

## Seth M. Kisia-Curriculum Vitae



**Name:** Seth Marande Kisia

**Nationality:** Kenyan

**Present Address:** Department of Veterinary Anatomy and Physiology,  
University of Nairobi,  
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NAIROBI.

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**Key Qualifications:** B.V.M. (Nbi), Ph.D. (Bristol)

### EDUCATION

**1986 - 1989:** Studied for the degree of Ph.D in the Research Unit for Comparative Animal Respiration and the Department of Pathology at the University of Bristol, England. Title of thesis, ‘Morphometry of Gills and Red Muscle and Oxygen Consumption in different sizes of a tilapia, *Oreochromis niloticus* (Trewaavas). Awarded the degree of Ph.D on 16.10.89.

**1979 - 1984:** Studied Veterinary Medicine at the University of Nairobi and was awarded the degree B.V.M. in 1984

**1979** Training in Registration of Persons, Ministry of Home Affairs, Western College of Arts and Advanced Sciences, Kakamega

**1977-1978** Did A-levels at St. Paul’s Amukura High School, Busia. Attained the following grades:  
Chemistry- Principal pass-A  
Geography-Principal pass-A  
Biology-Principal pass-D  
General paper-Credit

**1973-1976** Attended Chavakali High School. Attained Division II (24 points)

**1969-1972** Attended Vihiga Primary School, Vihiga division

**1965-1968** Attended various primary schools in Vihiga, Bomet, Kericho, Naivasha and Nyeri

### **EMPLOYMENT**

**2003 - to date:** Associate Professor, Department of Veterinary Anatomy and Physiology

**1995 - 2003:** Senior Lecturer, Department of Veterinary Anatomy

**1989 - 1995:** Lecturer, Department of Veterinary Anatomy

**1984 - 1989:** Employed as an Assistant Lecturer in the Department of Veterinary Anatomy, University of Nairobi.

**1979** Team Leader, Registration Unit, Registration of Persons, Kakamega

### **ADMINISTRATIVE EXPERIENCE**

**April 2012 to date** Member of the Kenya Veterinary Board Inquiries, Investigations and Disciplinary Sub-committee

**2010-2011** Member of the Kenya Veterinary Board Technical Subcommittee on Education and Quality Assurance (TeCEQA)

**2010-2011** Member of the Kenya Veterinary Board Subcommittee on Continuous Professional Development (CPD)

**January 2010 to date** Associate Dean, Faculty of Veterinary Medicine

**January 2010 to January 2013** Chairman, Department of Veterinary Anatomy and Physiology

**July - September 2009** Ag. Associate Dean, Faculty of Veterinary Medicine and Ag. Chairman, Department of Veterinary Anatomy and Physiology, University of Nairobi.

**2007 to date** External examiner, Kenya Wildlife Services Training Institute, Naivasha (Diploma and Certificate in Fisheries)

<b>2005 to 2013</b>	External examiner, Department of Animal Health, Egerton University.
<b>2005-2010:</b>	Departmental Representative to the Faculty of Veterinary Medicine Postgraduate Studies Committee
<b>2000 - 2001</b>	Departmental representative and secretary to the Faculty Committee on establishment of a B.Sc. degree course in Wildlife and the following options; Fisheries, Conservation, Wetlands and Tourism Management.
<b>April - May 2000</b>	Ag. Chairman, Department of Veterinary Anatomy.
<b>1998 - 2000</b>	Member of the organizing and editorial committees, Faculty of Veterinary Medicine Biennial Scientific Conference.
<b>June 1998 - Sept.1998:</b>	Ag. Chairman, Faculty of Veterinary Medicine Postgraduate Studies Committee
<b>1992 – 2001:</b>	Departmental Representative to the Faculty of Veterinary Medicine Postgraduate Studies Committee
<b>March 1997 - June 1997:</b>	Acting Chairman, Department of Veterinary Anatomy
<b>September 1995 - August 1996:</b>	Acting Chairman, Department of Veterinary Anatomy

### **OTHER TEACHING EXPERIENCES**

<b>June 2000</b>	Part time Lecturer, Department of Environmental Health, Moi University.
<b>December 2012</b>	Sheikh Technical Veterinary School (STVS), Sheikh, Somaliland
<b>December 2012</b>	Ministry of Livestock, Puntland, Somalia

### **MEMBERSHIP TO PROFESSIONAL BODIES**

- Society for Experimental Biologists, Great Britain (1986-1990)
- Kenya Veterinary Association
- Kenya Veterinary Board

### **CONFERENCES/WORKSHOPS/SYMPOSIA (PRESENTATIONS AND PROCEEDINGS)**

<b>YEAR</b>	
<b>1.</b>	<b>2013</b> Papah, M.B., Kisia, S.M., Ojoo, R.O. and Onyango,

- D.W. Lake Magadi Ecosystems: Current Research, Trends and Future Perspectives. 1<sup>st</sup> International One Health Conference. Addis Ababa, Ethiopia.
2.     **2012**                     Papah M.B., Kisia, S.M., Ojoo, R.O. and Onyango, D.W. Spermatogenesis and sperm ultrastructure in Lake Magadi tilapia *Alcolapia graham* (teeostei, Perciformes, Cichlidae). 8<sup>th</sup> Biennial Conference, Faculty of Veterinary medicine, University of Nairobi and 46<sup>th</sup> KVA Annual Scientific Conference, Nairobi.
  3.     **2012**                     Papah M.B., Kisia, S.M., Ojoo, R.O. and Onyango, D.W. The Structure of the male reproductive organs in Lake Magadi tilapia (*Alcolapia grahami*), a fish living on the edge. TWAS-Biovision Alexandria NXT Conference, Alexandria, Egypt.
  4.     **2010**                     Kisia, S.M. and Oyugi, D.O. Common water hyacinth, *Eichhornia crassipes*: An invasive plant species that has wrecked havoc in Lake Victoria. 7<sup>th</sup> Biennial Conference, Faculty of veterinary medicine, University of Nairobi.
  5.     **2009**                     Oyugi, D.O., Ntiba, M.J., Kisia, S.M. and Britton, R.J. Are shifts in the reproductive traits of *Tilapia zilli* between 1974 and 2009 in Lake Naivasha, Kenya, indicators of a stressed population? At World's Lake's Conference in Wuham, China.
  6.     **2008**                     Kisia, S.M. Environmental implications of introducing the Nile perch (*Lates niloticus* Linnaeus 1758) to Lake Victoria. 6<sup>th</sup> Biennial Scientific conference and Exhibition, Faculty of Veterinary Medicine, University of Nairobi, Kenya.
  7.     **2008**                     Kisia, S.M. Mineral Pollution of the Environment and its effects on Animal Health. 5<sup>th</sup> International Congress of African Association of Physiological Sciences, Nairobi, Kenya.
  8.     **2005**                     Ogony, D.A.; Kisia, S.M.; Liti, D. and Kabaru, J.M. Effects of change from live to dry feed on the survival and growth of larval and post-larval stages of Labeo Cylindricus Peters (Pisces: Cyprinidae), at Sagana Fish Farm, Kenya. 1<sup>st</sup> National Biological Postgraduate Students Conference (Eds. Aloo-Obudho, P., Gicheru, M.M., Okemo, P.O., Mwangi, B.M., Mbugua, P.K. and Simbauni, J.A.). Kenyatta University, Nairobi, Kenya.

9. 2002 Jumba, I.O.; Kock, R.A.; Kisia, S.S.; Ogana, W.; Kisia, S.M.; Oduor, F.D.O. and Wainaina, G. Prospects of heavy metal poisoning in wild Herbivores in Lake Nakuru National Park, Kenya. International Society for Trace Elements in Humans, Quebec City, Canada.
10. 2002 Maina, J.C.; Beames, R.M.; Higgs, D.; Mbugua, P.N.; Kisia, S.M. and Iwama, G. The Nutritional quality and feeding value of Kenya's Omena Fishmeal fed to Tilapia *Oreochromis niloticus*. Biennial Scientific Conference of the Faculty of Veterinary Medicine, Nairobi, Kenya.
11. 2000: Kisia, S.M. Effects of El Nino on human health in Kenya in 1997/98. Kenya National Academy of Sciences workshop on Reducing the Impacts of Environmental emergencies through Early Warning and Preparedness - The case of El Nino Southern Oscillation. Nairobi, Kenya.
12. 2002: Kisia, S.M. Extreme climate variability/change and livestock management in the Greater Horn of Africa. The ninth Greater Horn of Africa pre-outlook forum users capacity building workshop, Eldoret, Kenya.
13. 2001: Kisia, S. M. Vulnerability and adaptation to climate change in health. Technical workshop on Kenya's Initial National Communication to the conference of parties - United Nations Framework Convention on climate change, Kilifi, Kenya.
14. 2000: Kisia, S. M. Biometeorological Concepts in relation to Health and Public Safety. 5th Kenya Meteorological Society Workshop on Meteorological Research, Applications and Services., Mombasa, Kenya.
15. 1998: Kisia, S. M. Sex Reversal and how it improves productivity in tilapia reared in ponds. At the Regional Workshop on Biotechnology, Nairobi, Kenya.
16. 1998: Kisia, S. M. Meteorology and Health. At the Fourth Kenya Meteorological Society Workshop on Meteorological Research, Applications and Services. Mombasa, Kenya.
17. 1998: I. O. Jumba, R. A. Kock, S. S. Kisia, W. Ogana, S. M. Kisia, F. D. O. Oduor and G. Wainaina.. Prospects of heavy metal poisoning in wild herbivores in Lake Nakuru National Park, Kenya. At the START Workshop, UNEP Headquarters, Kenya.

18. 1998: R. G. Macharia, C. N. Warui and S. M. Kisia. The effects of Decamethonium bromide induced paralysis in the skeletal development in the chick embryo. At the Faculty of Veterinary Medicine, Kabete, Kenya.
19. 1998: Kisia, S. M. and Jumba, I. O. Skull abnormalities in the waterbuck *Kobus ellipsiprymnus defassa* (Ruppel 1835) in the Rift Valley Lake Systems of Kenya. At the Faculty of Veterinary Medicine, Kabete, Kenya.
20. 1995 Kisia, S.M. Recent Sdvances in Fish Physiology. First Pan African Fisheries Congress and Exhibition. United Nations Environment Programme (UNEP), Nairobi.
21. 1994: Kock, R. A., Jumba, I. O., Wambua, J., Mwanzia, J., Siagi, A., Kisia, S. M. Status of some trace elements in waterbuck (*Kobus ellipsiprymnus defassa*) in relation to soil and forage composition and implications for animal health in Lake Nakuru National Park. Abstract in 'Use of Research Findings in the Conservation and Management of Biodiversity'. Research and Planning Workshop, Kenya Wildlife Services, Nakuru, Kenya.
22. 1992: Kisia, S. M. Microcirculation and theoretical considerations on diffusion of oxygen in mammalian skeletal muscle, Anatomy subject meeting at Arusha (Tanzania).
23. 1989: Kisia, S. M. The dimensions of muscle fibres and capillaries in red muscle of *Oreochromis niloticus* L. At the Society for Experimental Biology meeting, University of Edinburgh (Scotland).
24. 1988: Kisia, S. M. The Society for Experimental Biology meeting at the University of Lancaster (England). presented a poster on Morphometric gill oxygen diffusing capacity of a tilapia *Oreochromis niloticus* L of different sizes.
25. 1987: The Society for Experimental Biology meeting at the University of York (England)

#### **CERTIFICATES OF WORKSHPO ATTENDANCES/PARTICIPATION**

- Ecohealth/One Health Approaches to Prevention and control of Zoonotic Disease, University of Minnesota, USA-June 2013
- Public Health Institute-School of Public Health, College of Veterinary Medicine and School of Nursing, University of Minnesota, May 28-June 14, 2013

- Advancing student learning through case teaching, University of Minnesota, June 2013
- Transformational Leadership, Nairobi, January 13-15, 2011
- One Health Leadership Training, Nairobi, December 14-15, 2010
- Alternatives to use of Animals in Experiments in Education and Training, Nairobi, September 23-24, 2009
- Performance Enhancement Strategies course, Nairobi, January 31, 2009

### SUPERVISION OF POST-GRADUATE STUDENTS

Have served as supervisor to the following:

<b>Michael B. Papah</b>	-	M.Sc. in veterinary Anatomy
<b>Silvester Siva</b>	-	M.Sc. in Chemistry
<b>Collins Kamunde</b>	-	M.Sc. in Veterinary Anatomy
<b>Abdelrahman Kulmiye</b>	-	M.Sc. in Zoology
<b>Raymond G. Macharia</b>	-	Ph.D. in Veterinary Anatomy
<b>Joyce Maina</b>	-	Ph.D. in Animal Production
<b>Dalmas O. Oyugi</b>	-	Ph.D. School of Biological Sciences
<b>Currently supervising</b>	-	2 Ph.D students in the School of Biological Sciences and Department of veterinary Anatomy and Physiology
	-	an M.Sc. student in the Department of Physics

NAME OF STUDENT	DEGREE UNDER STUDY	TITLE OF STUDY
• <b>Mosiany L. Kisipan</b>	Ph. D	Heat shock Proteins in Thermal, Saline and Toxicity Stress Tolerance in Fish.
• <b>Dorothy A. Ogoni</b>	Ph.D	Investigations into the Biology of <i>Labeo cylindricus</i> Peters (Pisces: Cyprinidae) and Potential for Commercial Culture.
• <b>Michael B. Papah</b>	M.Sc	Morphological evaluation of the Testicular Structure and Endocrinological Correlates of Lake Magadi Tilapia ( <i>Alcolapia grahami</i> ).

I have served as a peer reviewer for articles in the following publications:

- The Kenyan Veterinarian-1998
- Environmental Pollution (U.S.A.)-1996

- Archives of Environmental Contamination and Pollution (U.S.A.)-1998
- Hydrobiologia (The Netherlands)-2005.
- Environmental science and Pollution-2013
- American journal of Experimental Agriculture-2013
- The Government Review-IPCC WG2-third Assessment Report
- Advances in Global Research Book Series as proceedings of the Ideal 2<sup>nd</sup> International Symposium held in Malawi-2000
- Journal of African Meteorological Society-1996
- Reviewer of proposals for (Kenya Agricultural Research Institute (KARI): 1995-2001

### **PEER REVIEWED PUBLICATIONS**

1. Papah, B.M., **Kisia, S.M.**, Ojoo, R.O., Makanya, A.N., Wood, C.M., Kavembe, G.D., Maina, J.N., Johannsson, O.E. Bergmann, H.L., Laurent, P., Chevalier, C. Bianchini, A., Bianchini, L.F. and Onyango, D.W. (2013). Morphological evaluation of spermatogenesis in Lake Magadi tilapia (*Alcolapia grahami*): a fish living on the edge. **Tissue Cell.**, 45(6):371-382.
2. Oyugi, D.O., Harper, D.M., Ntiba, J.M., **Kisia, S.M.** and Britton, J.R. (2011) Management Implications of the Response of Two Tilapiine Cichlids to Long-Term Changes to Lake Level, Biodiversity and Exploitation in an equatorial Lake. **AMBIO**, 40:469-478.
3. Oyugi, D.O., Cucherousset, J., Ntiba, J.M., **Kisia, S.M.**, Harper, D.M. and Britton, J.R. (2011). Life history traits of an equatorial common carp *Cyprinus carpio* population in relation to thermal influences on invasive populations. **Fisheries Res.**, 110:92-97.
4. Onyango, D.W. and **Kisia, S.M.** (2008). *Alcolapia grahami*: A Fish Inhabiting a Highly Alkaline Environment of Lake Magadi, Kenya. Fish Life in Special Environments (Eds. Sebert, P., Onyango, D.W. and Kapoor, B.G.). **Science Publishers, Enfield (NH), Jersey, Plymouth, 41-51.**
5. **Kisia, S.M.** and Onyango, D.W. (2008). Haemoglobinless Antarctic Icefish: Adaptations to Living at Sub-zero Temperatures. Fish Life in Special Environments (Eds. Sebert, P., Onyango, D.W. and Kapoor, B.G.). **Science Publishers, Enfield (NH), Jersey, Plymouth, 131-140.**
6. Maina, J.G.; Beames, R.M.; Higgs, D.; Mbugua, P.W.; Iwama, G. and **Kisia, S.M.** (2007). Evaluation of Limiting Amino Acids in Tilapia Diets based on Sunflower Cake. **Bull. Anim. Hlth. Prod. Afr.** **55, 187-194.**
7. Maina, J.G.; Beames, R.M.; Higgs, D.; Mbugua, P.W.; Iwama, G. and **Kisia, S.M.** (2007). The feeding value and protein quality in high-fibre and fibre reduced sunflower cakes and Kenya's 'omena' fishmeal for tilapia (*Oreochromis niloticus*). **Livestock Research for Rural Development.** **19(11), Article 164, 10 pages**
8. Jumba, I.O., **Kisia, S.M.** and Kock, R. (2007). Animal Health Problems Attributed to Environmental Contamination in Lake Nakuru National Park, Kenya: A Case Study on



Heavy Metal Poisoning in the Waterbuck *Kobus ellipsiprymnus defassa* (Ruppel 1835). **Arch. Environ. Contam. Toxicol.** **52**, 270-281.

9. **Kisia, S.M.** and Onyango, D.W. (2007). Adaptation of Gas Exchange Systems in Fish Living in Different Environments. (Eds. Fernandes, M. N., Rantin, F.T., Glass, M.L. and Kapoor, B.G.). **Science Publishers, Enfield (NH), Jersey, Plymouth, 1-12.**
10. Onyango, D. W. and **Kisia, S. M.** (2007). Osmoregulatory and Respiratory Adaptations of Lake Magadi Fish (*Alcolapia grahami*). (Eds. Fernandes, M. N., Rantin, F.T., Glass, M.L. and Kapoor, B.G.). **Science Publishers, Enfield (NH), Jersey, Plymouth, 119-226.**
11. Maina, J.G., Beames, R.M., Higgs, D., Mbugua, P.N., **Kisia, S.M.** and Iwama, G. (2005). A Comparison of the Nutritional Quality of Kenya's Omena Fishmeal and Anchovy Fishmeal Fed to Nile Tilapia (*Oreochromis niloticus* Linn). **The Kenyan Veterinarian, Vol. 29, 1-6.**
12. Irungu, L.W., Kimani, R.N. and Kisia, S.M. (2004). Helminth parasites in the intestinal tract of indigenous poultry in parts of Kenya. **Journal of South African Veterinary Association. 75(1):58-59.**
13. Maina, J.G.; Beames, R.M.; Higgs, D.; Mbugua, P.W.; Iwama, G. and **Kisia, S.M.** (2003). Partial replacement of fishmeal with sunflower cake and corn oil in diets for tilapia *Oreochromis niloticus* (L.): effect on whole body fatty acids. **Aquaculture Research, 34, 601-608.**
14. Maina, J.G.; Beames, R.M.; Higgs, D.; Mbugua, P.N.; Iwama, G. and **Kisia, S.M.** (2002). Digestibility and feeding value of some feed ingredients fed to tilapia *Oreochromis niloticus* L. **Aquaculture research. 33, 853-862.**
15. **Kisia, S. M.**, Jumba, I. O. and Kock, R. (2002) The waterbuck (*Kobus ellipsiprymnus defassa* (Rupell 1835) as an indicator of ecosystem health. **African Journal of Ecology. 40, 390-392.**
16. Kulmiye, A. J., Ntiba, M. J. and **Kisia, S. M.** (2002). Some aspects of the reproductive biology of the thumprint emperor, *Lethrinus harak* (Forskall, 1775) in the Kenyan coastal waters. **Western Indian Ocean Journal of Marine Science. Vol. 1, No. 2, 135-144.**
17. Macharia, R.G., Warui, C.N. and **Kisia, S.M.** (2002). The effects of decamethonium bromide induced paralysis on skeletal development in the chick embryo. **The Kenyan Veterinarian, Vol. 23, 61-63.**
18. **Kisia, S.M.** and Jumba, I.O. (2002). Skull abnormalities in the waterbuck *Kobus ellipsiprymnus defassa* (Ruppel, 1935) in the Rift Valley Lake Systems of Kenya. **The Kenyan Veterinarian, Vol. 23, 85-86.**
19. Jumba, I. O.; Kock, R.A.; Kisia, S.S.; Ogana, W.; **Kisia, S.M.**; Oduor, F.D.O. Oduor and Wainaina, G. (2001). Prospects of heavy metal poisoning in wild Herbivores in Lake Nakuru National Park, Kenya. **The Journal of Trace Elements in Experimental Medicine. Vol. 14, No.3, 338-339.**
20. Karanja, F.K., Ogallo, L.J., Mutua, F.M., Oludhe, C. and **Kisia, S.M.** (2001). Kenya

country case study: Impacts and responses to the 1997-98 El Nino event. In *Once Burned, Twice shy? ~Lessons Learned from the 1997-98 El Nino* (Ed. Glantz, M.H.). **The United Nations University, Tokyo, 150-8925, Japan. 123-130.**

21. Kulmiye, A. J., **Kisia, S. M.** and Ntiba, M. J. (2001). Comparative fecundity estimates in the thumprint emperor, *Lethrinus harak* (Forskall, 1775) using volumetric and stereological methods. **African Journal of Hydrobiology and Fisheries. Vol. 10, Nos. 1 and 2, 38-52.**
22. Ogony, D. and **Kisia, S. M.** (2000). Sex Reversal and how it affects productivity in fish reared in ponds. *African Journal of Science and Technology (AJST), Science and Engineering Series Vol. 1, No.3, 44 - 50.*
23. **Kisia, S. M.** (1998). Oxygen diffusion in gills and muscle of fish in relation to changes in some environmental and physiological conditions. *Water/Air Transitions in Biology* (eds. A. K. Mittal, F. B. Eddy and J. S. Datta Munshi). **Oxford and IBH Publishing Co. PVT. Ltd. New Delhi. 249 - 257.**
24. Kamunde, C. N. and **Kisia, S. M.** (1997). Morphometry of the kidneys of fresh water percoid and ostariophysian teleosts. **Acta Biologica Hungarica 47 (1), 29-41.**
25. Maina, J. N., **Kisia, S. M.**, Wood, C. M., Narahara, A., Bergman, H. L., Lairent, P. and Walsh, P. J. (1996) A comparative allometric study of the morphometrics of the gills of a hyperosmotic adapted cichlid fish, *Oreochromis alcalicus grahami* of Lake Magadi, Kenya. **Inter. J. of Salt Lake Research 5:131-156.**
26. **Kisia, S. M.** (1996). Structure of Fish Locomotry Muscle. *Horizon of New Research* (eds. J. S. Datta Munshi and Hiran M. Dutta). **Science Publisher, Inc. 10 Water Street, 310, Lebanon, NH03766, USA , 167-178.**
27. Kamunde, C. M. and **Kisia, S. M.** (1994). Fine structure of the Nephron in the Euryhaline Teleost, *Oreochromis niloticus*. **Acta Biologica Hungarica, Vol. 445 (1), 11 - 121.**
28. **Kisia, S. M.** and Hughes, G. M. (1994). Routine oxygen consumption in different sizes of a tilapia, *Oreochromis niloticus* using the closed chamber respirometry method. **Acta Biologica Hungarica Volume 44 (4), 367 - 374.**
29. **Kisia, S. M.** and Hughes, G. M., (1994). Morphometry of some structural parameters affecting O<sub>2</sub> diffusion in body trunk red muscle of different sizes of a tilapia, *Oreochromis niloticus*. **J. Fish. Biol. 442, 233-239.**
30. **Kisia, S. M.** (1993). Volume densities and absolute volumes of mitochondria in body trunk red muscle of a tilapia, *Oreochromis niloticus* (Trewavas). **Acta Biologica Hungarica 44(2-3), 243-248.**
31. **Kisia, S. M.** and Hughes, G. M. (1992). Estimation of oxygen diffusing capacity in the gills of different sizes of a tilapia, *Oreochromis niloticus*. **J. Zool., Lond. 227, 405-415.**
32. **Kisia, S. M.** and Hughes, G. M. (1992). Red Muscle fibre and capillary dimensions in different sizes of a tilapia, *Oreochromis niloticus* (Trewavas). **J. Fish Biol. 40, 97-106.**

33. **Kisia, S. M.** and Hughes, G. M. (1988). Morphometric gill O<sub>2</sub> diffusing capacity of *Oreochromis niloticus* L. of different sizes. **Abstracts 6th Congr. Europ. Ichthyol. Budapest; 125.**

### **BOOKS**

1. **Kisia, S.M.** (2010). Vertebrates: Structures and Functions. Editors: Dutta, H.M. and Kline, D. **Science Publishers, Inc. Enfield (New Hampshire), USA; Plymouth UK.** 545 pages.
2. **Kisia, S.M.** and Onyango, D.W. (2005). Muscular System of Vertebrates. Editors: Dutta, H.M. and Kline, D.W. **Science Publishers, Inc. Enfield (New Hampshire), USA, Plymouth, UK.** 115 pages.

### **BOOK UNDER PREPARATION**

1. **Kisia, S.M.** Environment and Vertebrates

### **PAST CONSULTANCIES**

1. Report No. 1 on climate change.  
Implications of Sea Level Rise in some Areas of the Kenya Coast Part of UNEP/IGBP Kenyan Task Team in 1991.
2. Report No. 2 on Climate change in 1992-93.  
Implications of the Expected Climate changes on some selected Low-lying Coastal Parts of Kenya. A case study on Tourism and Hotel Industry. Part of a Land Ocean Interaction at the Coastal Zone (LOICZ) Kenyan Task Team.
3. Trace elements in the waterbuck (*Kobus ellipsiprymnus defassa*) in Lake Nakuru National Park in 1996-97. Funded by the Kenya Wildlife Services and People's Trust, U.K.
4. Subscriber to United Nations Development Programme on National (Kenya) Climate change, Vulnerability and Adaptation study, Health Section in 1997-98. Funded by UNDP.
5. The effects of El Nino on human health in Kenya in 1997/98. United Nations/National Centre for Atmospheric Research, USA study.

Signed.....

Date.....

