



ORCHID: 0000-0003-0872-1200

Position: *Senior Research Scientist – Natural Resources Management/ Climate Change*

1. PERSONAL INFORMATION

- | | |
|--------------------|---|
| 1.1. NAME | JESSE OMONDI OWINO |
| 1.2. ADDRESS | P.O. BOX 382-20203, LONDIANI, KENYA |
| 1.3. PHONE | +254723772172 |
| 1.4. EMAIL ADDRESS | owinojesse@gmail.com & jowino@kefri.org |
| 1.5. NATIONALITY | Kenyan |
| 1.6. GENDER | Male |

2. QUALIFICATIONS

2.1. Academic Qualifications

- | | |
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| 2015-2020 | PhD in Climate Change and Adaptation, University of Nairobi, Kenya |
| 2008-2012 | MSc in Natural Resources Management, Egerton University, Kenya |
| 2003-2007 | BSc in Natural Resources Management, Egerton University, Kenya |

2.2. Key Competencies

Climate change: Expert in greenhouse gas emissions measurements from biological sources. Expert in smallholder farmers characterization with data entry using ODK, expert in characterization of areas based on biophysical classification using QGIS and open-source data sources. Expert in designing and implementing climate change mitigation and adaptation programs. Expert in big data analytics

Natural resources: Expert in natural resources management science and research, Skill in integrating projects with rural communities. Expert in implementing programs in arid and semi-arid lands. Forestry and allied natural resources expert in developing, designing, and implementing programs of these nature.

Resource mobilization: Immense experience with successes in resource mobilization and partnership building to implement joint programs across many areas. I have long-term networks with global institutions that useful in building capacity.

Information Technology: Expert Level on Networks and advanced level Database. I have skills in programming (using C++) use of Database analysis software such as SPSS, STATA, EPI Info, SARS, R, Operating Systems; Android, Linux, Symbian, Mac OS and Microsoft Based Software. Presentations using PowerPoint, Adobe suites and CorelDraw. Ecological Niche Modelling Software: Maxent, Garp, QGIS, Estimate, SAM and Zonation. Instructor for MS Projects and other technical software. Expert in data analysis using ecological protocols

ISO Standards: Trained as an auditor for ISO 9001: 2008, ISO 14001:-2004, ISO 17025:2005, ISO 22000, ISO 15189:2007

Life skills: Trained in ICS- Incident Command Systems, advanced first aid, and Medical laboratory protocols.

2.3. Other Courses

International Livestock Research Institute

(Jan 2015- Dec 2017) Graduate Fellow (PHD)-Affiliation
(GHG emissions, Sustainable Livestock and Environment Systems)

The University of Kansas

(2013) Biodiversity Informatics Data Analysis

The University of Kansas

(2013) Ecological Niche Modelling

Centre for Development Innovation (CDI) of the Wageningen University in the Netherlands

(2012) Fellowship- Adaptive Management of Natural Resources

3. EMPLOYMENT HISTORY

- July 2018-to Date** Senior Research Scientist (Drylands Forestry)- Natural Resources Management/Ecology.
- June 2014- June 2018** Research Scientist 1 (Drylands Forestry) - Natural Resources Management/Ecology
- Feb 2011-May 2014** Senior Facilities Management Officer SB 5-State Corporation under Ministry of Sports, Culture and the Arts. With key tasks water and land resources.
- Aug 2008- Dec 2012** Research Scientist on Human-Wildlife ecology study for Egerton University.
- Sept. 2007- April 2008`** Research IT and Data officer in KEMRI-UCSF Kisumu.
- May 2007- Sept 2007** Monitoring and evaluation officer Agriculture and Environment Program- Catholic diocese of Homabay's Resources Development.
- Aug 2003-Aug 2007** Participated in various gender conscious activities countrywide courtesy of Egerton University, as a leader of the student body and resource person on resources. Activities involved running a girl child fund, mentorship program for high schools and student counselling.
- August 2002 -June 2003** Enumerator in various baseline surveys by World Food Program (WFP), KEMRI- WELLCOME TRUST and Kenya Government Departments.
- Feb 2002-October 2002** Research Assistant on a post-doctoral study.
- January 2002- Aug 2003** Communication and ICT at the Western Region Community Communications Service for the Anglican Church.

4. ADMINSTRATIVE RESPONSIBILITY

June 2019- to Date Deputy Regional Director -Rift Valley Eco-Region Research Program
June 2013- May 2019 Assistant Regional Director- Turkana Forestry Research Sub-centre
May 2009- May 2013 Senior facilities management officer- Sports Kenya

5. PUBLICATIONS

5.1. Journal papers

Publications

- First-author

Jesse Owino, Jackline Kemboi and Gabriel Muturi. " Rangeland rehabilitation using micro-catchments and native species in Turkana County, Kenya." *Journal of Ecology and The Natural Environment* 13, no. 2 (2021): 30-40. DOI: 10.5897/JENE2020.0833

Jesse Owino, Daniel Olago, Shem O. Wandiga and Asaah Ndambi. "A cluster analysis of variables essential for climate change adaptation of smallholder dairy farmers of Nandi County, Kenya." *African Journal of Agricultural Research* 16, no. 7 (2020): 1007-1014. <https://doi.org/10.5897/AJAR2020.14965>

Jesse Owino, Daniel Olago, Shem O. Wandiga and Asaah Ndambi. "Constraints limiting the improvement of manure management as climate smart technology for smallholder dairy farmers." *African Journal of Agricultural Research* 16, no. 8 (2020): 1155-1168. <https://doi.org/10.5897/AJAR2020.15018>

Owino, Jesse, Peter Murithi Angaine, Alice Adongo Onyango, Samson Okoth Ojunga, and John Otuoma. "Evaluating Variation in Seed Quality Attributes in Pinus Patula Clonal Orchards using Cone Cluster Analysis." *Journal of Forests* 7, no. 1 (2020): 1-8.

Owino, J., J. J. Kemboi, P. M. Mwanje, K. C. Ibuya, G. A. Enyang, F. E. Emanikor, J. M. Wachira et al. "Ecological Assessment Of Performance Of Tree Species Used In Rehabilitating Degraded Areas Of Turkana County, Kenya." *Academia Journal of Environmental Science* (2019): 8(4): 064-070, April 2020.

Owino, J., Lomekuya, F., Kemboi, J., Malala, J., Orina, A., Ang'elei, I., Njeru, M., Lukwendah, A., Nyambati, R., Amwatta, J., Cheboiwo, J., Muturi, G. M. and Chikamai, B. (2020). Sustainable management of the natural vegetation cover and fish breeding grounds in the western shores of Lake Turkana. *Academia Journal of Environmental Science*, 8(June), 96–102. <https://doi.org/10.15413/ajes.2020.010>

Owino J.O. Olago D, Wandiga, S. 2020. Manure management for climate change mitigation and nutrient retention policy brief for University of Nairobi, Policy Guide.

Jesse Owino, David Pelster, Klaus Butterbach-Bahl, Oghaiki Asaah Ndambi, Shem Wandiga, Daniel Olago, Mariana Rufino, Lutz Merbold. 2018. Improved Greenhouse Gas Emissions and Nutrient Losses Estimates from Manure of Kenyan Smallholder Dairy Farmers Presented in Improved Greenhouse Gas Emissions and Nutrient Losses Estimates from Manure of Kenyan Smallholder Dairy Farmers. https://cgspace.cgiar.org/bitstream/handle/10568/98383/improved_ghg_emissions.pdf

Owino J.O, Sharmake A, and Muturi G, 2017. *Rangeland Rehabilitation using selected trees in Turkana County, Kenya* presented during the 6th International Conference on Drylands, Deserts and Desertification, Sede Boqer, Israel Nov, 2017.

Owino J.O, Sharmake A, and Muturi G, 2016. *Rangeland Rehabilitation using Micro-catchments in Turkana County, Kenya*. Academia Journal of Scientific Research 4(6): 000-000, September 2016. DOI: 10.15413/ajsr.2016.0614. ISSN: 2315-7712

Owino Jesse. 2013. *Ecological Response of Chloris Roxburghiana to Wildlife and Livestock Grazing in Chyulu Hills National Park and Environs, Kenya*. M.Sc. Natural Resources Management Thesis at Egerton University Library

- Co-author

Everlyne Ejore, Roxventa Ongugo, Jackline Kemboi, Samson Ojunga, Patrick Mwenja, **Jesse Owino**. "Plant species and their importance to housing in the Turkana community, Kenya" Journal of Horticulture and Forestry 12 no 3 (2020): pp. 101-108. <https://doi.org/10.5897/JHF2020.0634>

Onyango, Alice Adongo, Peter Murithi Angaine, Shadrack Kinyua Inoti, and **Jesse Owino**. "Patula pine (*Pinus patula*) cones opening under different treatments for rapid seed extraction in Londiani, Kenya." Journal of Horticulture and Forestry 12, no. 2 (2020): 63-69.

Angaine, Peter Murithi, Alice Adongo Onyango, and **Jesse Owino**. "Morphometrics of *Pinus patula* crown and its effect on cone characteristics and seed yield in Kenya." Journal of Horticulture and Forestry 12, no. 3 (2020): 94-100.

Ndambi, Oghaiki Asaah, David Everett Pelster, **Jesse Owino**, Fridtjof De Buissonje, and Theun Vellinga. "Manure management practices and policies in sub-Saharan Africa: implications on manure quality as a fertilizer." *Frontiers in Sustainable Food Systems* 3 (2019): 29. <https://doi.org/10.3389/fsufs.2019.00029>
<https://www.frontiersin.org/articles/10.3389/fsufs.2019.00029/full>

Enyang', G. A., Kemboi, J. and **Owino, J.** (2020). Seed germination , seedling growth and biomass prediction on pre treated seeds of *Acacia senegal*. *Academia Journal of Agricultural Research*, 8(June), 187–192. <https://doi.org/10.15413/ajar.2020.0115>

Emanikor, F., Kemboi, J., Mwenje, P., Wachira, J. and **Owino, J.** (2017). Seed germination, early growth and biomass prediction of locally sourced *Terminalia brownii* in Turkana County, Kenya. *Academia Journal of Agricultural Research*, 8(May), 156–160. <https://doi.org/10.15413/ajar.2020.0111>

Waweru F.K and **Owino J.O.** 2013. Ecological Response of *Chloris Roxburghiana* to Wildlife and Livestock Grazing in Chyulu Hills National Park and Environs, Kenya. In *International Journal of Engineering Research & Technology (IJERT)*, Vol. 2 Issue 12, December 2013

Mengich, E.K., Cheboiwo, J.K., Mulatya, J., **Owino J.** and Ongugo P. 2017. Guidelines for Integrating Trees in Irrigated Agriculture Landscapes of Kenya. KEFRI, Nairobi.

5.2. Technical Notes /Protocols/Guidelines

Leitner, S., Pelster, D., **Owino, J.**, Marquardt, S. and Merbold, L. 2020. Protocol for generating region-specific Tier 2 emission factors for methane (CH₄) and nitrous oxide (N₂O) emissions from cattle manure. ILRI Manual 36. Nairobi, Kenya: International Livestock Research Institute (ILRI).

Lutz Merbold, Klaus Butterbach-Bahl, Polly Ericksen, John P. Goopy, Daniel Korir, Sonja Leitner, Paul Mutuo, Phyllis Ndung'u, Alice Onyango, **Jesse Owino**, David E. Pelster, George Wanyama (2018). Opportunities in LED agriculture in East Africa: A regional perspective. <https://www.slideshare.net/cgiarclimate/opportunities-for-led-in-agriculture-in-east-africa-a-regional-perspective>

Owino J.O. Olago D, Wandiga, S. 2020<http://uonresearch.org/sfdc/article/improving-manure-management-practices-towards-nutrient-retention-and-ghg-emissions-reduction-for-smallholder-dairy-farmers-in-nandi-county-kenya/>

Jesse Owino, David Pelster, Klaus Butterbach-Bahl, Oghaiki Asaah Ndambi, Shem Wandiga, Daniel Olago, Mariana Rufino, Lutz Merbold. 2018. Improved Greenhouse Gas Emissions and Nutrient Losses Estimates from Manure of Kenyan Smallholder Dairy Farmers Presented in Improved Greenhouse Gas Emissions and Nutrient Losses Estimates from Manure of Kenyan Smallholder Dairy Farmers.
https://cgspace.cgiar.org/bitstream/handle/10568/98383/improved_ghg_emissions.pdf

Mengich, E.K., Cheboiwo, J.K., Mulatya, J., **Owino J.** and Ongugo P. 2017. Guidelines for Integrating Trees in Irrigated Agriculture Landscapes of Kenya. KEFRI, Nairobi.

Owino J.O., Sharmake A, and Muturi G, 2017. *Rangeland Rehabilitation using selected trees in Turkana County, Kenya* presented during the 6th International Conference on Drylands, Deserts and Desertification, Sede Boqer, Israel Nov, 2017.

5.3. Policy Briefs

Owino J.O. Olago D, Wandiga, S. 2020. Manure management for climate change mitigation and nutrient retention policy brief for University of Nairobi, Policy Guide.

6. RESEARCH

6.1. Completed

Newton Grants (2016-2017, 2017-2018, 2021) Innovations for increasing water availability for plant and domestic requirements. University of Edinburgh, Strathmore University, Kenya Agriculture and Livestock Research Organization, Kenya Water Institute, Kenya Forestry Research Institute-Turkana Forestry Research Sub-Region.

GIZ-Kenya Drought Resilience Program I-Turkana 2016-2017
Food and Nutrition Service- Turkana 2017-2018
Drought resilience Program II Turkana 2018-2019
Technical Cooperation Facility -Turkana 2018-2019

FAO-Kenya Sustainable Land Management- Turkana 2018-2019

6.2. Ongoing research

1. Component lead investigator in research on rehabilitation of the Turkwel riparian ecosystem
2. Component lead investigator in research on rehabilitation and restoration of the degraded Loima ecosystem
3. Component lead investigator in research on identification and formulation of fodder from select species in Turkana
4. Component lead investigator in research on acacia senegal and the gum value chain in Turkana

6.3. Mentorship and supervision

Jackline Jemutai Kemboi (A56/89367/2016-University of Nairobi) "Evaluation of the potential of proppis based products in combination with grass and Vachellia tortilis pods as animal feed in Turkana County"

7. INNOVATIONS AND PATENTS (Intellectual Property)

Owino, Jesse Omondi, Peter Murithi Angaine, Alice Adongo Onyango, Samson Okoth Ojunga, and John Otuoma. "Evaluating Variation in Seed Quality Attributes in Pinus Patula Clonal Orchards using Cone Cluster Analysis." *Journal of Forests* 7, no. 1 (2020): 1-8.

8. CONFERENCES/SEMINARS/WORKSHOPS

8.1. Presentation of Papers at Academic and Professional Conferences

International accredited peer reviewed conference papers

Owino Jesse, Kemboi Jackline, 2019. Germination of various dryland tree species important to the Turkana Community. presented on XXV IUFRO Congress in Curitiba, Brazil

Edward Mengich and **Jesse Owino** "The role of eco-physiology in enhancing livelihoods resilience among Pastoralists in Eastern Africa: a review of recent research in the eco-physiology of useful trees, crops and pastures in the drylands of Kenya" Presented in regional conference on recent research, and policy options to be held between 21st and 23rd May 2019 in Moroto, Uganda,

Muturi, G.M, and **Owino, J.** 2018. Land Degradation, Desertification, Land Degradation Neutrality and Land Invasibility. presented TURKANA COUNTY LIVESTOCK DEPARTMENT-PASTORAL ECONOMY CONFERENCE: 2018, "Future of Pastoralism in Changing Dynamics of Turkana County". <https://futureofpastoralismturkana2018.files.wordpress.com/2018/08/land-degradation-desertification-land-degradation-neutrality-and-land-invasibility-dr-gabriel-muturi.pdf>

Muga M., Luvanda A.M, Oriwo V, Chikamai B.N. and **Owino J.** 2018. Untapped natural resource potential for livelihood improvement in Turkana County, Kenya: Case study of Gum Arabic. presented TURKANA COUNTY LIVESTOCK DEPARTMENT-PASTORAL ECONOMY CONFERENCE: 2018, "Future of Pastoralism in Changing Dynamics of Turkana County". <https://futureofpastoralismturkana2018.files.wordpress.com/2018/08/untapped-natural-resource-potential-for-livelihood-improvement-in-turkana-county-kenya-case-study-of-gum-arabic-albert-luvanda-makee.pdf>

Owino Jesse, Olago Daniel, Wandiga Shem and Asaah Ndambi, 2018. Improving manure management practices towards nutrient retention and GHG emissions reduction for smallholder dairy farmers in Nandi County, Kenya, presented during the 1st Conference on Science for Development, to be held at the University of Nairobi's College of Biological and Physical Sciences (CBPS) between 24th - 25th October, 2018.

Owino Jesse, Olago Daniel, Wandiga Shem and Asaah Ndambi, 2018. Greenhouse gas emissions and nutrient losses from manure heaps of smallholder dairy farmers in Nandi County, Kenya presented during the 1st Conference on Science for Development, to be held at the University of Nairobi's College of Biological and Physical Sciences (CBPS) between 24th - 25th October, 2018.

Owino Jesse, Kemboi Jackline and Muturi Gabriel. 2018. Water harvesting infrastructure and selected tree performance in dryland of Turkana County, Kenya. presented during 5th KEFRI international Conference. 2018.

Owino J.O, Sharmake A, and Muturi G, 2017. Rangeland Rehabilitation using selected trees in Turkana County, Kenya presented during the 6th International Conference on Drylands, Deserts and Desertification, Sede Boqer, Israel Nov, 2017.

Owino Jesse. 2016. Innovative community-based rangeland practices presented during the 2nd National conference on Sustainable Land Management, Elementaita, Kenya.

Owino Jesse. 2013. Suitable rangeland practices using pasture to rehabilitate rangelands. presented during the 1st National conference on Sustainable Land Management, Naivasha, Kenya.

8.2. Participation in Workshops/Conferences

Resource person in TURKANA COUNTY LIVESTOCK DEPARTMENT-PASTORAL ECONOMY CONFERENCE: 2018, "Future of Pastoralism in Changing Dynamics of Turkana County". <https://futureofpastoralismturkana2018.files.wordpress.com>

8.3. Convening/Coordinating Conferences

Chief rapporteur: in TURKANA COUNTY LIVESTOCK DEPARTMENT-PASTORAL ECONOMY CONFERENCE: 2018, "Future of Pastoralism in Changing Dynamics of Turkana County". <https://futureofpastoralismturkana2018.wordpress.com>

9. PROFESSIONAL ENGAGEMENT

9.1. Training

Sept 2019	Essential Biodiversity variables and Ecosystems Valuation- JRS-biodiversity Foundation
Jan- Feb 2019	Senior Management Course- Kenya School of Government
Sept 2014	<i>Rapid Carbon Stock Appraisal and Development of Project Idea Note and Project Design Document</i> -KEFRI/AFF
May 2014-July 2014	UNCC introductory e-course on Climate Change -UN
May 2012-July 2012	Mainstreaming Climate Change in Development Planning and Implementation -UN
June 2011	Trained as an auditor in ISO 14001-2004 EMS and ISO 9001-2008 QMS
April 2011	Trained on Reducing Emissions from Deforestation and Forest Degradation and Conserving and Enhancing forest Carbon Stocks (REDD+)
March 2011	Trained on Government and Civil Society organizations Partnerships Successful Cross-Sectoral Collaboration – Making it Happen
Feb 2011	Trained on Strategic Planning for management. Performance Target Setting, Performance Contracting, Midterm Review, Monitoring and Evaluation of performance

9.2. Consultancies

2017:	Conducting feasibility study on utilizing prosopis juliflora for Turkana County Government
2016-2019:	Conducting feasibilities for siting and strategies for implementation for development projects in turkana and West Pokot Counties in Kenys for GIZ-Kenya
2015:	Conducting feasibility for siting community agriculture project for NGO (AICHM) in Turkana County

9.3. Collaboration with external organizations

Newton Grants (2016-2017, 2017-2018, 2020) Innovations for increasing water availability for plant and domestic requirements. University of Edinburgh, Strathmore University, Kenya Agriculture and Livestock Research Organization, Kenya Water Institute, Kenya Forestry Research Institute-Turkana Forestry Research Sub-Region.

GIZ-Kenya Drought Resilience Program I-Turkana 2016-2017
Food and Nutrition Service- Turkana 2017-2018
Drought resilience Program II Turkana 2018-2019
Technical Cooperation Facility -Turkana 2018-2019

FAO-Kenya Sustainable Land Management- Turkana 2018-2019

10. EXTERNAL AND INTERNAL RESEARCH GRANTS

GCRF-Newton Grants (2016-2017, 2017-2018, 2020) Innovations for increasing water availability for plant and domestic requirements. University of Edinburgh, Strathmore University, Kenya Agriculture and Livestock Research Organization, Kenya Water Institute, Kenya Forestry Research Institute-Turkana Forestry Research Sub-Region.

GIZ-Kenya Drought Resilience Program I-Turkana 2016-2017
Food and Nutrition Service- Turkana 2017-2018
Drought resilience Program II Turkana 2018-2019
Technical Cooperation Facility -Turkana 2018-2019

FAO-Kenya Sustainable Land Management- Turkana 2018-2019

11. LOCAL, REGIONAL & INTERNATIONAL APPOINTMENTS

11.1. Regional
(Africa) representative for Biodiversity Informatics and Ecosystems functions and representing Africa in JRS (Biodiversity foundation).

12. AWARDS AND RECOGNITION

- 2019-Oxford University/ University of Rwanda- course Fellowship
- ILRI-DAAD-in country PhD scholarship 2015-2017
- Kansas University course fellowships 2012-2013
- Wageningen University course fellowship 2011-2012

13. CONTRIBUTION TO KEFRI's ADVANCEMENT

National Principal Investigator for Sustainable Water and Irrigation in Drylands-KEFRI/KALRO/KEWI/Strathmore University/Jomo Kenyatta University of Agriculture and Technology/ University of Edinburgh

14. MEMBERSHIP TO PROFESSIONAL BODIES

Member Africa Forest Forum

Member Forestry Society of Kenya

Member British Ecological Society

National Environment Management Authority listed Expert: **ID Number NEMA/EIA/ER/2930**

Active member of **Ecological Society of East Africa: Ordinary Member No: 267**

Member Nature Kenya and East Africa Natural History Society: **Full Member-3081**

15. REFEREES

1. Prof. Daniel Olago FRSC, D.Sc. (hc)
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Department of Geology
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3. Prof. Shem O. Wandiga FRSC, D.Sc. (hc)
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