

## CURRICULUM VITAE: Dr. JOHN P. O. OBIERO

### CURRENT CONTACT ADDRESS AND TELEPHONE NUMBERS

Dr. John Paul Odhiambo Obiero.  
University of Nairobi  
Department of Environmental and Biosystems Engineering.  
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### BIRTH AND MARITAL STATUS

Kenyan National, Born in Kenya on 31/12/64, married with two children.

### ACADEMIC TRAINING AND QUALIFICATIONS

PhD (Agricultural Engineering), University of Nairobi, Kenya (2013).

M.Sc. (Agricultural Engineering), Soil and Water Engineering, University of Nairobi, Kenya (1996.)

B.Sc. (Agric. Engineering), Egerton University, Kenya (1990)

### APPOINTMENTS AND EXPERIENCE

1. **Senior Lecturer**, Department of Environmental and Biosystems Engineering, School of Engineering, University of Nairobi, Nairobi, Kenya (October, 2019 to date).
2. **Lecturer**-Department of Environmental and Biosystems Engineering, School of Engineering, University of Nairobi, Nairobi, Kenya (July 2002 to October, 2019.).
3. **Tutorial Fellow** – Department of Agricultural Engineering, Faculty of Engineering, University of Nairobi, Kenya (June 1999-July 2002)
4. **Tutorial Fellow**-Appropriate Technology Centre, Kenyatta University, Nairobi Kenya (Aug 1997- June 1999).
5. **Part-time Lecturer**, Department of Agricultural Engineering, Jomo Kenya University of Agriculture and Technology, Nairobi, Kenya (November 2005, May 1999 – April 2001).
6. **Research Assistant and Part-Time Lecturer**, Department of Agricultural Engineering, Faculty of Engineering, University of Nairobi, Kenya (May 1994-Aug 1997).
7. **Part-time lecturer**, Institute For Meteorological Training and Research (IMTR) (February 1997)
8. **Part-time Lecturer**, Kenya Polytechnic, Nairobi, Nairobi, Kenya (January – March, 1996)
9. **Graduate Teacher**, Teachers Service Commission, Laikipia, Kenya, May 1991 – October 1991.
10. **Field Attachment**, Kenya Agricultural Research Institute, July-September, 1988

Dr. Obiero has over 20 years of experience in research, teaching, consultancy, community engagement and postgraduate supervision at university level. He has taught and examined many subjects at undergraduate and postgraduate levels in various universities. He has conducted

research in areas that include Soil Hydrology, Hydrology and Water Resources with special emphasis on watershed modelling.

Dr. Obiero has served in a number of administrative committees (departmental and faculty) at the various universities where he worked on full time basis. Notable Committee included (1) Proposed Upgrading of Appropriate Technology Centre (Kenyatta University) to an institute. Was responsible for developing the curriculum for proposed agricultural Technology Department. (2) Interdepartmental Committee Appointed by the university Vice Chancellor to develop a multidisciplinary research project proposal to secure funding through an international organization. Developed proposal on water harvesting for soya bean production in a semi-arid environment, (3) Chairman of College (CAE) show Committee to plan college exhibitions at the annual international show (University of Nairobi) – The College won two prizes in the year. Dr Obiero has also served in other committees which included Student prizes committee, Field Station Advisory Committee, Research and publications committee, Timetabling committee, Tree planting committee, Seminar Committee, School of Engineering Postgraduate Studies Committee (ongoing), Chair, Dept. Anti-Corruption Committee among others. Dr Obiero has also undertaken a number of special administrative responsibilities including being severally appointed to be acting Chairman of Department, Departmental Secretary, Departmental examinations co-ordinator, Design Projects co-ordinator, Field studies coordinator, among others.

### **Subjects taught and Examined at University Level Undergraduate**

- (i) Water supply (University of Nairobi-UoN)
- (ii) Soil and Water Conservation Engineering (UoN , KU and JKUAT)
- (iii) Soil Erosion Engineering (University of Nairobi)
- (iv) Renewable Energy Resources (University of Nairobi)
- (v) Agricultural Processing and Structures (University of Nairobi)
- (vi) Soil and Water Engineering (University of Nairobi)
- (vii) Irrigation and Drainage (University of Nairobi)
- (viii) Irrigation and Water Management (University of Nairobi)
- (ix) Systems Method (Kenyatta University, Kenya)
- (x) Energy for Agriculture (Kenyatta University)
- (xi) Fluid Mechanics (Kenyatta University, Kenya)
- (xii) Mechanical Engineering for Electrical Engineering (Heat Transfer)(UoN)
- (xiii) Hydrology (University of Nairobi, JKUAT )
- (xiv) Applied hydrology (Institute for meteorological training and Research, Nairobi, Kenya (IMTR).
- (xv) Land Reclamation (JKUAT)
- (xvi) Technology in Agriculture (KU)
- (xvii) Thermodynamics (UoN and KU)
- (xviii) Rural Water Resources Development (JKUAT)
- (xix) Advanced Mathematics (Kenya Polytechnic)

### **Postgraduate Courses**

- (i) Sediment transport (UoN)
- (ii) Soil Erosion Processes and Models (UoN)
- (iii) Watershed Engineering (UoN)
- (iv) School Seminars (UoN).
- (v) Supervision of M.Sc. and PhD student Research Projects (UoN, Nairobi, Kenya).

### Student Supervision and examination

Dr Obiero successfully supervised over 40 undergraduate (B.Sc) final year engineering student design projects at the University of Nairobi and Kenyatta University. Two of his students won *best student project award* in the department of Environmental and Biosystems Engineering. One other student won a prize after presenting his project at an international seminar in Sweden. Two of the students also obtained first class honours degree, being the highest level of qualification upon graduation in Kenyan universities and employed as academic staff in Kenyan universities, have completed their M.sc degrees and are registered for PhD under my supervision. Dr. Obiero has also supervised to completion nine (9) M.Sc. students and one (1) PhD student. Currently supervising over 5 M.Sc. and 4 registered PhD students at different stages of their research work ranging from proposal development to thesis submission. Dr Obiero has also participated as a board member in over 15 postgraduate (M.Sc) Defence examination boards in the school of Engineering and Faculty of Agriculture, University of Nairobi. He has also been appointed to serve as internal examiner for a number of Masters (M.Sc) theses and external examiner for PhD Thesis.

### Postgraduate Students Supervision

Name of Student	Topic of study	Year of graduation	Institution
Eng. Christopher N Muhwanga(M.Sc)	Application of Geographic Information Systems in Ground Water Prospecting: A Case study of Garrisa County, Kenya.	2018	University of Nairobi
Steve N. Matiti (M.Sc)	Evaluating Performance of Rain Water Harvesting Technologies in Mwingi Central Sub County, Kenya	2018	University of Nairobi
Simon O. Okoth (M.Sc) (Co-Supervisor)	Integrated Urban Pluvial Flooding analysis and Modelling For Nairobi West and South C in Nairobi City, Kenya.	2018.	University of Nairobi
Eng. Lusigi E. Mugeru (Co-Supervisor) (M.Sc)	Quality assessment of rain and storm water for Nairobi city industrial and sub-urban areas	2017	University of Nairobi
Luvai Kioko Alloise (M.Sc)	Effect of quantity and frequency of irrigation on growth characteristics and soil water balance of tomatoes in Green house : Case study of Kitui County	2014	University of Nairobi
Jacob Mutua Katuva (Co-supervisor) (M.Sc)	Water allocation assessment: A study of hydrological simulation on Mukurumudzi river Basin, Kenya	2014	University of Nairobi
Rutto Cheruiyot	Influence of Land Use Change	2013	University of Nairobi

Reuben (M.Sc)	on Sediment Yield: A case study of Kiboko, Kenya.		
Alexander Wainaina Kuria (M.Sc)	Hydrological modeling of rainfall-runoff for Nyando river basin, Kenya	2010	University of Nairobi
William OtienoOgola (M.Sc)	Ground water management for sugarcane establishment in Mumias sugar company, Kenya	2003	University of Nairobi

### Design and Research Project Reports and Thesis examination

- i. Grading of M.Sc thesis and reports (UoN)
- ii. Internal examination of M.Sc. Theses (UoN)
- iii. Member of Board of examiners for Masters (M.Sc) Theses defense.

### Research Experience

1. Prediction of soil properties in infiltration modelling.
2. Modelling soil hydraulic properties.
3. Hydrologic processes modelling using watershed simulation models.
4. Climate change impact on water resources for development adaptation measures.
5. Water harvesting and storage.

### Academic Research, Theses and Reports

1. **PhD Thesis:** Pedotransfer Functions for saturated hydraulic conductivity for surface runoff modelling (2013).
2. **M.Sc. Thesis:** Evaluation of Infiltration Using the Green-Ampt Model and Rainfall-Runoff data for Lagan and Sambret Catchments, Kericho, Kenya. (1996)
3. **Research Project Report:** Determination of Infiltration Parameters at the Steep land research Station, Upper Kabete, Nairobi, Kenya (1994).
4. **B.Sc. Third (Final) Year Project Report:** Irrigation suitability of Tatton Farm, Egerton University, Njoro, Kenya (1990).
5. **Proposed Curriculum:** For the department of Agricultural Technology in the proposed Institute of Appropriate Technology, Kenyatta University (1998).
6. **Collaborative Project Report:** Report on a 10 day consultative meeting in UK for planning the development of training materials involving University of Zimbabwe, University of Pakistan, ITAD water (UK), Cranfield University, and HR Wallingford as participating institutions. The project was based on a Memorandum of Understanding between University of Nairobi and HR Wallingford, UK (Sept., 2001).
7. **Inception report, Reports on Reconnaissance and Data collection (as Principal Investigator):** Deliverables to Water Research Commission (WRC), South Africa for funded research in which I was Principal Investigator.

8. Participated in preparation of the **Inception report** (by University of Nairobi- College of Architecture and Engineering (CAE) on the ongoing ‘Tracer studies on destination of engineering graduates from public and private universities in Kenya in which I am a consultant: Consultancy report submitted to the Ministry of Education- State Department of University Education& Research, Kenya (July 2019).

### **Professional Activities, Experience and Consultancy.**

Dr. Obiero has participated in a number of training assignments as resource person and fieldwork in consultancy. He is also a member of a number of professional bodies or other societies. He has consultancy and training experience in: Irrigation engineering, water supply, Water harvesting and catchment protection, Watershed modelling among others. Dr Obiero has consulted for CARE international, while hired as consultant by Promoting Health Consultants consultancy firm, to undertake an end term evaluation of a water supply project set up to rehabilitate a water supply scheme. Has also consulted for JICA (hired by Farmline consultants) in the training of irrigation engineers in installation of pipes and gates. Dr. Obiero has also been severally invited to provide expert opinion in several fora. For instance, he was invited as a stakeholder representing University of Nairobi to participate in the development of the Irrigation policy document. Also participated in the development of the implementation strategy for the proposed policy. He was also invited to participate in the development of strategic plan for the Centre for Sustainable Dryland Ecologies and Society who were engaged in collaborative research with US universities in which Dr Obiero is also involved. Dr. Obiero is currently a member of South African Institute of Agricultural Engineers (SAIAE). Dr Obiero was chair of the Kenya Ploughing Organization a subcommittee of Agricultural Society of Kenya (ASK) responsible for the training and organising annual ploughing contests and exhibitions in agricultural technologies. He was an executive committee member of ASK (Nairobi Branch) that plans and organises International Trade Fairs annually. Dr Obiero was appointed College Environmental Champion also being member of the University of Nairobi Environmental Sustainability Committee. Dr. Obiero is registered as graduate engineer. Dr. Obiero worked before as Assistant secretary and Secretary of Kenya Society of Agricultural Engineers (KSAE), organising annual conferences and developing the society journal among other society activities. Dr Obiero has been engaged as coordinator of collaborative research project in research uptake based on collaboration between University of Nairobi and HR Wallingford, United Kingdom (UK). The project reached its logical conclusion with training materials developed for teaching at the university.

### **RESPONSIBILITIES, MEMBERSHIP OF PROFESSIONAL SOCIETIES AND ORGANIZATIONS.**

- |               |                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------|
| (a) Member:   | :Hydrological Society of Kenya (HSK) (May 2013 to date).                                               |
| (b) Member:   | : Institution of Engineers of Kenya (IEK).                                                             |
| (d) Member    | :South African Institute of Agricultural Engineers (SAIAE) (October 2014 to date).                     |
| (e) Chairman: | : Kenya Ploughing Organization and Executive Committee member of the Agricultural Society of Kenya-ASK |

(Nairobi Branch) ( May 2011 to June 2014)

- (f) Member: Developing Research uptake in Sub Saharan Africa (DRUSSA) Network implementation team at University of Nairobi.
- (g) Acting Chairman: Dept. of Environmental and Biosystems Engineering, University of Nairobi (Severally on short term appointments since 1997 ranging few days to 1 month).
- (h) Member: Kenya Society of Agricultural Engineers (KASE)(#293)
- (i) Assistant Secretary: Kenya Society of Agricultural Engineers (1999)
- (j) Secretary: Kenya Society of Agricultural Engineers (2000-2001)
- (k) Member: Kenya Rainwater Association
- (l) Member: University of Nairobi, Faculty of Engineering, Alumni Society (UNEAS).
- (m) Member: University of Nairobi, Alumni
- (n) Co-ordinator: British Department for International Development (DFID) project on research uptake involving collaboration between UoN and HR Wallingford (UK) (2001 - 2003)

### **INVOLVEMENT IN RESEARCH, COLLABORATION AND DEVELOPMENT OF PROJECTS**

Was co-ordinator for the British Department for International Development (DFID) funded project “Improving Uptake of Past DFID funded research in the area of Water for Food”, A collaboration between University of Nairobi and HR Wallingford, UK (2001-2003).

- Outputs from the project included three documents for training in the areas of Rainwater harvesting, Irrigation and drainage, Erosion and sedimentation.

Awarded Deans Committee Research Grant to finance PhD research at the University of Nairobi.

Project leader in an internally funded project by the Research and Publication Committee (RPC), University of Venda, South Africa focusing on “*Hydrological modelling for sustainable management of land and water resources in the Luvuvhu river catchment, Limpopo, SA. Internal. Funding amounting to R150, 000.00*”

Principal Investigator in a research project funded by the Water Research Commission (WRC), South Africa focusing on “*Hydrological modelling of climate change impacts for development of adaptation strategies: The case of Luvuvhu River Catchment, Limpopo, South Africa*”. Attracted Funding amounting to R1.2 million.

### **SPECIAL ASSIGNMENTS**

1. External examiner (PhD Thesis), College of Agriculture, Engineering and Science, University of Kwazulu Natal, Durban, South Africa (Jan – March 2019).
2. Reviewer, Journal of Engineering in Agriculture and Technology (JEAE), published by the Kenya Society of Environmental, Biological and Agricultural Engineers (KeSEBAE).

3. Reviewer, Lakes and Reservoirs: Science, Policy and Management for Sustainable Use (Journal).
4. External Examiner (Irrigation Design and Management), College of Agriculture, Engineering and Science, University of Kwazulu Natal, May 2017 to date.
5. Appointed College Environmental Champion, College of Architecture and Engineering, University of Nairobi and member of the University of Nairobi Environmental Sustainability Committee, May 2014.
6. Nominated to represent the Faculty of Engineering, University of Nairobi, at the Training of Trainers(TOT) Workshop in course content development for Open and Distance (OD) learning which took place at the Machakos Garden Hotel, Kenya (3rd-7th June, 2003).
7. Nominated by the University of Nairobi (Department of Agric Engineering) to represent the Department at a meeting in the United Kingdom in connection with the collaborative project "Improving Uptake of past British Department for International Development (DFID) research project outputs held at Cranfield University, Silsoe, UK, 19-29 September 2001.
- 3 Was member of the committee appointed to upgrade Appropriate Technology Centre, Kenyatta University in which I was responsible for developing the curriculum for the proposed Agricultural Technology Department (1998).
- 4 Was member of the FAO/IFAD proposal committee, Kenyatta University, set up to develop a multidisciplinary research proposal for funding (1998).
- 5 Appointed member of the DRUSSA (Developing Research Uptake in Sub-Saharan African) network implementation team at university of Nairobi to help move forward research uptake management with the university on July 2012, a five year programme funded by DFID (2012-2017). Involves a number of partners that include Association of Commonwealth Universities.

## **PUBLICATIONS**

### ***Refereed journal papers***

**Obiero, J.P.O., Marenja, M.O., and Nkuna, T. R. 2019.** Hydrologic response modelling in Lutanandwa river catchment, Limpopo, South Africa, using Soil Water Assessment tool (SWAT) model. *Journal of Engineering in Agriculture and the Environment (JEAE)*, Volume 5. No1. 2019, Kenya Society of Environmental, Biological and Agricultural Engineers ISSN: 1562-6946, 1- 13.

**Elisha Akech Ochungo , Gilbert Ong'isa Ouma, John Paul Odhiambo Obiero, Nicodemus Abungu Odero. 2019.** Can One Drink Informal Water Alternatives Directly? Using Mobile Phone to Establish Trust in Quality. *Journal of Water Resource and Protection*, 2019, 11, 1260-1277 and Protection, 2019, 11, 1260-1277, <https://www.scirp.org/journal/jwarp>

**Ochungo, E.A., Ouma, G.O., Obiero, J.P.O. and Odero, N.A. 2019.** Improved Response to Water Shortage: A Discrete Choice Experiment Study in Langata Sub County, Nairobi City-Kenya. *Journal of Water Resource and Protection*, 11, 1161-1187.

**Ochungo, E.A., Ouma, G.O., Obiero, J.P.O. and Odero, N.A.2019.** The Implication of Unreliable Urban Water Supply Service: The Case of Vendor Water Cost in Langata Sub County, Nairobi City, Kenya. *Journal of Water Resource and Protection*, 11, 896-935.

**EA Ochungo, GO Ouma, JPO Obiero, NA Odero. 2019.** Water Quality Index for Assessment of Portability of Groundwater Resource in Langata Sub County, Nairobi-Kenya. *American Journal of Water Resources*, 2019, Vol. 7, No. 2, 62-75.

**Vitalis K. Too, Christian T. Omuto, Elijah K. Biamah, John P. O. Obiero. 2019.** Suitability of Soil Water Retention Characteristic Models (SWRC) in Regions and Soil Depth. *Journal of Water Resource and Protection*, 2019, 11, 740-747.

**E. A. Ochungo, G. O. Ouma, J. P. O. Obiero, N. A. Odero. 2019.**An Assessment of Groundwater Grab Syndrome in Langata Sub County, Nairobi City-Kenya. *Journal of Water Resource and Protection*, 2019, 11, 651-673.

**EA Ochungo, GO Ouma, JPO Obiero, NA 2019 Odero.** Drinking Water Quality Provenance Tracking for the Informal Water Market using Blockchain Technology, *Journal of Engineering Research and Application*, Vol. 9, Issue 2 (Series -III) Feb 2019, pp 64-70.

**E. A Ochungo, GO Ouma, JPO Obiero, NA Odero. 2018.**Water Supply Security in a Drought Exposed Nairobi: Adopting a Blockchain Provenance Tracking for Informal Alternatives, *International Journal of Innovative Research in Science, Engineering and Technology* (, Vol. 7, Issue 10, October 2018.

**C. N. Ochengo, S.C. Ondieki, and J P. Obiero. 2018.** Estimation of Safe Yield of a Multipurpose Reservoir Using Weap: A Case Study of Thwake Reservoir, Makueni and Kitui Counties, Kenya. *Journal of Water Resources and Ocean Science*. Vol. 7, No. 4.

**S. O. Okoth, C. T Omuto, JP Obiero. 2018.** Integrated Urban Pluvial Flooding Analysis and Modelling for Nairobi West and South C in Nairobi City. *International Journal of Science and Research (IJSR)*, Vol. 6, Issue 6.

**CN Muhwanga, JPO Obiero, FN Karanja. 2018.** Integration of Remote Sensing and Geographic Information System in Groundwater Prospecting: The Case of Garissa County, Kenya. *Journal of Geographic Information Systems (JGIS)*.

**EA Ochungo, GO Ouma, JPO Obiero, NA Odero. 2018.** Water supply security in a drought exposed Nairobi: Adopting a blockchain provenance tracking for informal alternatives. Paper presented at the *1st Annual Architecture & Engineering Conference*, University of Nairobi, Kenya, 22 – 24<sup>th</sup> October 2018.

**E. M Lusigi, D. O Mbuge, JP Obiero SC Ondieki and PK Ndiba. 2017.** Quality Assessment of Rain and Storm Water Runoff for Nairobi City Industrial and Sub-Urban Areas.



*International Journal of Innovative research in Engineering and Management, Vol. 4. Issue 1.*

**Rutto, R.C., Obiero J.P, Mutai E.B.K. 2014.** *Evaluation of Land use Change in Kiboko Watershed, Kenya. African Journal of Education Science and Technology*, Vol 2, No.1, ISSN : 2309-9240.

**V. K. Too, C. T. Omuto, E.K. Biamah and J.P. Obiero. 2014.** Review of Soil Water Retention Characteristic (SWRC) Models between Saturation and Oven Dryness, *Open Journal of Modern Hydrology*, 4, 173-182.

**Luvai, A. K., Gitau A. N., Njoroge, B. N. K. and Obiero, J. P. O. 2014.** Effect of Water Application Levels on Growth Characteristics and Soil and Water Balance of Tomatoes in Green house. *International Journal of Engineering Innovation & Research, Vol 3, ISSN :2277-5668.*

**John P. O. Obiero, Lawrence O. Gumbe, Christian T. Omuto, Mohammed A. Hassan, and Januarius O. Agullo. 2013.** Development of Pedotransfer functions for saturated hydraulic conductivity. *Open Journal of Modern Hydrology*, Vol 3, published online July, 2013.

**J. P. O. Obiero, M. A. Hassan and L. O. M. Gumbe. 2011.** Modeling of Stream Flow of a small Catchment in Kenya. *Journal of Water Resource and Protection*, Vol 3. No 9.

**P. M. A Odira, M. O. Nyadawa, Ndwalla, B. O., Juma, N. A., and J. P. O. Obiero. 2010.** Impact of Land-Use/Cover dynamics on streamflow: A Case of Nzoia River Catchment, Kenya. *Nile Water Science and Engineering Journal*, Vol 3 (issue2).

**J. P. O. Obiero and T. C. Sharma. 2002.** Evaluation of Infiltration using the Green-Ampt Model for Catchments in Kenya, East Africa, *Journal For Engineering in Agriculture and Environment (JEA)*. Published by the Kenya Society of Agricultural Engineers. ISSN:1562-6946.

#### ***Refereed Book Chapters***

**J. M Katuva, C. T Omuto & JPO Obiero. 2017.** Water Allocation Assessment and Hydrological Simulation on Mukurumudzi River Basin in Kenya: In Hydrology and Best Practices for Managing Water Resources in Arid and Semi-Arid Lands. Book Chapter (3), IGI Global, 701 E. Chocolate Avenue Hershey PA 17033-1240, USA.

**J. P. O. Obiero and J. O. Onyando. 2013.** Climate. In : Kenya : A Natural Outlook. *Developments in Earth Surface Processes*, vol 16. Elsevier, B.V., Amsterdam. Book Chapter, released December 2013.

#### ***Conference/Workshop proceedings***

**John P. O. Obiero and Mohammed A. Hassan. 2015.** *Determining the effect of landuse change on streamflow using soil water assessment tool (SWAT) Model.* Proceedings of the SWAT 2015 International Conference, Pula, Sardinia, Italy.

**John. P. O. Obiero. 2014.** Surface Runoff Simulation on a catchment in Kenya using SWAT model. Proceedings of the National Workshop of the Hydrological Society of Kenya held at the Kenya Water Institute (KEWI), Nairobi, Kenya from 29<sup>th</sup> to 30<sup>th</sup> April, 2014, ISBN: 978-9966078-12-4.

**J. P. O. Obiero**, Estimation of Infiltration Parameters at the Steepland Research Station, Kabete, Nairobi, Kenya. Proceedings of the Kenya Society of Agricultural Engineers Annual International Conference, Milimani Hotel, Nairobi, Kenya, 1997.

**J. P. O. Obiero**, How reliable are cylinder infiltrometers in determining the infiltration characteristic of a soil? Proceedings of the Kenya Society of Agricultural Engineers Annual International Conference, University of Nairobi, Kabete Campus, Kenya, 1994.

*Conference Poster presentations*

**Reuben C. Ruttoh, John P. O. Obiero and Christian T. Omuto. 2018.** Setting up SWAT model to predict impact of climate change on hydrological processes in Kibwezi watershed (poster). *1st Annual Architecture & Engineering Conference*, University of Nairobi, Kenya, 22 – 24<sup>th</sup> October 2018.

**J. P. O. Obiero, Hassan M. A, and Sang J. 2011.** Illustration of the process involved in data preparation for a watershed hydrological model (poster). Proceedings of the Fourth International Summer School and Conference in Applied Geoinformatics for Society and Environment (AGSE), Jomo Kenya University of Agriculture and Technology, Juja, Kenya, 15th – 19th August, 2011.

*Reviewed E- content (interactive lecture manual ) developed for open and distance learning.*

**J. P. O. Obiero. 2007.** Soil Erosion Engineering. Lecture notes developed for open and distance learning in an e-learning interactive CD based on the Webscript software.

**J. P. O. Obiero. 2006.** Rainwater Harvesting. Electronic based training manual developed for open and distance learning in Wedusoft e-learning environment (internet based) as well as on stand alone interactive CD developed using Dream Weaver Software.

*Conference Paper Presentations/participation.*

Presented a paper titled ‘**Hydrologic response modelling in Lutanandwa river catchment, Limpopo, South Africa, using Soil Water Assessment Tool (SWAT) model**’ at the Pan African Society of Agricultural Engineering (PASAE) conference held in Nairobi Kenya 25 to 28 March 2018.

Participated at the **LASER PULSE Research for Development (R4D)** Conference held at the Speke Resort and Conference Centre, Munyoyo, Uganda, 6 – 8 May 2019.

Presented a paper titled “**Relating sediment load and discharge at a selected section in the Lotanyanda river, Limpopo, South Africa**” at the 18<sup>th</sup> SANCIAHS Symposium titled “Characterising Hydrological Uncertainty in a changing World: Transferring Theory into Practice”, held at the University of Kwazulu Natal, Durban South Africa 14 – 16 September 2016.

Presented a paper titled “**Data acquisition for flow and sediment modeling: The case of Lotanyanda River, Limpopo Province**” at the SAIAE Symposium and Biennial CPD Event held at Berg & Dal Camp, Kruger National Park, Mpumalanga, South Africa, 1 – 4 August 2016.

Attended the **ESRI Africa User Conference**(Esri AUC) 2015 held at the International Convention Centre (ICC), Cape Town, South Africa, 11-13 November 2015 to share use of ESRI products e.g. Use of ArcGIS software in modelling.

Presented a paper titled “**Determining the effect of land use change on stream flow using Soil Water Assessment Tool (SWAT)**” at the 2015 SWAT International Conference held in Pula, Sardinia, Italy (24 -26 June 2015) .

Made an oral presentation based on the research paper “ **Simulation of Streamflow Components using Soil Water Assessment Tool (SWAT) Model**” at the 18<sup>th</sup> World Congress of the CIGR, September 16<sup>th</sup> – 19<sup>th</sup>, 2014 held at the China National Convention Centre, Beijing, China.

Oral presentation on the paper “**Pedotransfer functions in surface flow simulation**” at the 10<sup>th</sup> Biennial Pedometrics International Conference held at the World Agroforestry Centre (ICRAF campus), Nairobi, 26<sup>th</sup> – 31<sup>st</sup> August, 2013.

**Omuto, C. T., J .P .O. Obiero and S. C. Ondieki.** Modelling Hydraulic Conductivity. Paper presented at the Kenya Society of Agricultural Engineers International Conference, Grand Regency Hotel, Nairobi, 2001.

**Nyakundi, P. and J. P. O. Obiero,** A computer based tool for determination of optimal size rainwater storage tank. Paper presented at the Kenya Society of Agricultural Engineers Annual International Conference, Grand Regency Hotel, Nairobi, Kenya, 2000.

**Barake, E and J. P. O. Obiero,** Design of an optimal size Rainwater Storage Tank. Paper presented at the Kenya Society of Agricultural Engineers Annual International Conference, Intercontinental Hotel, Nairobi, Kenya, 1999.

Participated in the *COLLEGE ON SOIL PHYSICS* held at International Centre for Theoretical Physics (ICTP), Trieste Italy from 14 – 30 April, 1998. Presented a paper title ‘**Estimation of infiltration parameters at the steepland research station, Upper Kabete, Kenya.**

**J. P. O. Obiero,** Surface runoff prediction on Kenyan catchments using the Green-Ampt model and related soil parameters. Paper presented at the Kenya Society of Agricultural Engineers Annual International Conference at Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya. 1995.

#### **WORKSHOP/ SEMINAR PARTICIPATION**

Participated as a stakeholder consultative workshop on *irrigation development and implementation strategy*, 11-12<sup>th</sup> September 2012 at KCB, Karen, and Nairobi. Involved development of and implementation strategy for the proposed irrigation policy and irrigation bill.

Participated at the *Project Implementation Progress and Strategic Planning* Workshop held at Maanzoni Lodge, Athi River, Kenya, 7<sup>th</sup> -8<sup>th</sup> August, 2012. Workshop organised by Centre for Sustainable Dryland Ecologies and Society (CSDES), College of Agriculture and Veterinary Sciences, University of Nairobi, Kenya

Organised a one (1) day international workshop “**DFID Water For Food Research Funding and Outputs**” based on a project I co-ordinated funded by DFID on *Improving Uptake of Research* through development of training materials and research funding opportunities in DFID funded research (19<sup>th</sup> February 2003)

## **TRAINING COURSES.**

Underwent training in Pedagogy, Andragogy and Mentorship training held on 26-28<sup>th</sup> June 2019 at the Central Catering Unit, Main Campus, University of Nairobi.

Attended the training course on **ArcGIS: Introduction to GIS** held at ESRI South Africa on 01 June 2015 - 02 June 2015, Midrand, South Africa.

Attended the training course on Arc GIS II: **Essential Work Flows 10.3** held at ESRI South Africa 26<sup>th</sup> – 28<sup>th</sup> October 2016, Midrand, South Africa.

Participated as a *resource person* at a 6 week training for the International Postgraduate Course candidates in the *application of GIS and Remote Sensing in Integrated water Resources Management* in April 2012 at Egerton University and RCMD (Regional Centre for Mapping and Development), Kenya. Responsible for training in hydrological modelling.

Participated at the professional course on **Research and Grant Proposal Writing** held at Chiromo Conference Centre, University of Nairobi, Kenya, 5<sup>th</sup> - 9<sup>th</sup> December 2011.

Participated at the *Training of Trainers Executive Course on Technology Shaping and Policy Research* held at the African Centre for Technological studies (ACTS), 22<sup>nd</sup>-23<sup>rd</sup> November, 2011.

Participated and the Fourth International Summer School and Conference on **Applied Geoinformatics for Society and Environment** held at Jomo Kenyatta University of Agriculture and Technology, 15-19<sup>th</sup> August 2011.

Participated at the *Scientific communication and publishing* course held at the University of Nairobi, chiromo campus, 4<sup>th</sup> – 8<sup>th</sup> April, 2011.

Participated as a *resource person* at a 6 week training for the International Postgraduate Certificate Course candidates in the *application of GIS and Remote Sensing in Integrated water Resources Management* involved in the training the international students on Application of a Watershed model (SWAT ) in Watershed Management, March, 2010 at Egerton university.

Participated at the international workshop on *proposal writing and manuscript development* for publication held at the Hillpark hotel, Nairobi, Kenya on 29<sup>th</sup> April -4<sup>th</sup> May 2008.

Participated at the *harmornization workshopfor proposal development* by teams within East and Central Africa submitting proposal targeting funding by the Lake Victoria Research Initiative (VicRes), held at the Nile Resort, Jinja, Uganda on 16<sup>th</sup> – 23<sup>rd</sup> March 2008. Our team submitted a completed proposal.

Participated at the regional training workshop on *Proposal and Scientific Writing* held at Ridar Hotel, Mukono Uganda on 3-11<sup>th</sup> December 2007.

Invited by the Kenya Rainwater Association (KRA) to participate as a *Resource Person* in the one month training course on **Rainwater Harvesting and Catchment Protection** (August-September, 2007) for Senior Agricultural Officers from Malawi. Delivered lectures in Soil Erosion and Control.

Participated at a Policy Analysis Course on ***Innovation Systems: Research Into Use*** held at the African Centre for Technological Studies (ACTS) Institute of Science and Technology, Nairobi, Kenya on December 4-8, 2006.

Participated at a Policy Analysis Course on ***Introduction to Biotechnology and Biosafety*** held at the African Centre for Technological Studies (ACTS) Institute of Science and Technology, Nairobi, Kenya on October 23-27, 2006.

Participated at the International Workshop on ***Prioritization of Irrigation and Drainage Projects***, 6-9<sup>th</sup> December 2005, Sokoine University of Agriculture, Morogoro, Tanzania.

Participated and successfully completed an intensive training programme in ***Introduction to Geoinformation Systems (GIS)*** held at the Department of Surveying, University of Nairobi between 23<sup>rd</sup> August to 16<sup>th</sup> October 2004.

Participated in and completed a Training of Trainers Course for ***Content development and the use of Websoft*** Electronic Learning Environment for Open and Distance Learning in Machakos Garden Hotel, Machakos, Kenya from June 2<sup>nd</sup> 2003 to June 7<sup>th</sup> 2003.

### **COUNTRIES VISITED**

Italy, China, England, Tanzania, Uganda, South Africa.

### **CONSULTANCY ASSIGNMENTS**

Consultant (Agricultural and Biosystems Engineering Expert), Consultancy Service to Undertake a Tracer Study on Destination of Engineering and Applied Science Graduates from Public Universities in Kenya for the State department of Higher Education and Research, Ministry of Education, Kenya (ongoing - July 2019 to date). Funded by the African Development Bank (AfDB) to approx. Ksh 18, million.

Engaged as consultant by Monash South Africa to provide curriculum development expertise through development of modules on Climate Change and Water Supply and Management, 2016.

Participated as resource person in the 2 month intensive training of international postgraduate course in Application of GIS in Intergrated Water Resources Management, a joint collaboration involving ITC Netherlands (An Associate Institution of the United Nations University), Regional Centre of Mapping and Development (RCMD), Kenya and Egerton University, Njoro, as Trainer in Principles and Application of GIS and Remote sensing focusing on hydrological modelling (Jan-March in 2011, 2012 and 2013 at Egerton University and RCMD).

Participated as a Consultant (Modelling) for Basin Wide Systems Consultancy firm in the Training for Nile Basin Decision Support System Members in Watershed hydrological modelling, at the Institute of Meteorological Training and research, Nairobi, Kenya (December 2009 – January 2010).

Participated as a consultant for CARE-International Kenya (CIK) under Promotive Health Consultancy firm in the End Term Evaluation of the Chemase-Kibigori Water Sanitation and Health project funded by the European Union during June-July 2009.

Participated as a resource person in the 7<sup>th</sup> IDD training of Irrigation Engineers under Farmlines consultants held at Government Training Institute (GTI), Embu, Kenya (4<sup>th</sup> -18<sup>th</sup> May 2009).

Lead consultant for LOG-ASSOCIATES in Documentation on Peri-Urban Irrigation Research Project in Nairobi, based on a consultancy agreement between LOG-ASSOCIATES and SMALL HOLDER IRRIGATION DEVELOPMENT ORGANIZATION (SISDO) in 1999.

### **PROFESSIONAL REGISTRATION**

Registered as Graduate Engineer with Engineers Board of Kenya (EBK), Kenya.

### **REFEREES**

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