

Department of Geography &
Environmental Studies
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SHADRACK M. KITHIA- curriculum vitae (2013)

1.0 Profile Summary (COMPLETE VERSION):

I am a 49-year old Kenyan with a PhD in Hydrology with considerable experience in Water quality Assessment, control and management and environmental conservation and management. I am married with three children. My areas of professional interest include hydrological analysis of surface water quality assessment and management especially river flow and water characteristics. I have over 17 years experience on multivariate analysis of large datasets, water quality inventories, conservation and management of aquatic ecosystems as well as conflict resolution on the use of pasture and water resources in the arid and semi-arid areas in Kenya. I have a substantial experience in scientific research, proposal writing, fieldwork, project co-ordination, report writing and communication skills. I have been involved in the supervision of various postgraduate students in the department. I have been involved in several National and International project work. I have undertaken Environmental Impact Assessment and Audit of the National Water Pipeline and Conservation corporation installations in western Kenya, Environmental Impact of the development of the Sewerage system in Bomet Municipality and the development of the Trans boundary legal co-operative framework in the use of Mara River basin ecosystem. I have also been involved in the Development of Training modules for use by WRUAs in Mt. Kenya region and the formulation and formation of the WRUAs Forum. I am excellent in oral and written English and Kiswahili.

2.0 Qualifications:

1998-2006: Ph.D. in Hydrology-University of Nairobi, KENYA

- ❖ Doctoral research on “The effects of land use types on the Hydrology and Water quality of the upper-Athi River basin, Kenya”.

1990-1993: Masters of Science in Hydrology-University of Nairobi, KENYA

- ❖ Thesis research on “Effects of industries and other land-use systems on the water quality within the Nairobi River sub-catchments, Kenya”.

- 1986-1989: Bachelor of Science- University of Nairobi, KENYA**
❖ **Main subjects:** Geography, Botany & Zoology. Final year dissertation research on “The effects of child-sex preference on Fertility”. A case study of Rural Areas of Makindu location, Machakos District”; Kenya.
- 1983-1984: Kenya Advanced Certificate of Education-Siakago Boy’s High School, KENYA**
❖ **Main subjects:** Geography, Chemistry, Biology, Mathematics Alt S & General Paper. **Final Results:** 2 Principals & 3 Subsidiaries.
- 1979-1982: Kenya Certificate of Education-Mukaa Secondary School, KENYA**
❖ **Final Result:** Division 1 (one).
- 1972-1978: Certificate of Primary Education-Nguumo Primary School, KENYA**
❖ **Final Results:** English (B-), Mathematics (B), General Subjects (B-).

3.0 Memberships:

- ✚ Executive member of the Kenya National Committee for the International Hydrological Programme (IHP) -1996-current
- ✚ Kenya National Natural Sciences Committee -1997-current
- ✚ International Association of Hydrological Sciences (IAHS) 1993-current
- ✚ International Commission on Water Quality (ICWQ) -1993-current
- ✚ International Commission on Water Resources Systems (ICWRS)-1993-current
- ✚ Faculty Board of Education and External Studies, University of Nairobi-1994-current
- ✚ Faculty Board of Science, University of Nairobi-2006-current
- ✚ Faculty Board of Arts, University of Nairobi,-2006-current
- ✚ Several Secondary School Management Boards.

4.0 Professional Training:

- 2012:** Attended a 10 days Training workshop on urban climate change adaptation and resilient in July, 2012 in Dhaka, Bangladesh. Training facilitated by iied/ICCCAD and BACLS.
- 2010:** Attended a Training workshop on climate change in August 2010 in Nairobi, Kenya. Training facilitated by iied/ICCCAD.
- 2005:** Training in Pedagogy on 5th-7th September 2005, School of Monetary Studies, Nairobi, Kenya
- 2003:** ILEC/UNEP/JICA International Training Course, Environmental Course Focused On Fresh Water Environment ~For Tertiary Level Teaching Staff ~At Osaka International Centre (OSIC), International Lake Environment Committee Foundation (ILEC) and Centre for Environmental Education and Lake Science, Faculty of Education, Shiga University, Otsu; Japan.
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5.0 Employment Record:

Dec 2010-Present: Senior Lecturer, Department of Geography and Environmental Studies, C.H.S.S., at University of Nairobi, Kenya.

- Main responsibility is teaching, supervision and examination of Bachelors, Masters and Ph.D programmes in Hydrology, Geography and Environmental management.

Feb.1997-Dec 2010: Lecturer, Department of Geography and Environmental Studies C.E.E.S and now C.H.S.S., at University of Nairobi, Kenya.

- Main responsibility is teaching, supervision and examination of Bachelors, Masters and PhD programmes in Hydrology, Geography and Environmental management.

Oct.1994- Feb. 1997: Assistant Lecturer- C.E.E.S. University of Nairobi.

- Main responsibility is teaching, supervision and examination of Bed (arts), B.A, B.Sc., M.A and M.Sc. programmes in Hydrology, Geography and Environmental management.

1991-Oct.94: District Hydrologist (Nakuru District).

- In charge of surface water (Hydrology and Water bailiff sections) and water catchment conservation including river gauging, Water resources management and planning, and pollution control.

1990 -1991: District Hydrologist (Nyeri District).

- In charge of surface water and water catchment conservation including pollution control.

Feb.90-Oct.90: Hydrologist trainee -Ministry of Water Development (Maji House).

1985 -1986: Taught at Kalulini secondary school

- Before proceeding on to join the University of Nairobi later in the year.

6.0 Professional development:

- ❖ Pedagogy with a bias on university and tertiary level teaching and training,
- ❖ Water resources analysis and management,
- ❖ Natural resources management (NRM) and Evaluation,
- ❖ Environmental planning and management,
- ❖ Water quality assessment, control and management,
- ❖ Integrated water resources management (IWRM) especially rivers, lakes, reservoirs and watersheds,
- ❖ Analysis of water quality status in aquatic ecosystems,
- ❖ Computer applications.

7.0 Skills, Capacities and competencies:

- ❖ University and tertiary level teaching,

- ❖ Designing, planning and implementation of research projects including proposal writing,
- ❖ Scientific data analysis and interpretation,
- ❖ Report writing, document editing and information dissemination,
- ❖ Environmental impact assessment (EIA),
- ❖ Environmental auditing (EA),
- ❖ Leadership and facilitation of community based natural resources management (CBNRM) and participatory environmental management workshops,
- ❖ Leadership and facilitation of scientific meetings including seminars, workshops and conferences,
- ❖ Computing skills in a wide range of areas including word processing (MS-WORD), Spreadsheets (MS-EXCEL) and statistical data analysis in SPSS,
- ❖ Formulation of a wide range management plans including ordinary plans, strategic plans and community action plans especially in natural resources, water and environment.

8.0 Administrative Responsibilities:

May, 2012: Re-appointed as External Examiner in the School of Education and Social Sciences for a period of one (1) Academic year 2011/2012; Kabianga University College, Kericho.

May, 2011: Appointed as External Examiner in the School of Education and Social Sciences for a period of one (1) Academic year 2010/2011; Kabianga University College, Kericho.

Oct.-Nove., 2011: Acting Chairman for two weeks in the Department of Geography & Environmental Studies, University of Nairobi.

9.0 Selected consultancies & projects:

2010: Consultant in the Establishing of Mara River Basin Trans-boundary co-operative Framework for Lake Victoria Basin Commission under REDPLAN Consultants Ltd.

2010: Consultant in the Environmental Impact Assessment (EIA) of Projects under the Ministry of Northern Kenya and other arid lands within 32 districts in Kenya: A review of the performance of the Arids Lands Projects, Project done under REDPLAN Consultants Ltd.

2010: Consultant in the Development of Training Modules for WRUAs in the greater Mt. Kenya region and the establishing of the WRUAs Forum under the leadership of Cetrad and the Ministry of Water and Irrigation, Project done under REDPLAN Consultants Ltd.

2007: Consultant in the Environmental Impact Assessment for the expansion of Bomet town Water Supply and Waste water treatment works for Bomet town Municipality under Ecolife Consultium Ltd, Kenya.

2005: Consultant in the Environmental impact assessment (EIA) and Environmental auditing (EA) of the various Water Supply and Treatment installations in Western Kenya for the Kenya National Water Pipeline & Conservation Co-operation under Ecolife Consultium Ltd, Kenya.

10.0 Research/project supervision and co-ordination: (completed)

- 2012:** Mwaniki, Dennis Mwendwa. Mapping Pollution in the Mathare River: An Analysis of Waste Disposal Patterns and River Pollution in an Informal Settlement. M.A Epm, University of Nairobi.
- 2010:** Omedo, G. Vulnerability of Urban Informal Settlements to Environmental Hazards: A case study of Korogocho in Nairobi. M.A Epm, University of Nairobi.
- 2009:** Abdirahman, M. A. The effects of the Development of Boreholes on the production of vegetation in Wajir District, Kenya. M.A Epm, University of Nairobi.
- 2006:** Kenduiwo, A.K. Impacts of Socio-economic factors on adoption of Soil and Water Conservation (SWC) Practices in Kenya: A case study of Kyogong catchment in Bomet District, Rift Valley Province. M.A Epm, University of Nairobi.
- 2006:** Maina, M. D. Socio-economic opportunities for poverty alleviation through enhanced solid waste management: A case analysis of recycling plastic waste along the Nairobi River, Kenya. M.A Epm, University of Nairobi.

11.0 (On-going MA. Epm Projects)

- 2012: Bidii, H.K.** Flood disasters in the informal settlements: A case study of Raila Village, Kibera Slums, Nairobi, Kenya.
- 2011: Kinyua, A.M.** “Fluoride in Groundwater”: A case study of selected Boreholes in Nairobi Embakasi Constituency.
- 2006: Kinuthia, N.W.** Impact of steel rolling Mills in Kikuyu on the Environment.

11.1 (On-going Ph.D. Projects)

- 2012: Otenyo, G.M.** Managing Water Sector reforms among the urban poor: A case study of Mathare Slums in Nairobi.
- 2012: Wambugu, G.M.** Land use Implications on Water Quality and Environmental Health on the Upper Catchments of Ruiru and Ndarugu Rivers, Kiambu County.

12.0 Conferences/General Assemblies:

2007: Perugia, Italy

Trends in sediment fluxes and loads in the Athi drainage basin, Kenya. IUGG XXIV General Assembly Workshop HW 3007: The Impact of Environmental Change on Sediment Sources and Sediment Delivery- July 9, 2007- Pizza universita, Perugia-Italy.

2007: Perugia, Italy

The use of watershed macrophytes and storm-water in river water quality management in a tropical river basin with reference to the Nairobi river basin, Kenya. IUGG XXIV General Assembly Workshop HW 3008: Changes to Hydrological Extremes and Water Quality-July 12, 2007-Pizza universita, Perugia-Italy.

2007: Perugia, Italy

An assessment of water quality changes within the Athi and Nairobi river basins during the last decade. IUGG XXIV General Assembly Symposium HS 2005: Water Quality and Sediment Behaviour of the Future Predictions for the 21st Century- July 12, 2007-Pizza universita, Perugia-Italy.

2005: Paris, France

The effects of types of Land use on the hydrology and Water quality of upper Athi River Basin, Kenya; In: paper presented at the Fourth World Wide Workshop for Young Environmental Scientists (WWW-YES-2005), May 10-13, 2005- Domaine de Cherioux, Vitry sur Seine- France.

1997: Meran/merino, Italy

Effects of pesticide use on water quality within the upper- Athi river sub-basins, Kenya. Paper presented in the *International Interdisciplinary Conference on Headwater Control IV: Hydrology, Water Resources and Ecology in Headwaters: 20-23 April 1998, Meran/Merano, Italy.*

1997: Kathmandu, Nepal

Present and Future Prospects of Water Resources Development in Kenya. Paper presented in the International Conference on Large Scale Water Resources Development in Developing Countries: New Dimensions of Prospects and Problems, October 20-23, 1997, Kathmandu, Nepal.

1996: Kyoto, Japan

The role of water resources in sustainable Development of the Arid and Semi-arid lands of Kenya. *International Conference on Water Resources and Environment Research: Towards the 21st Century*; Proceedings: Vol. II; 643-650, October 29-31, 1996 Kyoto Japan.

13.0 Scholarships & Research Awards:

1998: Research grant, German Academic Exchange Service (DAAD).

1990: UNESCO Scholarship through ROSTA for the Postgraduate studies (M.Sc.) at the University of Nairobi.

1986: Graduate Scholarship (B.Sc.), Government of Kenya scholarship for tenable at University of Nairobi.

14.0 Publications: (Selected peer reviewed Papers)

1. Kithiia, S.M.& Krhoda, G. O. (2011) Sediment yields and transport within the Nairobi River basins, Kenya. *River, Coastal and Estuarine Morphodynamics: RCEM2011* © 2011 Tsinghua University Press, Beijing
2. Kithiia, S.M. (2010) Impacts of sediments yields and water quality on the Nairobi River basin ecosystem, Kenya. In: *Sediment Dynamics for a Changing Future* (ed, Banasik, K., Rorowitz, A. J., Owens., Stone, M & Walling D.E), (*Proceedings of the ICCE symposium held at Warsaw University of Life Sciences-SGGW, Poland, 14-18 June 2010*). IAHS Publ. 337, 2010, IAHS, Press, Wallingford, UK.

3. Kithiia, S.M. & Wambua, B. N. (2010) Temporal changes of sediments dynamics within the Nairobi River sub-basins between 1990-2006 time scale, Kenya. In: *Annals of Warsaw University of Life Science-SGGW, Land Reclamation* No 42 (1), 2010: 17-22, Warsaw University of Life Sciences Press, Poland.
4. Onditi, O. F. and Kithiia, S.M. (2009) Livelihood-Conservation Scorecard Balancing: Sustainable or Dispensable? Access to Natural Resources and Policy Implications in Bwidi Impenetrable National Park, South-Western Uganda. *International Journal of Social Science, Volume 1, Number 1, 2009*. Pan-African Book Company, Uyo, Akwa Ibom State, Nigeria.
5. Kithiia, S.M. (2009) Integrated Surface and Groundwater resources Management in Makueni District, Kenya. In: *Improving Integrated Surface and Groundwater Resources Management in a Vulnerable and Changing World* (Proc. of JS. 3 at the Joint IAHS & IAH Convention, Hyderabad, India, September 2009). IAHS Publ. 330, 2009, IAHS, Press, Wallingford, UK.
6. Kithiia, S.M. (2008) Sediment dynamics and improvised control technologies in the Athi River drainage basin, Kenya. In: *Sediment Dynamics in Changing Environments (Proceedings of a Symposium held in Christchurch, New Zealand, December 2008)*. IAHS Publ. 325, 2008, IAHS, Press, Wallingford, UK.
7. Kithiia, S.M. (2007) An assessment of water quality changes within the Athi and Nairobi river basins during the last decade. In: *Water Quality and Sediment Behaviour of the Future Predictions for the 21st Century* (ed. Bruce Webb), *Proceedings of Symposium HS 2005 at IUGG2007, Perugia, July 2007*. IAHS Publ. 314, 2007, IAHS, Press, Wallingford, UK.
8. Kithiia, S.M. and F.M., Mutua (2006) Impacts of land-use changes on sediment yields and Water quality within the Nairobi River sub-basins, Kenya; In: *Sediment Dynamics and the Hydromorphology of Fluvial Systems* (ed. J.S. Rowan., R.W. Duck & Werrity, A), (*Proceedings of a symposium held in Dundee, UK, July 2006*). IAHS Publ. 306, 2006, IAHS, Press, Wallingford, UK.
9. Musingi, J.K., S.M. Kithiia and B.N. Wambua (1999) The Urban growth of Mombasa coastal town and its implication for surface and groundwater resources. In: *Impacts of Urban Growth on Surface Water and Groundwater Quality* (ed., Bryan E.) *Proc. of IUGG 99 Symposium HS5, Birmingham, July 1999*, 419-422, IAHS Publ. no. 259, IAHS, Press, Wallingford, UK.
10. Kithiia, S.M. (1997) Land use changes and their effects on sediment transport and soil erosion within the Athi drainage basin, Kenya. In: *Human Impact on Erosion and Sedimentation* (ed., D.E. Walling & J.L. Probst), (*proceedings of Rabat Symposium S6, April 1997*). IAHS Publ. no. 245, 1997.
11. Kithiia, S.M. and Ongwenyi, G.S. (1997) Some problems of water quality degradation in Nairobi river drainage basin, Kenya. In: *Fresh Water*

- Contamination. (ed., Bruce Webb). Proceedings of an International Symposium (Symposium S4) held during the fifth Scientific Assembly of the International Association of Hydrological Sciences (IAHS), Rabat, Morocco, 23rd April-3rd May, 1997. IAHS Publ. no. 243, 1997.*
12. Kithiia, S.M. and Ongwenyi, G.S. (1996) The role of water resources in sustainable Development of the Arid and Semi-arid lands of Kenya. *International Conference on Water Resources and Environment Research: Towards the 21st Century*; Proceedings: Vol. II; 643-650, October 29-31, 1996 Kyoto Japan.
 13. Kithiia, S.M. and J.K. Musingi (1995) Effects of Land use on the water quality within the Nairobi river sub-catchment, Kenya. *Eastern and Southern Africa Geographical Journal*, Vol,6, No.1 December, 1995.
 14. Ongwenyi, G.S., F.O. Denga, S.M. Kithiia and P. Abwao (1993) Environmental and Hydrological Implications of the Development of Multipurpose Reservoirs in some catchments of Kenya: Meeting Kenya's water demands by the year 2010. In *Sediment problems: Strategies for monitoring, prediction and control (Proceedings of the 4th joint IAMAP-IAHS assembly in Yokohama, Japan, July 11-23, 1993)* IAHS Publication no. 217, pp 207-216.
 15. Ongwenyi, G.S., S.M. Kithiia and F.O. Denga (1993) An overview of soil erosion and sedimentation problems in Kenya. In *Sediment problems: Strategies for monitoring, prediction and control (Proceedings of the 4th joint IAMAP-IAHS assembly in Yokohama, Japan, July 11-23, 1993)* IAHS Publication no. 217, pp 217-224.
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15.0 Publications: (Chapters in Books)

1. Kithiia, S.M. (2012) Water Quality Degradation Trends in Kenya over the Last Decade In: *Water Quality Monitoring and Assessment*, ISBN 978-953-51-0486-5, edited by Kostas Voudouris and Dimitra Voutsas. Chapter 23, pg 509-526, Intech Publishers, Rijeka, Croatia.

16.0 Additional Skills:

- Good organizational and communication skills
- Fluent and good working knowledge in English and Kishahili
- Computing, Internet and database management skills
- Clean Driving License

Other interests:

- Nature appreciation and photography
 - Wildlife watching
 - Adventure travel
 - Socializing with others
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17.0 Referees:

- [1]. Professor George O. Krhoda, Department of Geography and Environmental Studies, University of Nairobi, P.O Box 30197-00100, Nairobi- KENYA; Phone: [+254-020] 318262, E-mail: gkrhoda@gmail.com.
- [2]. Dr. Francis Mwaura, Senior Lecturer, Department of Geography & Environmental Studies, University of Nairobi, P.O Box 30197-00100, Nairobi- KENYA; Phone: [+254-020] 318262, [E-mail: mwauraf@uonbi.ac.ke](mailto:mwauraf@uonbi.ac.ke)
- [3]. Dr. Rayya Timmamy, Senior Lecturer, Department of Linguistics and Associate Dean, Faculty of Arts (C.E.E.S), University of Nairobi, P.O Box 57518-00200, Nairobi- KENYA; Phone: [+254-020] 318262, [E-mail: rayyat@yahoo.com](mailto:rayyat@yahoo.com)