b> , Ngetich FK, Mucheru-Muna M, and Mugendi D	Performance evaluation of the Apsim-model on maize productivity in integrated soil fertility management in Kenya's dryer agroecosystems	Third International Conference, Chuka University 26 <sup>th</sup> to 28 <sup>th</sup> October 2016	26 <sup>th</sup> to 28 <sup>th</sup> October 2016	
15.	Benvindo VS, Danga BO and <b><u>Mugwe JN</u></b>	Influence of manure, phosphate fertilizer and lime on soil available phosphorus	International Conference on Building a new generation of Agricultural Scientists	1 <sup>st</sup> to 5 <sup>th</sup> December 2014	AGRA
16.	Nduwumuremyi A, <b><u>Mugwe J</u></b> , Ruganzu V, Habimana S and Mupenzi J	Suitability and quality analysis of locally available limestones for rectifying soil acidity in Rwanda	International Conference on Building a new generation of Agricultural Scientists (pg 85- book of abstracts)	1 <sup>st</sup> to 5 <sup>th</sup> December 2014	AGRA
17.	Matusso J M, <b><u>Mugwe JN</u></b> and Muna Mucheru-Muna	Effects of Different maize (Zeamays L) – Soybean (Glycine Max (L) Merrill) intercropping patterns and Yields and Its profitability	International Conference on Building a new generation of Agricultural Scientists (pg 88- book of abstracts)	1 <sup>st</sup> to 5 <sup>th</sup> December 2014	AGRA
18.	Mugi EW, Mucheru_Muna MW, <b><u>Mugwe JN</u></b> , Ngetich FK, Mugendi DN and Mairura FS	Households Socio-economic factors influencing the level of adaptation to climate variability in the dry zones of Eastern Kenya	International Conference on Building a new generation of Agricultural Scientists	1 <sup>st</sup> to 5 <sup>th</sup> December 2014	RUFORUM
19.	Mwebia F.W., Mucheru-Muna M.W., <b><u>Mugwe J.N.</u></b> and Mugendi D.N. (2014).	Farmer Groups' Characteristics Influencing Application of Soil fertility Technologies in the Central Highlands of Kenya.	1 <sup>st</sup> International Research Conference of Chuka University (Kenya)	29 <sup>th</sup> – 31 <sup>st</sup> October 2014.	ASARECA (ASARECA) NRM/09/01



20.	Mwebia F.W., Mucheru-Muna M.W., <b>Mugwe J.N.</b> and Mugendi D.N. (2014).	Farmer Groups' Members' Household Factors Influencing Selection of Soil fertility Technologies in the Central Highlands of Kenya	1 <sup>st</sup> International Research Conference of Chuka University (Kenya)	29 <sup>th</sup> – 31 <sup>st</sup> October 2014.	ASARECA(A SARECA)NR M/09/01
21.	Mugi EW., Muna M.W, <b>Mugwe J.N.</b> , Ngetich FK, Mugendi D.N. and Mairura FS 2013	Integrating Indigenous and Conventional knowledge-based Climate forecasts for farmers enhanced adaptation to Climate Variability in the drier zones of Eastern Kenya	Cathay Hotel, Nakuru; Kenya	20-25 <sup>th</sup> October 2013	RUFORUM
22.	Ndung'u A.M, <b>Mugwe J.N.</b> , Mucheru M-Muna	Effect of Rhizobia inoculation, and Phosphorus fertilizer levels on nodulation and yield of Soybean ( <i>Glycine Max</i> L Merrill)	Cathy Hotel, Nakuru; Kenya	20-25 <sup>th</sup> October 2013	AGRA
23.	<b>Mugwe J.N</b> and Bett E	Soybean value chain in the central highlands of Kenya	Entebbe, Uganda	14 <sup>th</sup> – 17 <sup>th</sup> October, 2013	AGRA
24.	<b>Jayne Mugwe</b> , Monicah-Mucheru Muna, Jose muthamia and Daniel Mugendi	Effect of inputs application on yields of soybean and climbing a maize-legume rotation in central Kenya	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October, 2012	AGRA SoCo (SHP 022)
25.	Nicholas Muba, <b>Jayne Mugwe</b> , Wambugu SK and Eric Bett	Profitability of rotation systems under varied integrated soil fertility management regimes in the central highlands of Kenya	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	AGRA Training SHP 024)
26.	Mucheru-Muna M, Ngetich FK, Mugendi DN, <b>Mugwe J.N.</b> , Pypers P, Vanlauwe B, Diels J and Merxk R	Effect of inputs application on yields of soybean and climbing a maize-legume rotation in central Kenya	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	VLIR
27.	Athanase Nduwumuremyi, Vicky Ruganzu and <b>Jayne Mugwe</b>	Relative effectiveness of agricultural Lime and local lime materials in reducing soil acidity in Rwanda	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	AGRA training (SHP 024)
28.	Felix Ngetich, an Diel, Chris Shisanya, <b>Jayne Mugwe</b> , Monicah-Mucheru Muna and Daniel Mugendi	Effects of soil and water conservation techniques on runoff, sediment yield and maize productivity	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	VLIR
29.	Irene Okeyo Monicah Mucheru-Muna, Jayne Mugwe, Felix ngetich, Daniel Mugendi, Jan Diels	Effect of selected soil and water conservation techniques on rainfall use efficiency and maize productivity in central highlands of Kenya	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	VLIR
30.	<b>Mugwe J.N.</b> , Mugendi DN and Mucheru Muna	Farm and socio-economic factors influencing farmers' decision to cultivate soybeans in the central highlands of Kenya	Safari park hotel, Nairobi, Kenya	22 to 26 <sup>th</sup> October 2012	AGRA (SHP 022)
31.	Macharia JM, <b>Mugwe J.N.</b> , Mucheru-Muna M, Mairura S, Kimani SK and Mugendi DN	Training needs in soil fertility management for farmers and extension workers in central highlands of Kenya	KARI Hqs, Nairobi, Kenya	22 to 28 <sup>th</sup> October 2012	ASARECA

32.	<b>Mugwe JN</b> , Mairura F and Muchai S.	Determinants of Adoption and Utilization of Integrated Soil Fertility Management by Small holders in Central Kenya	Karatina University, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	AGRA training Programme
33.	Matusso, J, <b>Mugwe JN Jayne</b> and Mucheru-Muna, MW	Potential Role of Cereal-legume Intercropping Systems in Integrated Soil Fertility Management in Smallholder Farming Systems of Sub-Saharan Africa	Karatina University, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	AGRA training Programme
34.	Sianje A, <b>Mugwe, J</b> Mucheru-Muna, MW and Mugendi DN	Effects of phosphorus sources and starter nitrogen on soybean yields and soil properties in the central highlands of Kenya	Karatina University, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	AGRA training Programme
35.	Nduwumuremyi. A, <b>Mugwe JN</b> and Ruganzu V	Effects of Agricultural Lime and Local Lime Materials on Irish Potato Yield in Acidic Soils, Burera district, Rwanda.	Karatina University, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	AGRA training Programme
36.	Macharia JM, <b>Mugwe JN</b> , Mucheru-Muna M, Mang'uriu DN, and Mugendi DN	Socioeconomic factors influencing levels of knowledge in soil fertility management in the central highlands of Kenya	Karatina University, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	VLIR-OUS
37.	Okeyo, I. A., Mucheru-Muna, M., <b>Mugwe, J.</b> , Ngetich, F. K., Mugendi, D. N. & Shisanya, C.A	Effects of selected SWC treatments on soil nutrient loss and maize yields in the central highlands of Kenya	Karatina, Kenya	25 <sup>th</sup> – 28 <sup>th</sup> July 2012	VLIR- OUS
38.	Kimaru-Muchai S.W., Mucheru-Muna M., <b>Mugwe J.M.</b> , Mairura F.S and Mugendi D.N.	Factors that influence reliability of information sources on soil fertility management practices in the Central Highlands of Kenya	JKUAT, Juja, Kenya	16-18 November, 2011	ASARECA
39.	<b>Mugwe JN</b> , Mwebia F, Muna MM, Mugendi DN	Maize Yields Response to Intercropping and Application of Manure, Tithonia and Fertilizer in the Central Highlands of Kenya	Kigali, Rwanda	24 – 27, October 2011	Conference on Agricultural Intensification of the African Humid Highlands (CIALCA)
40.	Kimaru-Muchai S.W., Mucheru-Muna M., <b>Mugwe J.M.</b> , Mairura F.S and Mugendi D.N.	Dissemination Approaches used in Up-scaling Soil fertility Management Practices in the Central Highlands of Kenya.	Kigali, Rwanda	24 -27 October 2011	CIALCA
41.	<b>Ngetich K.F.</b> , <b>Mugwe J.N.</b> , Mucheru-Muna M., Shisanya C.A., Diels J <sup>2</sup> and Mugendi D.N.	Planting dates effect on maize yield performance under rainfed conditions in the Central Highlands of Kenya	Kigali, Rwanda	24-27 October 2011	CIALCA
42.	Mugendi DN, Mucheru-Muna MW, Ngetich KF, <b>Mugwe J</b> , Vanlauwe B, Merckx R and Diels J	Organic inputs and mineral fertilizer effects on soil water content and maize productivity in Mbeere District, Kenya. Paper	Leuven, Belgium.	11-14 July 2011,	Symposium on Soil Organic Matter

43.	<u>Ngetich, K. F., Shisanya, C. A., Mugwe, J., Mucheru-Muna, M., Mugendi, D. N. and Diels,</u>	Tillage and surface management effects on soil water content and maize productivity in the Central Highlands of Kenya	Kenyatta University, Kenya.	14-18 March 2011	Lake and Catchment Research Symposium (LARS)
44.	Ngetich, K.F., <b>Mugwe, J.N.</b> , Mucheru-Muna, M., Shisanya, C.A., Diels, J. and Mugendi, D.N.	Assessment of strategies that optimize water productivity in maize: Simulation and testing of crop field practices using AquaCrop and field experimentation in central highlands of Kenya.	Yogyakarta, Indonesia	8-9 <sup>th</sup> Oct 2010.	FAO / UNW-DPC / ICID
45.	<b>Mugwe JN</b> , Mucheru-Muna M and Mugendi DN, Muthamia Joses	Methodologies and Approaches for Up-scaling Soil Fertility Management in Kenya: A Review	Moshi, Tanzania	7 – 11 <sup>th</sup> December 2009, in Moshi, Tanzania	ASARECA
46.	<b>Mugwe JN</b> , Mugendi DN, Kungu JB, Mucheru-Muna MM and Merckx R	Soil Fertility Management Using Organic and Inorganic Inputs in the Central Highlands of Kenya	Nairobi, Kenya (KARI conference)	10 <sup>th</sup> .14 <sup>th</sup> November, 2008	KARI
47.	Muriuki JP, Kung’u J B, Mugendi DN, <b>Mugwe J N</b> and Mucheru-Muna MW , Merckx R	Economic Returns of Organic and Mineral Fertilizer Inputs for Soil Nutrient Replenishment	Muguga, Kenya (KEFRI conference) 2008	November, 2008	KEFRI

### 2.2.7 Other Publications

#### Modules in Higher Education

1. **Mugwe JN. (2020). KCU 801: Research Methods**, Kenyatta University Digital School, interactive module for Blended learning; e-tivities
2. **Mugwe JN (2020). KRM 813: Agriculture and Environment;**. Kenyatta University, Digital School, interactive module for Blended learning; e-tivities
3. **Mugwe JN. (2020). KCU 202: Principles of Soil Science** Kenyatta University Digital School, interactive module for Blended learning; e-tivities
4. **Mugwe JN. (2020). KRM 804: Cropping Systems and Agroforestry;** Kenyatta University Digital School, interactive module for Blended learning; e-tivities
5. **Mugwe JN. (2020). KAS 301: Research Methods for Agriculture;** Kenyatta University Digital School, interactive module for Blended learning; e-tivities
6. **Mugwe JN. (2020). KST 422: Agroforestry Development.** Kenyatta University Digital School, interactive module for Blended learning; e-tivities
7. **Mugwe JN (2020). KRM 305:Research Methods and Agricultural Experimentation;** Kenyatta University Digital School, interactive module for Blended learning; e-tivities
8. **Mugwe JN. 2012: KCU 801: Research Methods and Scientific Writing,** Digital School of Virtual and Open Learning, *Interactive Module*, Kenyatta University (Revised)
9. **Mugwe JN. 2012: KRM 813: Agriculture and Environment,** Digital School of Virtual and Open Learning, *Interactive Module*, Kenyatta University (Revised)
10. **Mugwe JN. 2011: PUCU: Research Methodology: Quantitative data analysis** *Interactive Module*, Kenyatta University

## Training manuals

1. Mutuma S. **Mugwe J.**, Mucheru- Muna M., Ngetich F., Bett K, Mutuma S. and Mugendi D. (2017). Training manual on integrated soil fertility management: for use by extension service providers to train farmer groups
2. **Mugwe J.**, Murimi L., Mucheru- Muna M., Ngetich F., Bett K, Mutuma S. and Mugendi D. (2017). Soybean production for increased income and health.
3. **Mugwe J.**, Murimi L., Mucheru- Muna M., Ngetich F., Bett K, Mutuma S. and Mugendi D. (2017). Training manual on post harvest management of grains: for use by extension service providers to train farmer groups

## Brochures

1. **Mugwe J.**, Mucheru- Muna M., Ngetich F., Bett K, Mutuma S. and Mugendi D. (2017). Farmer groups approach to upscaling agricultural technologies. A pamphlet for use by extension service providers and farmer groups in Kenya. AGRA-KU. Brochure No 1
2. **Mugwe J.**, Mucheru- Muna M., Ngetich F., Bett K, Mutuma S. and Mugendi D. (2017). Going beyond demos through the mother baby approach. A pamphlet for use by extension service providers and farmer groups in Kenya. AGRA-KU. Brochure No 2
3. Githaiga R., **Mugwe J.**, Mucheru- Muna M., Ngetich F., Bett K., Mutuma S. and Mugendi D (2017) . Soybean value addition for increased income. A pamphlet for use by extension service providers and farmer groups in Kenya. AGRA-KU. Brochure No 3
4. Bett K., Ayieko D., **Mugwe J.**, Mucheru-Muna M., Ngetich F., Mutuma S. Mugendi D. (2017). Marketing and economics of climbing beans. A pamphlet for use by extension service providers and farmer groups in Kenya. AGRA-KU. Brochure No 4
5. Bett K., Ayieko D., **Mugwe J.**, Mucheru-Muna M., Ngetich F., Mutuma S. Mugendi D. (2017). Marketing and economics of soybean. A pamphlet for use by extension service providers and farmer groups in Kenya. AGRA-KU. Brochure No 5
6. **Mugwe, J.N.**, Mugendi, D.N., Muna, M.W. and Kimaru S. (2011). Good management of cattle manure for increased yields. A Pamphlet for use by Extension Personnel and Farmers in Kenya. KU-ASARECA. Brochure No 1
7. **Mugwe, J.N.**, Mugendi, D.N., Muna, M.W. and Kimaru S. (2011). Improve soil productivity by integrating leguminous trees into farmlands. A Pamphlet for use by Extension Personnel and Farmers in Kenya. KU-ASARECA. Brochure No 3
8. **Mugwe, J.N.**, Mugendi, D.N., Muna, M.W. and Kimaru S. (2011). Tithonia for increased yields. A Pamphlet for use by Extension Personnel and Farmers in Kenya. KU-ASARECA. Brochure No 4
9. Muna M. W., Kimaru, S., **Mugwe, J.N.** and Mugendi D.N (2011). Mother baby Extension Approachi. A poster for use by extension personnel. KU-ASARECA. Poster no. 1
10. Muna M. W., Kimaru, S., Mugwe, J.N. and Mugendi D.N (2011) Kamuingi Koyaga Ndiri. A poster for use by extension personnel. KU-ASARECA. Poster no. 2
11. Muna M. W., Kimaru, S., **Mugwe, J.N.** and Mugendi D.N (2011). Soil is Wealth; Lets protect it. A poster for use by extension personnel. KU-ASARECA. Poster no. 3

12. **Mugwe JN**, Mugendi DN, Mucheru-Muna MW and Kung'u JB (2006). *Calliandra calothyrsus* for increased crop yields (Pamphlet)
13. **Mugwe JN**, Mugendi DN and Mucheru-Muna MW (2006). Cattle manure for increased crop yields (Pamphlet)
14. Mugendi DN, Mugwe JN, Mucheru-Muna MW and Kung'u JB (2006). *Tithonia diversifolia* green manure for increased yields (Pamphlet).
15. Mucheru-Muna MW, Mugwe JN and Mugendi DN (2006). *Mucuna pruriens* for soil fertility improvement (Pamphlet)
16. Mucheru MW, Mugendi DN, Micheni A, Mugwe JN, Kung'u JB, and Gitari JN (2001). Improved food production using herbaceous legumes in the central highlands of Kenya. *Legume Research Network Project Newsletter* 5:15-17

### Thesis

**Ph D:** An evaluation of integrated soil fertility management practices in Meru south District, Kenya.

**Msc:** Effect of soil incorporated leaf prunings on soil productivity in alley and sole cropping systems using *Leucaena leucocephala* (Lam.) and *Calliandra calothyrsus* Meissn

## 2.3 QUALITY TEACHING, LEARNING AND MENTORSHIP

### 2.3.1 : Student Evaluation

1. 2018/2019 KU: KCU 801= 100%    KCU 300 = 98.85%
2. Student evaluation at University of Embu (100%)
3. Student Evaluation (2012/2013) (98%)
4. Students Evaluation (KU) (90.5%)
5. Students Evaluation (KU) (90.8%)

### 2.3.2: Training in Higher Education Teaching

1. Certificate: Training on Master Public Speaking on 21<sup>st</sup> July 2018; Lilian Towers
2. Certificate: The Philosophy of Greatness Transformational Training at BTL; 7<sup>th</sup> March 2017
3. Certificate: Training on Statistical Analysis Software at University of Embu on 5<sup>th</sup> to 6<sup>th</sup> May 2016
4. Certificate: Linking Integrated soil fertility to markets; Agricultural value chain analysis training 13<sup>th</sup> to 17<sup>th</sup> May 2013
5. Certificate : Implementation and out-scaling of balanced Crop Nutrition in Africa 6<sup>th</sup> to 10<sup>th</sup> July 2015

### 2.3.3: Ongoing (PhD)

1. **Esther Wangomb'e (N85/11241/2008)** Impact of Participatory Forest Management in Mt. Kenya Forest, Kenya. School of Environmental Studies, Kenyatta University.
2. **Peterson Newton Muchiri Njeru, (A99/14218/2009)** Integrated soil fertility management technologies in sorghum and cowpea production systems in semi-arid areas of Kenya. Department of Agricultural Resource Management. Kenyatta University.
3. **Jeremiah Kimigo (A99/29596/2014).** Evaluation of different land rehabilitation systems on Soil N, SOC and moisture retention in arid and semi-arid areas of Kenya: case study of Enkushin,

Kajiado. Department of Agricultural Resource Management, School of Agriculture & Enterprise Development, Kenyatta University

4. **Nathan Oduor A806/243/2018:** Integrated soil fertility and water management practices for enhanced sorghum (*sorghum bicolor*) productivity in the drylands of Tharaka-Nithi county, Kenya. School of Agriculture. University of Embu

### **2.3.4 Masters Supervision (On going)**

1. Jared Odoyo (A147/CE/23458/2010). Effects of micro-dosing and tied ridging on maize yield in smallholder farms of semi arid Eastern Kenya. Department of Agricultural Resource Management. Kenyatta University.
2. Frank Mutesa (A148EA/22250/2012) Effect of selected Integrated Soil Fertility Management technologies on maize-soybean yields and soil properties in central highlands of Kenya Department of Agricultural Resource Management. Kenyatta University.
3. Gladys Chelangat: Economic assessment of integrated soil fertility technologies combined with mulching in maize-soybean production systems in Embu and Meru Counties, Eastern Kenya”. Department of Agribusiness, Management and Trade, Kenyatta University.
4. Winfred Ireri (A148/CE/23456/2010). Effects of tillage and residue on soil water and organic matter in maize – bean cropping systems in Embu County, Central Kenya. Department of Agricultural Resource Management. Kenyatta University.
5. Musa Sang (A147/OL/22343/11). Effectiveness of a designed KARI-ATDC walking tractor seeder operation on conservation agriculture in different soils. Department of Agricultural Resource Management. Kenyatta University.
6. Murithi Timothy Kimathi (A147/OL/23447/2012). Effect of bio-fertilizers, cattle manure and mineral fertilizer on growth and yield of maize in Meru County. Department of Agricultural Resource Management. Kenyatta University.
7. Kivuva M Gabriel (A147/33088 /2014). Soil productivity in maize soybean cropping systems under integrated soil fertility management and mulching in Embu and Meru Counties, Kenya. Department of Agricultural Resource Management. School of Agriculture & Enterprise Development, Kenyatta University
8. Mwigwirwa Joshua Gitaare: Effect of tied ridging soil fertility and polysaccharide inputs on maize, soil moisture and soil properties. Department of Agricultural Resource Management. School of Agriculture & Enterprise Development, Kenyatta University
9. Robert Kipyego Oroiyo A147/OL/NKU/24850/2014: Growth and Yield Response of Selected Sweet Potato Varieties to Water-deficit in Nakuru County, Kenya
10. Jackson Muganda Nyongesa A148/OL/KKA/26579/2014: Effect of Tithonia and phosphorus on yields under intercropping systems in Kakamega County, Kenya
11. Jackline Wangui Kithome: Gender participation in soil fertility management in Mbeere South and Sabatia Sub Counties, Kenya. Kenyatta University, Department of sociology
12. Miriam Nyokabi: A148/ 39531/2016. Response of sorghum yields and soil fertility to integration of manure and fertilizers in Tharaka-Nithi County, Kenya. Department of Agricultural Resource Management. School of Agriculture & Enterprise Development, Kenyatta University
13. Elizabeth Maina A144/OL/CTY/25786/2018: Phosphorous use efficiency, growth and yield of upland rice as influenced by various levels of phosphorus in Kirinyaga County, Kenya.
14. Patrick Lemargoi Lpopiroi. A149/OL/NKU/32836/2016. Factors influencing adoption of greenhouse farming among smallholder farmers in Samburu central sub-county, Kenya
15. Mirriam Okello. A148EA/27574/2019. Optimizing soybean yield, phosphorus use efficiency and economic returns using phosphatic fertilizer and inoculation with *Bradirhizobium* in Lira City, Uganda



16. Margaret Wangari Mwangi A148/37112/2017. Long-term influence of application of organic and inorganic substrates on soil microbial community, in a maize-soybean rotation system in Tharaka-Nithi County, Kenya
17. Jackline Kanana Ndegwa. A500/1340/2019. Integrated Soil fertility and water management practices for enhanced sorghum productivity in the drylands of Tharaka-nithi County, Kenya. University of Embu
18. Rugendo Kangai Mercy A500/1352/2019. Resilience of Nitisols and Ferralsols to erosion as influenced by levels of soil organic matter in Tharaka-Nithi County, Kenya. University of Embu

### **2.3.5. Ph D Completed**

1. **Felix Ngetich (I84/11873/2008)**. Enhancing Farmers' Agricultural Productivity Through Improved Water and Nutrient Use Efficiency in the Central Highlands of Kenya. Geography Department, Kenyatta University (**Graduated in December, 2012**)
2. **Ahmat Filbert Leone (A99F/24650/2011)** Use of rock phosphate with *Tithonia diversifolia* in maize-bean intercrop for improved maize yield under two contrasting agroecologies in Kenya. Department of Agricultural Science and Technology, Kenyatta University (**Graduated in 2014**)
3. **Abdi Zeila Dubow (A99/27181/2011)** Effect of Mulching and Nitrogen Application on Resource Use Efficiency, Yields and Soil Properties in Maize-soybean Rotations in Tharaka Nithi County, Kenya. Department of Agricultural Science and Technology, Kenyatta University (**Graduated in December, 2018**)
4. **Mwende Ngie (A99/29362/2014)**. Enhancing dryland farming through integrated management practices for water conservation in the semi arid areas of Machakos county Department of Agricultural Resource Management, School of Agriculture & Enterprise Development, Kenyatta University (**Graduated in July, 2019**)

### **2.3.6. MASTERS COMPLETED**

1. Serah Wairimu Kimaru (N50/CE/11927/2007). Enhancing communication for effective up scaling of soil fertility management technologies in the central highlands of Kenya. (Masters; 2009-current). Department of Environmental Studies and Community Development. School of Environmental Studies, Kenyatta University; **Graduated in December, 2011**.
2. Josephine Kamene Musyoki (N50/11900/07). The role of community forest in participatory forest management in Timau Region, North Central Kenya (Masters; 2011-current). Department of Environmental Education. School of Environmental Studies, Kenyatta University. **Graduated in December 2012**
3. Joseph Maina Macharia (N50/CE/15044/2008). Stakeholders' training needs for enhanced uptake and utilization of soil fertility management technologies in Meru South and Mbeere districts, Kenya. Department of Environmental Education. School of Environmental Studies, Kenyatta University. **graduated in December 2012**
4. James Macharia Chege (N50/CE/11939/2007). Household and farm characteristics influencing adoption of water harvesting structures among smallholder farmers in Kilifi District, Kenya. (Masters; 2009-current). Department of Environmental Studies and Community Development. School of Environmental Studies, Kenyatta University. **GRADUATED IN DECEMBER 2012**
5. Athanase Nduwumuremyi (A148/EA/20180/2010). Effect of Agricultural lime and local lime materials on soil properties and yield of Irish potatoes (*Solanum tuberosum* L.) in Burera District,

Rwanda. Department of Agricultural Resource Management. Kenyatta University. **GRADUATED IN DECEMBER 2013**

6. Jackson Sianje (A148/20170/2010). Effects of phosphorus sources and starter Nitrogen on Soil properties and yields of soybean in central highlands of Kenya. Department of Agricultural Resource Management. Kenyatta University. **Graduated in December, 2013.**
7. Okeyo, Akinyi Irene (N50/20444/2010). Effects of Selected Soil and Water Conservation Strategies on the Soil Nutrient Status in the Central Highlands of Kenya. Department of Environmental Education. School of Environmental Studies, Kenyatta University. **GRADUATED IN DECEMBER 2013**
8. Benvindo Serafim M. M. Verde: (A148F/25514/2011). Effects of Manure, Lime and Mineral Fertilizer on Soybean (*Glycine max* L. Merrill) Yields, Soil Properties and Microbial Biomass in Acid Soil of Central Highland of Kenya. Department of Agricultural Resource Management. Kenyatta University. **Graduated in July 2014**
9. Esther Wangeci Mugi (BSc.): N50/24880/2011. Integrating indigenous and conventional-based climate-based forecast for farmers enhanced adaptation to climate variability in Tharaka-Nithi and Kitui counties. Department of Environmental Sciences. **Graduated in July 2014**
10. Janvier Bashagaluke Bigabwa (A148F/20182/2010 ). Validation of a Novel approach for soil characterization by Infra red scanning and Land Sat in the Democratic Republic of Congo. Department of Agricultural Resource Management. Kenyatta University. **Graduated in December, 2014**
11. Titus Mbaluka Luta (A148/22275/2010) Effects of Organic Residues type and placement on Carbon sequestration, and Nitrogen and yields in Machakos County. Department of Agricultural Resource Management. Kenyatta University. **Graduated in December 2014**
12. Josias Mateus Matusso (A148F/23965/2011). Effect of Manure and Mineral Fertilizer on the Yields of Maize and Soybean under Intercrop and Monocrop Systems. Department of Agricultural Resource Management. Kenyatta University. **GRADUATED IN DECEMBER 2014**
13. Mwebia Frashiah Wangeci (N50/10715/2008). Farmer groups approach in upscaling of soil fertility management technologies in the central highlands of Kenya. Department of Environmental Sciences. School of Environmental Studies, Kenyatta University. **GRADUATED IN JULY 2015**
14. Esther Wanjue Njagi (N50/20702/2012). Farmer Groups' Characteristics influence on Soybean seeds dissemination in Embu, Tharaka Nithi and Meru Counties. (Masters; 2014-2016). Department of Environmental Sciences, School of Environmental Studies, Kenyatta University (**Graduated in July 2016**)
15. Mulinganya Bazibuhe Noel (A148F/21207/2012). Potential of local rhizobia strains to enhance nitrogen fixation by bio-fortified beans in South Kivu, Easter DRC Congo. Department of Agricultural Resource Management. Kenyatta University. (**Graduated in July 2016**)
16. Damascene Sibomana (A148EA/20759/2012). Effects of Integrated Soil Fertility Management and Tied-Ridging on Selected Soil Properties and Crop Yields in Meru County, Kenya. Department of Agricultural Resource Management. Kenyatta University. (**Graduated in December, 2016**)
17. Ada Mildred Achieng (N50/CTY/PT/26495/2013). Factors influencing adoption of integrated soil fertility management strategies for maize production in Embu County. Department of Environmental Sciences Kenyatta University (**Graduated in December, 2016**)

18. Harold Mate (A103/12343/09). Factors affecting the participation of farmers in collective marketing initiatives in Mbeere and Meru South District in Central Highlands of Kenya . Department of Agribusiness and trade, Kenyatta University. (**Graduated in December 2016**)
19. Albert Mwaniki (A148/22325/2011). Effects of inoculation and Phosphorous levels on Soybean (*Glycine max* L.Merril) yields and selected soil properties in Embu County Kenya. Department of Agricultural Resource Management. Kenyatta University (**Graduated in December, 2018**)
20. Peter Kibet (A144/31598/2015) Effects of agricultural limes on physiochemical soil properties and maize (*Zea mays* L) performance on acidic soils of Tharaka Nithi County. Department of Agricultural Resource Management. Kenyatta University (**Graduated in December, 2018**)
21. Mercy Ngum A152F/31805/2015. Analysis of soybean value chain in Embu, Tharaka-Nithi and Meru counties. Department of Agribusiness Management and Trade, School of Agriculture & Enterprise Development, Kenyatta University (**Graduated in July, 2019**)
22. Kimiti Winnie Wanjiru (N50/CTY/PT/33497/2014). Effect of lime, organic and inorganic inputs on soil acidity and productivity in Kirege, Tharaka Nithi, County). Department of Environmental Sciences, School of Environmental Studies, Kenyatta University. **Graduated in December, 2018**)
23. Steven Ogega (A147/30858/2015). Effect of inorganic nutrients on soil and crop productivity under conventional and conservation agriculture in Central Kenyan Highlands. Department of Agricultural Resource Management. School of Agriculture & Enterprise Development, Kenyatta University (**Graduated in December, 2019**)
24. Francis Mucira (A500/1092/2016). Enhancing soybean production, economics and adoption among smallholder farmers in the central Highlands of Kenya. Department of Agricultural Resource Management. University of Embu (**Graduated September, 2019**)
25. Macharia Mohamed Ndung'u (N50/31038/2015). Tied ridging and integrated soil fertility management (ISFM) technologies for improved soybean/maize productivity in the Central Highlands of Kenya. Department of Environmental Sciences, School of Environmental Studies, Kenyatta University (**Graduate in July, 2019**)
26. Benjamin Munganga (A148F/29060/2014). Effect of Manure, tithonia and mineral fertilizer on soil properties and cassava yield in DR Congo, south-Kivu. Department of Agricultural Resource Management. Kenyatta University. (**Graduated in December, 2019**)
27. Justine Mwambi Michoma: A144/30875/2015. Soil water, growth, and yield of yellow passion fruit response to mulch and hydrogel in Embu and Kiambu Counties, Kenya. (**Graduated in December, 2019**)
28. Ruth Wanjiku Kinuthia (A147/23533/2013) Assessment of soil and water conservation structures in establishment of agroforestry trees in East Shewa and West Shewa zone in Ethiopia. Department of Agricultural Resource Management. Kenyatta University. ( **Graduated in December, 2020**)
29. George Gacheru Mwaura: A142/37489/2017 Socio-economic and cultural factors influencing adoption of organic-based soil fertility management technologies in Meru south and Gatanga subcounties. (**Graduated June, 2021**)

30. Julieth Joseph Balilemwa (A147/28986/2013). Effect of water in-situ water harvesting on maize yields and soil properties in Morogoro Tanzania Department of Agricultural Resource Management. Kenyatta University (**Graduated June, 2021**)
31. Maureen Wairimu Njenga (A512/1234/2018). Influence of communication on uptake of selected climate smart agriculture practices among smallholder farmers in drylands of Tharaka-Nithi, Kenya. Department of Agricultural Economics, University of Embu. (**Graduated September, 2021**)
32. Amos Mwenda Ndeke A510/1187/2017: Gender influence on soil fertility management technologies uptake among smallholder farmers in Tharaka-Nithi County, Kenya. Department of Agricultural Economics and Extension. University of Embu. (**Graduated September, 2021**)

## **2.4 PROFESSIONAL/CONSULTING**

### **2.4.1 Networking**

1. 26-27 June 2019: Shell Thiogro and IPNI meeting at Vella Kempinsikii
2. African Green Revolution Forum: Invitation to the African Green Revolution forum (AGRF) 2018 in Kigali, Rwanda: 5-8, September, 2018
3. University of Embu: Sabbatical Leave from September 2017 to May 2018
4. AGRA/IFDC: Training workshop on implementation and outscaling of balanced crop nutrition in Africa 6<sup>th</sup> to 10<sup>th</sup> July 2016
5. University of Eldoret: Joint workshop on EARFRICA-CONNESSE project partners coordination workshop from 1<sup>st</sup> to 5<sup>th</sup> February 2016
6. AGRA: Workshop on synthesis of knowledge gaps on lime and fertilizer use for extension staff and stakeholders in ESA from 6<sup>th</sup> to 12<sup>th</sup> November 2016

### **2.4.2: Referee of Journal manuscripts**

1. **April, 2022:** Cover crops and mechanical scarification in the yield and industrial quality of upland rice
2. **February, 2022:** Ridge-furrow plastic mulch enhances grain yield and yield stability of rainfed maize by improving resources capture and use efficiency in semi-humid drought-prone regions: a five-season field study (AGWAT-D-22-00239)
3. **January, 2022:**Scientific African Journal: **Willingness of arable crop farmers to adopt organic farming practices in Oyo State, Nigeria (SCIAF-D-21-02070)**
4. **January 2021:** Long-term effects of living grass mulching on soil hydrology and fruit yield of citrus orchard in south China
5. **July 2020: Agricultural Water Management:** Interactive effects of Zai pits and soil fertility amendments on soil properties in drier upper Eastern Kenya
6. **February 2020:** Integrated soil nutrient management technologies improve smallholder farmers' maize productivity in the Central Highlands of Kenya
7. **January 2020:** Agricultural Water Management: AGWAT\_2019\_708; Water productivity and its allometric mechanism in mulching cultivated maize (*Zea mays* L.) in semiarid Kenya
8. **January, 2020:** Experimental Agriculture: **EAG-D-19-00344:** Determinants of smallholder farmers' decisions on fertilizer use for cereal crops in the Ethiopian highlands
9. **September, 2019: African Scientific Journal:** Manuscript Number: SCIAF-D-19-00063; (September,2019) Temporal characterisation of droughts using selected indices in the Upper Tana River Watershed, Kenya
10. **February 2019: Agricultural Water management: Manuscript number AGWAT\_2019\_29** (February, 2019). Strategies of dual-mulching of ridge-and-furrow to improve maize productivity in semi-humid regions of Loess Plateau

11. **December, 2018: Agricultural Water management: Manuscript number**  
AGWAT\_2018\_1224 (December, 2018) Vertical rotary sub-soiling and ridge-furrow with plastic mulch relieves drought stress by increasing soil water supply capacity and potato water uptake in semiarid area
12. **September, 2018: Referee of Experimental Agriculture Journal: Reviewed Manuscript (September, 2018)** ref.: ms. no. EAG-d-18-00167 Farmers' Determinants of soil fertilization, practices: ethnographic and econometric evidence from the semi-arid Ethiopian rift valley.

#### **2.4.3: National Board Member**

SATREPS Steering committee Rice Research project

#### **2.4.4: Professional Consultant**

Professional Consultant for CABI (November –December 2017): Impact of plant Clinics on Pest and disease Management in Malawi: Data analysis and writing a **Peer Reviewed Working Paper**

#### **2.4.5 External Examination (University –based)**

1. **External examiner at South Eastern University, Kenya:** Role: Moderate examination papers and scripts in all semesters. I moderate examinations for the Department of Natural Resources Management

#### **Thesis examination**

1. **University of Embu. August 2021;** Mycorrhizal fungi associated with *Aspilia pluriseta* on Phosphorus availability and growth of sorghum plants (**PhD**)
2. **University of Zimbabwe: August 2021:** Justin Chipombo Maize and weed response to fertilizer management across a soil fertility gradient in sub-humid Zimbabwe (**PhD**)
3. **University of Nairobi.** April 2021. Wilson Nguru Maina. Factors affecting the adoption of soil organic carbon enhancement technologies and their spatial distribution among small scale farmers in Kenya and Ethiopia (**Msc**)
4. **University of Nairobi:** March 2021. Stephen Muhati Ichami. Refining fertilizer recommendations using digital property maps, soil and plant testing for smallholder maize production systems in western Kenya. University of Nairobi (**Ph D**)
5. **University of Eldoret:** March 2021. Akoko Evans.“ Influence of phosphorus fertilizer on potato (*Solanum Tuberosum* L) seed production in acidic soils in Kenya (**Msc**)
6. **University of Zimbabwe** September 2018: Examination of Masters Thesis for Nyasha Marble Kafesu titled “Maize fertilization under conservation agriculture systems on heterogeneous smallholder farms in Zimbabwe (**Msc**)
7. **Jomo Kenyatta University of Agriculture and Technology:** John Nyaga Mwangi: October 2017. SC421-2926/2012 “Impact of trees on water and nutrients dynamics in smallholder maize-based farming systems in Rift Valley, Kenya. (**Ph D**)
8. **University of Embu:** September, 2016) “Effects of Tillage and Mulching on maize yield, soil water content and organic carbon in Kirege, Tharaka Nithi County, University of Embu by Evelyn Wambui Njogu-Murithi (**MSc**)”
9. **Jomo Kenyatta University of Agriculture and Technology:** Examination of 9 Masters Projects in July 2017
10. **James Cook University:** Examination of Fiona Mwaniki PhD thesis: (2016) Kenyan Farmers perception of adaptation of to climate change before and after a radio program interventions. James Cook University, Australia (**Ph D**)
11. Sydney Mwamba (October, 2016) MSc Research Methods. Root Knot Nematodes (*Meloidogyne Incognita*) interaction with selected Astaraceae plants and their potential use for nematode management. Jomo Kenyatta of Agriculture and Technology (**Masters**)

12. Ogeya Fredrick Odoyo Determination of best fit model for the distribution and crop loss associated with bacterial wilt of tomatoes. Jomo Kenyatta of Agriculture and Technology (*Masters*)
13. Megersa Tadese Jirtata Occurrence, distribution and management strategies for ascochyta blight (*Ascochyta rabiei pass*) of check pea (*Cicer arietinum L.*) in Ethiopia. (*Masters*)
14. Mambo Wilson Optimal compaction pressure, particle size and binder ratio for quality briquettes made from maize cobs. Jomo Kenyatta of Agriculture and Technology (*Masters*)

#### **2.4.6 Thesis Examination (Internal)**

1. 2010: Ruth Mwongeli (N50/10253/06) M. Env. Thesis entitled “Integrated Assessment of smallscale water harvesting and saving technologies in Machakos District, Kenya” Planning and Management, Kenyatta University (*Masters*)
2. 2011: Kirera Samuel Jacob Muthuri’s (156/10104/2007) Masters Thesis entitled “Analysis of some physical soil properties on water availability in Ngaciuma-Kinyaritha Sub-Catchment, Upper Tana Basin, Kenya (*Masters*)
3. 2012: Robert Kaalisa (156EA/12149/2009). Masters entitled “Factors Influencing adoption and use of soil and water conservation measures in Bufundi sub catchment, Kabale District, Uganda, Kenya. (*Masters*)
4. **June 2012:** Ms. Zirhahwakuhingwa Wivine Munyahali (N50F/13010/2009) M. Env. Thesis titled “Assessment of the effects of commercial chemical products on maize yields in different agroecological zones of Kenya” (*Masters*)
5. **March 2013:** Ms Mercy Nyambura Kamau (A148/13234/09) Masters of Science in Integrated Soil Fertility Management. Thesis title “Characterization of Africa’s Soil Mineralogy in relation to Soil fertility functional properties” (*Masters*)
6. **May 2013:** Mr Celestine Ndayisamba Pierre ( N50EA/12339/2009) M. Env. Thesis titled “Grain legumes and Mineral Fertilizers for soil productivity improvement in maize based systems of the Eastern Province of Rwanda (*Masters*)
7. **June 2013:** Ms Nadia Musaninkindi (A148EA/20179/2010) Masters of Science in Integrated Soil Fertility Management. Thesis title “Effect of cattle manure, mineral fertilizer and rhizobium inoculation on climbing beans production and soil properties changes in Burera District, Rwanda” (*Masters*)
8. **July 2013:** Mr Muambole Arlindo (A148F/21175/2010) Masters of Science in Integrated Soil Fertility Management. Thesis title “Efficiency of integrated incorporation of cattle manure and mineral fertilizers on maize yield in acidic soils of Beira Corridor, Mozambique (*Masters*)
9. **August, 2013:** Mr. James Kinyae Ngulu (N50/CE/20983/10) M. Env. Thesis entitled “An assessment of the adoption of improved mango varieties as an adaptation strategy to Climate change in Makueni County, KENYA” (*Masters*)
10. **June 2014:** Ms Salome Muriuki (N85/13276/2009). Ph D Thesis: Potential of Biogas technology for climate change Mitigation and improving livelihoods of smallholder farmers in Kiambu County, Kenya” (*PhD*)
11. **November 2013:** Ms Immaculee Nyampinga (A148EA/20984/2010) Msc thesis : The effect of method, rate of urea application on nitrogen use efficiency and yield of wetland rice in Rwamagana District, Rwanda (*Masters*)
12. **April 2014:** Ms Thandar Nyi (N85F/24868/2011) Ph D Thesis title: Improving Agronomic Efficiency in Cassava-based farming system in Central Africa using organic and Inorganic Inputs” (*Ph D*)

13. **October 2014:** Mr Sylvester Nyongesa Aura: (N50/CTY/20277/2010). Msc Thesis: Effects of Integrated soil fertility management technologies on crop yields and income for smallholder farmers in Mbale Division, Kenya” (*Masters*)
14. **July 2015:** Michel Kabirigi MSc “Effects of Conservation Agriculture on bean and maize yield, soil properties and water productivity in Bugesera District, Rwanda” (*Masters*)
15. **June 2015:** Joas Tugizimana’s. Effects of soil and water conservation technologies on soil productivity and bean yield in Nyamashere District, Rwanda” (*Masters*)
16. Ms. Lilian Shukuru Bahati’s (A148F/212062012) “Effect of *B. Japonicum* strains on soybean nodulation and indigenous AMF colonization and their survival in Walungu Peat under different storage conditions” (*Masters*)
17. August 2016 Mr Stephen Chege Wairuri “Dynamics of conflict in decentralized forest management in Mt Kenya” (*Ph D*)
18. **October 2016:** Naomi Ongucha (A148/20168/2010) Effect of NP fertilizers and manure application on maize-bean yields, and nitrogen mineralization in the Luvisols of Katumani, Machakos County (*Masters*)
19. **October 2016:** Sarah Wairimu Kimaru (N85/24932/2012). Effects of water harvesting techniques on agricultural production in the low midland zone of Tharaka-Nithi County, Kenya (*Ph D*)
20. **October 2016:** Lucy Wangui Nganga (N85/20710/2012) Soil carbon sequestration potential of different land use types on smallholder farms of Muranga County, Kenya (*Ph D*)
21. **February 2016:** Winnie Jelagat Kimutai’s (A144/24125/CTY/OL/2014). Effect of selected bradyrhizobium on growth, biological nitrogen fixation and yield of cowpea in Kilifi and Embu Counties (*Masters*)
22. March 2018: Ms Openda G. Susan A148/21591/2010 MSc Thesis “Improving maize-bean yields through improved soil moisture storage using trapezoidal bunds and manure in Machakos County-Eastern Kenya” (*Masters*)
23. **October 2018.** Ms Ngetich Alice Rotich A144/CE/24267/2013 MSc Thesis titled “Influence of spacing, plant architecture and nitrogen rates on the growth, yield and plasticity of grain Amaranth in Kiambu County” (*Masters*)
24. **May 2019:** Etabo Edung Mathew A144/OL/24077/2013: MSc Thesis titled “Effects of irrigation Scheduling and phosphatic fertilizer on yield of Nerica Rice (*Oryza Sativa*) in Mwea, Kirinyaga District” (*Masters*)
25. **June 2019:** Fidelis Githua A144/27027/2014 MSc Thesis titled “Effects of Acidulated Rock Phosphate on Growth and yield performance of Selected Leafy vegetables in Kiambu County. (*Masters*)
26. **June 2019:** Desire Nduwanama: titled “Effect of Nitrogen Fertilizer on Maize performance, nitrogen use efficiency and soil nitrogen transformation in smallholder farms in Rongo, Kenya” (*Masters*)
27. **September, 2019:** Heeran Mutuku: PHD/032/2029 “Tree cover perspectives and climate change resilience in the drylands of south Eastern Kenya: The case of Matungulu sub county, Machakos County” (*Masters*)
28. **October 2019:** Doris Gakii : M/TH/138: “Impact of smallscale irrigation projects on household livelihoods in Chuka/Igambangombe Constituency, Tharaka Nithi County. Kenya(*Masters*)
29. **January 2020:** Effects of Biochar and compost on soil physicochemical properties and maize from an acidic Ferrasols soil in Kamiti Sub-catchment, Kiambu County, Kenya(*Masters*)
30. **Ann Karanja April, 2020:** PhD Thesis: Quantifying Greenhouse gas emissions and carbon stocks in maize based cropping systems of Siaya County, Kenya (*Ph D*)

31. **Dennis May 2021** PHD thesis Production of Quality Organic Fertilizer from Black Soldier Fly Frass for crop production and soil Health management in Nairobi City County, Kenya. (*Ph D*)
32. **April 2021:** Effects of Human encroachment on natural Regeneration of indigenous tree seedlings in Kimakia Forest, Muranga County, Kenya (**Masters**)

## **2.5 ADMINISTRATION AND RESPONSIBILITIES**

### **2.6.1: Chairman: Department of agricultural Resource Management**

1. Acting Dean; School of Agriculture and Enterprise Development (October 2018)
2. Renewal of appointment as Chairman: Department of Agricultural resource Management from 7<sup>th</sup> February 2015
3. Confirmation of appointment as Chairman: Department of Agricultural resource Management from 7<sup>th</sup> February 2015
4. Appointment as Acting Chairman: Department of Agricultural Resource Management from August 2011

### **Achievements**

1. Accreditation of BSc in Animal Health and Management programme
2. Creation of Department of Animal Sciences
3. Initiated digital Mode of learning for Four Masters Programmes

### **2.6.2: Staff Mentor**

- Staff Mentor (2018)
- Staff Mentor for 2014/2015 Academic year

## **2.6 COMMUNITY SERVICE AND OTHER CONTRIBUTIONS**

### **2.6.1: Attracting Research Grants and Development Funding**

1. **September, 2020:** Research Grant by Kenya Climate Smart Agriculture Project (KSCAP). Balanced nutrition for management of soil acidity and nutrients deficiency for sustained agricultural productivity; Ksh 9,524,813. (One year Project: 2020 to 2021)
2. **June 2019-** EAC Masters scholarships on Integrated Soil Fertility Management
3. **January 2019 – December 2022 (4 years):** Climate smart options allowing agricultural intensification for smallholders in the dry zones of the Central Highlands of Kenya (€ 279, 113)
4. **October 2014 – September 2018:** CONNEcting knowledge, scales and actors; An integrated framework for adaptive organic resource management, targeting soil aggradation and agroecosystems' resilience in SSA; ERAfrica Project-NACOSTI-Kenya. 1,052, 106 EUR; **Nine partners and I was contact person, Kenyatta University Chapter**
5. **June 2014 – May 2017:** Alliance of a Green Revolution in Africa (AGRA) USD 549,645 on “Scaling up soybean and climbing beans using a value chain approach in maize-based systems of central Highlands of Kenya” [www.socoproject.org](http://www.socoproject.org)
6. **September 2012-December 2013:** Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA NRM/2012/09) USD 525,003; on “Integrated Soil Fertility management for improved Livelihoods”
7. **2011 – 2013:** International Atomic Energy Association (IAEA) USD 53, 013. Unravelling beneficial impacts of Nitrogen, carbon and water dynamics in mulch-based systems on crop



- productivity in heterogeneous biophysical environment of the central highlands of Kenya
8. **2011-2013:** RUFORUM Graduate Research Grants: USD 60,000. Enhancing crop productivity through soil water conservation and integrated drought prediction and preparedness techniques in the drier zones of central highlands of Kenya
  9. **2010-2013;** The Alliance for a Green Revolution in Africa (AGRA) (USD 806,629) on “Enhancing Productivity and Market Development of Soybeans and Climbing Beans in Central Highlands of Kenya”
  10. **2008-2013,** The Flemish Interuniversity Council Own Initiative (VLIR - UOS) Belgian Government funded grant (Euro 309,998.58) to conduct research on “Enhancing farmers’ benefits from integrated soil fertility management through improved water use efficiency and better marketing strategies in the highlands of central Kenya”
  11. **2009-2012;** Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) funded proposal (USD 577,000.00) on “Accelerated Uptake and Utilization of Soil Fertility Management Best-Bets Practices in ECA Region”
  12. **2004-2007,** The Flemish Interuniversity Council (VLIR - Belgium)
  13. **2004-2006,** FARM Africa MATF Grant (UK£ 60,000) to conduct research on “participatory scaling-up of soil nutrient management technologies for increased crop yields in smallholder farms of central highlands of Kenya”.
  14. **2006-2007,** Commission for Higher Education (CHE) funded proposal on “Food Security enhancement using soil nutrient replenishing technologies in the small holder farms of the central highlands of Kenya (Ksh. 3 million)”.
  15. **2001 – 2004:** The Bentley Fellowship (20,000 Canadian Dollars). Funded research on on-farm Participatory Evaluation and Promotion of Integrated Soil Fertility Management Practices within the smallholder farms of central Kenya

### **2.6.2: Community Outreach Programmes:**

1. Working with farmers in the field; Field days and training farming communities
2. Secretary to Christian Education Committee of Ridges PCEA Church from 2015 to 2018
3. Resource person on 19<sup>th</sup> September 2018: Scientific Writing Training, organized by Graduate School
4. Website ([jaynemugwe.socoproject.org](http://jaynemugwe.socoproject.org)) to share information on Research Methods and ISFM

### **2.6.3: Recognition, Awards and Honours**

- 1) Certificate: Best paper award 2017; Symposium on climate change and Drought resilience in Africa; 7<sup>th</sup> to 9<sup>th</sup> November 2017
- 2) Top ten best KU Researchers in publishing by Elsevier
- 3) Best Oral Paper; Food Security Theme during 11<sup>th</sup> Egerton International Conference and Innovation week (March, 2017)
- 4) Best scientific presentation in Socio-economics and Biometrics Section (November 2006: 10<sup>th</sup> KARI Biennial conference)
- 5) Third Best scientific presentation in Gender Integration in Research category (November 2002: 8<sup>th</sup> KARI Biennial conference)
- 6) Second Best scientific presentation in Soil Fertility Category (November 2002: 8<sup>th</sup> KARI Biennial conference)
- 7) Second Best scientific presentation in Soil and Water Management Category (November 2002: 8<sup>th</sup> KARI Biennial conference) Pan-paper mills prize for be

## **2.7 OTHERS**

### **2.7.1 Participation in Workshops/Conferences from 2011 to date**

1. **29<sup>th</sup> to 31<sup>st</sup> March 2017:** 11<sup>th</sup> Egerton University International Conference and Innovation week
2. **29<sup>th</sup> November to 2<sup>nd</sup> December, 2016.** Conference by the School of Agriculture and Enterprise Development. Kenyatta University
3. **6<sup>th</sup> to 12<sup>th</sup> November 2016:** Workshop on lime and fertilizer use for East and Southern Africa, Kigali, Rwanda
4. **5<sup>th</sup> to 9<sup>th</sup> September, 2016:** Agriculture Green Revolution Forum (AGRF), UN, Nairobi, Kenya
5. **28<sup>th</sup> February to 4<sup>th</sup> March 2016:** Pan – African Grain Legume and World Cowpea conference at Avani Victoria Falls Resort, Zambia
6. **1<sup>st</sup> to 5<sup>th</sup> February 2016:** Writeshop on ISFM: ISFM writeshop at Simba Lodge, Naivasha, Kenya
7. **6<sup>th</sup> to 10<sup>th</sup> July 2015:** Implementation and Out scaling of balanced Crop Nutrition in Africa. By International Fertilizer Development Centre, Nairobi, Kenya
8. **4<sup>th</sup> to 7<sup>th</sup> February 2015:** Kick off workshop on CONNEcting knowledge, scales and actors; An integrated framework for adaptive organic resource management, targeting soil aggradation and agroecosystems' resilience in SSA, University of Eldoret, Eldoret, Kenya.
9. **1<sup>st</sup> - 5<sup>th</sup> December 2014;** International Conference on Building a new generation of Agricultural Scientists; Kenyatta University, Nairobi
10. **30 June to 4 July:** International Grantees Workshop at the Mount Meru Hotel in Arusha, Tanzania.
11. **20 – 25<sup>th</sup> October, 2013:** Soil Science Society of East Africa/African Soil Science Society Conference, Nakuru, Kenya
12. **3<sup>rd</sup>-7<sup>th</sup> September, 2013:** African Green Revolution Forum (AGRF) symposium Maputo, Mozambique
13. **14 – 17<sup>th</sup> October, 2013:** 11<sup>th</sup> African Crop Science Conference, Imperial Botanical Hotel, Entebbe, Uganda
14. **August 9<sup>th</sup> to 10<sup>th</sup>, 2013:** Training workshop on Impact Assessment of Agricultural Technologies: Embu, Kenya
15. May 2013 (15<sup>th</sup> to 17<sup>th</sup>): Agricultural Value Chain analysis (3 days) at Kaguru Training Centre, Maara, Kenya
16. January 2013: Data Management and analysis; Kenyatta university, Kenya
17. 22<sup>nd</sup> to 26<sup>th</sup> October 2012. Integrated Soil Fertility Management: From microbes to Markets. Safari Park hotel, Nairobi
18. 25<sup>th</sup> – 28<sup>th</sup> July 2012: 1<sup>st</sup> international conference on natural resources, peace and Conflicts. Karatina university College, Karatina, Kenya.
19. 4<sup>th</sup> to 8<sup>th</sup> June 2012: Workshop organized by Alliance for a Green revolution in Africa, Windsor Golf Hotel, Nairobi
20. October 2012 (One week): Agricultural Innovation Systems (AIS) and Value chain Development (VCD), Kigali, Rwanda
21. February 2011: Training workshop on group facilitation skills. Held at Embu Agricultural Training Centre on 13<sup>th</sup> February 2012
22. 23<sup>rd</sup> - 27<sup>th</sup> October, 2011; Conference on Agricultural Intensification of the African Humid Highlands (CIALCA). August 8<sup>th</sup> to 10<sup>th</sup>, 2014: Training workshop on Experimentation and Economic data collection and analysis, Embu University College, Embu County, Kenya

### **2.7.2 Conferences /workshops/writeshops organized**

1. 17<sup>th</sup> to 21 October 2016: Writeshop to develop training manuals for farmer groups at AICAD, JKUAT, JUJA
2. 17<sup>th</sup> to 19<sup>th</sup> February 2016: Editing writeshop for documentation committee at Mountain Breeze Hotel, Embu
3. 16<sup>th</sup> to 20<sup>th</sup> November 2015; Writeshop to develop knowledge sharing products for integrated soil fertility management promotion; Sagana Getaway Resort; Murang'a
4. 19<sup>th</sup> – 20<sup>th</sup> February 2015: Training workshop for Field Extension Officers on ISFM, Group Dynamics and Leadership at Kaguru FTC
5. 8<sup>th</sup> to 10<sup>th</sup> August 2014: Experimentation and Economic data collection and analysis, Embu University College: Funded by AGRA
6. 13<sup>th</sup> and 17<sup>th</sup> May 2013: Value Chain stakeholders analysis workshop, Kaguru Farmers Training Centre, Chogoria: Funded by ASARECA
7. April 2013: End of AGRA SoCo project workshop, Panestic Hotel, Embu
8. 30<sup>th</sup> April and 1<sup>st</sup> May 2012: Monitoring and Evaluation workshop, Panestic Hotel Embu: Facilitator, Dr. Vincent Oeba
9. May 5-6 2003: Two-day stakeholders workshop on integrated soil fertility management strategies at Salkan hotel, Embu, Kenya
10. December 2003: One-week 21<sup>st</sup> Soil Science Society of East Africa conference, Eldoret, Kenya
11. November 2007: One-week 24<sup>th</sup> Soil Science Society of East Africa conference, Embu, Kenya
12. July 2009: Two days Inception workshop for Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) regional workshop, Safari Park Hotel, Kenya.
13. January 2011: Three days Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) regional workshop, Safari Park Hotel, Kenya.
14. September 2011: Three days Project closing workshop for Association for Strengthening Agricultural

### **2.7.3 Professional Competencies**

- Competent in use of EXCEL; SPSS; Competent in use of SAS and GENSTAT
- I used these programmes extensively for analyzing my PhD data, and continue using them in my research work
- Data analysis; both experimental and survey data
- Socially, I have worked with various teams; teams to develop research proposals; implementation of research projects. I work with several social groups from the church and in my local community (spiritual and welfare groups)

### **2.7.4: Academic Leadership**

- 2016 Chair: Subcommittee on Coding of programmes in the School of Agriculture and Enterprise development
- 2016: Spearheaded Accreditation of Animal Health and Production Programme
- 2016: Spearheaded creation of Department of Animal Sciences from the ARM Department
- Chair: Department of Agricultural Resource Management from August 2011 to February 2017e
- Coordinated a stakeholders One-day workshop for BSc Animal Health and production in July 2016
- Coordinated development of Msc Dryland Agriculture and MSc Animal Nutrition and Management
- Coordinated the development of BSc Animal Health and production programme in 2015 which was approved in March 2016

- Coordinated development of Digital School programmes in MSc integrated soil fertility management, MSc Land and water management, MSc animal Nutrition and Management and MSc Dryland agriculture from 2012 to 2013

### **2.7.5 Research Leadership**

1. **Co PI (KU Chapter)** Research Grant by Kenya Climate Smart Agriculture Project (KSCAP). “Balanced nutrition for management of soil acidity and nutrients deficiency for sustained agricultural productivity”; **KES 9,524,813**.
2. Project Manager for AGRA project (2013 SHP 014), March 2010 to February 2013. Donor; AGRA Contact Person; Dr. Abed Kiwia; E mail; [akiwia@agra-alliance.org](mailto:akiwia@agra-alliance.org)
3. Project Leader for ASARECA Project NRM/2012/09; Upscaling soil fertility management for improved livelihoods. Donor; ASARECA Contact Person: Dr Hezron Mogaka. E mail [hezronmogaka@gmail.com](mailto:hezronmogaka@gmail.com)
4. Project Manager for AGRA project (SHP 022), March 2010 to February 2013. Donor; AGRA Contact Person; Dr. Abed Kiwia; E mail: [akiwia@agra-alliance.org](mailto:akiwia@agra-alliance.org)
5. Project Leader for ASARECA Project (NRM/09/01) July 2009 to September 2011. Donor; ASARECA Contact Person: Dr Hezron Mogaka. E mail; [hezronmogaka@gmail.com](mailto:hezronmogaka@gmail.com)

### **2.7.6 Capacity Building**

1. September, 2020: Training on Data management, Analysis and Scientific writing for Post graduate students from KU, UoEm, SEKU and Chuka
2. May 2016: Organised a two-day training on the use of SAS (18 participants)
3. March 2016: Organised a writeshop to develop knowledge sharing products on integrated soil fertility management
4. October 2015: Organized a two –day Agro-dealer training workshop
5. August 2015: Organized a two day training workshop for Local processors/entrepreneurs

### **2.7.7: Professional Associations**

1. Member of the African Network (AfNet) of Tropical Soil Biology and Fertility Institute of CIAT – 2000 to date
2. Chairperson: Soil Science Society of East Africa: Kenya Chapter (2010 – 2011)
3. Soil Science Society of East Africa – 2001 to date
4. African Crop Science Society – 2001 to date
5. Member of African Forestry Research Network (AFRONET)

### **Contribution to University Advancement**

1. **June 2019:** Masters Degree in integrated soil fertility programme selected to host East African Scholarships
2. **April 2019:** PhD in integrated soil fertility Management (PhD ISFM) selected for on-site visits by Partnership for skills in Applied Sciences, Engineering and Technology (PASET)
3. Chair: Committee on development of proposals for African Union 2016
4. Chair: School farm relocation committee
5. Committee Member: Dairy Tech farm Committee

6. Committee Member: Harmonization of Credit Waiver
7. Member: Development of On line Research methodology Course (PUCU 500)
8. Committee Member: Institute of African studies

### **Community participation**

1. Working with farmers: Development of Extension materials and promotion of technologies through field days; Training of farmers
2. 2015 February to Date: Member of Christian Education Committee, PCEA Ridges Church.
3. 2010 to Date: Coordinator: Membley Gracious Ladies organization
4. 2008 – 2009 Deacon: PCEA; Membley Church
5. 2017 to 2019: Chair of Gracious Girls Welfare group (12 Members)
6. 2017 to Date: Patron: Greenberry Mentorship Initiative
7. 2014 to date: Member Woman’s Guild PCEA Church: Commissioned on 14<sup>th</sup> April, 2019
8. 2015 to Date: Church School teacher; Ridges PCEA church: Commissioned on 1<sup>st</sup> September 2019
9. January 2019 to date : Member of Board of Management: PCEA Ridges School; Chair of Academic Committee

## **12.0 REFEREES**

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