C U R R I C U L U M V I T A E

**Dorothy Wanja NYINGI, PhD**

*Freshwater Biologist and Head Ichthyology, National Museums of Kenya*

*Coordinator, Kenya Wetlands Biodiversity Research Group (KENWEB)*

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**Biography**

Wanja Dorothy Nyingi or Wanja, as she is commonly known, is a freshwater biologist and Ichthyologist based in Kenya. She studied at the University of Nairobi where she attained an undergraduate degree in Zoology and Master of Science in Hydrobiology (1998 and 2002). Thereafter she studied at the University of Montpellier 2 and attained a second Masters and a PhD in Ecology and Evolutionary Biology (2004 and 2007). She has worked at the National Museums of Kenya since 1998 carrying out extensive research on freshwater fish biodiversity in Kenya, and is currently the head of Ichthyology. Wanja has since 2010, coordinated the Kenya Wetlands Biodiversity Research Team (KENWEB) a multi-disciplinary team composed of scientists working on East African wetlands and aquatic ecosystems.

In 2013, Wanja authored the first guide to Common Freshwater Fishes of Kenya. This book is the first of its kind and will enhance the knowledge of the variety of fishes of Kenya but is also a useful guide for researchers and students of Ichthyology. She was awarded in February 2016 the Order of Academic Palms (Chevalier of the Ordre des Palmes Académiques), an order of knighthood of France for distinguished academics and figures in the world of culture and education.

Wikipedia link: <https://en.wikipedia.org/wiki/Dorothy_Wanja_Nyingi>

**Personal information**

Born in 1973, Kenyan citizen, lives in Nanyuki, Laikipia County, Kenya; Fluent in English, French, Swahili and Kikuyu languages

# Formal Education

# Doctor of Science: University of Montpellier II, FRANCE, 2007; most honourable mention

# *Thesis:* Morphological and Genetic differentiation of the Nile Tilapia; *Oreochromis niloticus* in Africa.

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# Master of Science: Ecology and Evolutionary Biology - Université de Montpellier II, FRANCE (2004) *Thesis*: A study of the genetic structure of the Nile tilapia, *Oreochromis niloticus*, by microsatellites and mitochondrial DNA (RFLP)

# Master of Science: Zoology (Hydrobiology) - University of Nairobi, KENYA (2002) *Thesis*: A morphometric, meristic and molecular biology approach towards a systematic study of the Sabaki Tilapia, *Oreochromis spilurus* (Günther, 1894) species complex.

# Bachelor of Science: Zoology - University of Nairobi, KENYA (1998), Honours:

# Upper Second Class *Dissertation:* Occurrence of the Nematode worm, *Contracaecum spiculigerum* in some freshwater fish in Kenya.

**Appointments, Awards and Projects**

**National Geographic Explorer** on project entitled “the Rise and Fall of Trout in Mount Kenya Region” since September 2017

**Order of Academic Palms (Chevalier of the Ordre des Palmes Académiques)** an Award granted by French Ministry of Higher Education and Research in February 2016

**Senior Research Scientist and Head of Ichthyology section** (Zoology Department); National Museums of Kenya - October 1998 – Present

**Coordinator** Kenya Wetlands Biodiversity Research Group (KENWEB) a consortium for wetlands scientists working towards Integrating scientific and traditional knowledge for co-management of socio-ecological landscapes for the well-being of communities in the flood-dependent lower floodplain agroforestry, pastoral and fishery systems of the eastwards flowing rivers of Eastern Africa. Funding for the Kenya Wetlands Biodiversity Research Team. Website <http://kenweb.museums.or.ke/>

**Coordinating Lead Author IPBES** regional assessment report on Biodiversity and Ecosystem Services for Africa 2016-2018

**Trustee and Water and Aquatic Biodiversity Associate** Conservation Solutions Africa Trust, based in Laikipia Kenya

**Advisory Editor** Journal of Environmental Biology of Fishes, Springer Science+Business Media

**Associate Editor** Special Edition on African Deltas - Africa Journal of Aquatic Sciences; South Africa – completed December 2015

**Writer, Editor and Video Producer** Earth Negotiations Bulletin (ENB) of the International Institute of Sustainable Development (IISD), Since November 2009

**USAID PREPARED consultancy** Assessment of Climate Change Vulnerability, Impacts and Adaptation On: Water Resources and Aquatic Ecosystem in the Lake Victoria Basin – completed in June 2015

**Mohamed Bin Zayed Foundation Book Publication** “Guide to Common Freshwater Fishes of Kenya (2012-2013)

**USAID Partnerships for Enhanced Engagement in Research (PEER) grant “**Capacity Building in Fish Biodiversity Discovery in Kenya” (2013/2014)

**Coordinator Science Clubs of Kenya** funded through the French Embassy in Kenya, Institut Francais and supported by the Ministry of Higher Education, Science and Technology and the Association of France Alumni in Kenya (AFRAKEN) <http://www.ambafrance-ke.org/Ceremonie-de-cloture-du-projet>

**Lead scientist** Laikipia Wetlands Monitoring Program by KENWEB. Funded by Laikipia Wildlife Forum **2012/2013**

**Principle investigator**, **USAID Pilot** **International Science Program** “Building Capacity for expanding understanding of Freshwater fish Biodiversity in Kenya,” 2010 –2011.

**Collaborating scientist**, **Water and Territories (GEOPAR) project**: water management scenarios and resource allocation of coastal wetlands (Tana River Delta and Rufiji Delta, Kenya and Tanzania respectively); implemented by National Museums of Kenya and French Institute of Research for Development (IRD) and Tanzanian partners – funded by the French Ministry of Ecology, Energy, Sustainable Development and Sea (MEEDDM) – 2009-2011

**Lead Kenya scientist**, **Socio-economic Impacts of Agrofuels in the Tana Delta** (PACTER project) funded by the French Ministry of ecology and sustainable development; Participating institutions French institute of research for development (IRD), Kenya Wildlife Services, University of Dar es Salam (Tanzania) and NMK; period 2010-2013;

**Implementing scientist, the Lake Victoria Biodiversity Informatics Project (LAVIBI)** funded by JRS Biodiversity Foundation, for four East African institutions, National Museums of Kenya, Kenya Marine and Fisheries Research Institute; National Fisheries and Resources Research Institute (Uganda) and the Tanzania Fisheries Research Institute) – 2009 to 2011

**Lead Kenya collaborator** **IRES-NSF Kenya Fish discovery project** “fostering international research and education programmes” implemented by Tulane University, US, University of Nairobi and the National Museums of Kenya, Since July 2010. Focus (Freshwater biodiversity and ecology – Lake Victoria system, Tana, Athi, Pangani and Ewaso Nyiro river systems.

**University Teaching, Student Academic Supervision and Mentoring**

1. Jomo Kenya University of Agriculture and Technology (2016 to Present): College of Pure and Applied Sciences – Bachelor of Fisheries Biology

* Fish Taxonomy and Systematics
* Fish Anatomy and Physiology
* Fish Parasites and Diseases

1. Karatina University (2013/2014): School Of Natural Resources And Environmental Studies – Master of Science:

* Ecology of Freshwater and Inland;
* Research Methods and Fieldwork.

1. Moi University / Chepkoilel University (2009 to 2012): Aquatic Biology and Fisheries Department (Undergraduate)

* Fish Population Genetics;
* Fish Taxonomy and systematics.

1. Kenya Wildlife Services Training Institute (2009-2011): Diploma and certificate courses:

* Freshwater Fish diversity inventory methods and identifications: Certificate of Wetlands inventory course International Course on African Wetland Management (ICAWM)
* Fish diseases in Aquaculture; (Diploma class)
* Introduction to Fisheries and Aquaculture; and Population Genetics (Diploma Class)

1. University of Nairobi (June – August 2008): School of Biological Sciences (Master of Science, Aquaculture)

* Aquaculture
* Population Genetics

**Student Academic Supervision and Mentorship**

**Post-doctorate:** Ray Schmidt, Smithsonian Institute, Mpala Research Centre and National Museums of Kenya “fish and macroinvertebrates of the Ewaso Ng’iro River system (2016-2017)

**Doctorate student**: Titus Ndiwa – Universite de Montpellier II, France - Adaptation du tilapia du Nil *Oreochormis niloticus* aux conditions extrême de pH et de temperature – (2011-2014)

**Master’s students**:

* Kashim Oginga (2018 ongoing) University of Nairobi Msc. Environmental Biology. Thesis: Status and Conservation of Wild Tilapia species in Kenya
* David Ouma (2017 ongoing) University of Nairobi Msc. Conservation Biology. Thesis: The relationship between floods and fisheries in the Tana River Delta, Kenya
* Joseph Gathua (2012-2016) Masters Education for Sustainable Development; London South Banks University. Thesis: The Role Of Water Resource Users Associations (WRUA) in Combating Water Related Conflicts: A Case Study of Burguret WRUA in Laikipia County
* Gilbert Koskei (2013-2015), University of Nairobi Msc. Conservation Biology.

Thesis: The effects of Landuse change on Water management in Rivers Nanyuki and Burguret, Mt Kenya and Laikipia Ecosystem)

* Yeremiah Chuhila (2013-2014), University of Nairobi, Msc. Molecular Genetics. Thesis: Assessment of the Genetic Compositon of the Nile Tilapia *Oreochromis niloticus* (Linnaeus, 1758), in Lake Baringo, Kenya
* Titus Ndiwa - MSc. Kenyatta University (2010-2011). Thesis: Fisheries and aquaculture development in dams of Naru Moru region, Laikipia district Kenya; defended in November 2011
* Fatuma Mzingirwa, Moi University (2012-2013)

Thesis: Genetic population structure of Crimson Jobfish, *Pristipomoides filamentosus* (Valenciennes, 1830) in the Southwest Indian Ocean.

**Linkages and Affiliations**

* Writer/Editor and Video Producer for the **International Institute for Sustainable Development.**  Processes following:
  + UN Fish Stocks Agreement
  + CMS MoU-Sharks
  + CITES
  + CBD
  + IPBES
  + UN Forest Forum
  + Montreal Protocol
* Member of steering committee of **International Partnership of the Satoyama Initiative (IPSI)** collaboration in conservation of sustainable human-influenced natural environments (Socio-Ecological Production Landscapes and Seascapes; SEPLS) through broader global recognition of their value.
* Committee member **GEF Small Grants Program UNDP Kenya**
* **Intergovernmental platform for biodiversity and ecosystem services (IPBES)** – member of the expert and stakeholders group since 2011
* **French Institute of Research for Development (IRD)** since 2002 – development of wetlands studies in East Africa
* **International Institute for Environment and Development (IIED)** – collaboration on conservation and land grabbing issues.
* **Tulane University (New Orleans)** since 2008 – US National Science Foundation supported projects in fish biodiversity studies in Kenya
* **UNECO-IHE** (water institute) partnership for capacity building in Aquatic Biology
* **ICRAF** –partnership on **EUROPEAID-IGAD** (Inter Governmental Authority on Development) project on Biodiversity Management Program for the Horn of Africa – to be funded by European Development Fund (EUROPAID/ACT/133-876)
* Technical and Steering Committee of the **Heritage Resource and Governance (HEREGO) programme** under the French Institute of Research for Development (IRD) France
* Member of **French Institute of Research for Development (IRD) committee on Parity**, IRD Headquarters, Marseille, France
* Member **East African Wildlife Society** (EAWS)
* Member **Sharks Specialist Group (SSG) of IUCN**.
* **Association of France Alumni in Kenya (AFRAKEN),** hosted by the French Embassy of Kenya (Vice Chair: 2011/2012; Chair: 2013/2014; Ordinary Committee member 2014/2015)

**Audio/Video Media**

1. Book Review – Freshwater fishes of Kenya by Wanja Dorothy Nyingi, 9th December 2013

<https://www.youtube.com/watch?v=Mj4rRJ7sg5I>

1. International Conference on the Contemporary Evolution of African Floodplains and Deltas, 27-30 May 2015

<https://www.youtube.com/watch?v=t-Op3qH7J58>

<https://www.youtube.com/watch?v=YLPRdkD4apM&feature=youtu.be>

1. The Tana Dialogues - Water, Land, People : a vision for peace, 8th November 2012

<http://youtu.be/MRxZkO5_bmo>

1. Participatory Research in the Tana Delta (Kenya), 4th October 2011 <http://www.youtube.com/watch?v=cGdBSP31tlI>
2. Interview of Satoyama Steering Committee members at the first Global Conference for the International Partnership for the Satoyama Initiative, March 10-11 2011

<http://satoyama-initiative.org/en/resources/video/>

**Articles, publications and reports (most recent)**

**Books and Book Chapters:**

* Nyingi, D.W., Agnèse, JF, Turner G. Ford A, Ndiwa T., Getahun A. Tweddele D, Day J. and Laleya P. in preparation. Identifying and Conserving Cichlid Species in the 21st Century *in* The Behavior, Ecology and Evolution of Cichlid Fishes: A Contemporary Modern Synthesis, Springer Academic
* Nyingi, D.W. 2013. Guide to the common freshwater fishes of Kenya. Moran Publishers, Nairobi, Kenya
* Nyingi D.W. and Agneses J.F. 2012. Phylogeography of the Nile Tilapia in Africa. Lambert Academic Publishers.
* Nyingi D.W, N. Gichuki and M. O. Ogada, Freshwater Ecology of Kenyan Highlands and Lowlands. In Paolo Paron, Daniel Olago and Christian Thine Omuto, editors: Developments in Earth Surface Processes, Vol. 16, Amsterdam: The Netherlands, 2013, pp. 199-218
* Ogada, M.O and Nyingi D.W. The Management of Wildlife and Fisheries Resources in Kenya: Origins, Present Challenges and Future Perspectives. In Paolo Paron, Daniel Olago and Christian Thine Omuto, editors: Developments in Earth Surface Processes, Vol. 16, Amsterdam: The Netherlands, 2013, pp. 219-235

**Articles and Reports:**

* Dieleman, J., Muschick, M., Nyingi, D. W. & Verschuren, D. 2018. Species integrity and origin of *Oreochromis hunteri* (Pisces: Cichlidae), endemic to crater lake Chala (Kenya-Tanzania). *Hydrobiologia.* [doi.org/10-1007/s10750-018-3570-7](https://doi.org/10-1007/s10750-018-3570-7)
* Kishe-Machumu, M.A, Natugonza, V., Nyingi, D.W., Snoeks, J., Carr, J, Seehausen, O., and Sayer, C.A. 2018. The status and distribution of freshwater fishes in the Lake Victoria Basin in Sayer, C.A., Máiz-Tomé, L. and Darwall, W.R.T. (2018). Freshwater biodiversity in the Lake Victoria Basin: Guidance for species conservation, site protection, climate resilience and sustainable livelihoods. Cambridge, UK and Gland, Switzerland: IUCN. xiv +226pp
* Okwiri B., Cao L. Nyingi D.W. and Zhang E. 2018. Molecular phylogenetic analysis of the catfish species Auchenoglanis occidentalis (Valenciennes, 1840) (Pisces: Claroteidae) from Lake Turkana in East Africa: taxonomic implications. Zootaxa 4450 (1): 115–124
* Ndiwa TC, Nyingi D, Wemali E, Yusuf HA. "*Seafood value chains and mangrove restoration in Mida Creek*.". In: *In Leew J, Koech G, Yaye A, Nyongesa J. 2017. A review of best practice in the Horn of Africa with biodiversity based value chain development for pro-poor biodiversity conservation*. Nairobi: ICRAF; 2017.
* Schmidt, Ray & Bart, Henry & **Dorothy Nyingi, Wanja**. (2017). Multi-locus phylogeny reveals instances of mitochondrial introgression and unrecognized diversity in Kenyan barbs (Cyprininae: Smiliogastrini). Molecular Phylogenetics and Evolution. 111. 35-43. 10.1016/j.ympev.2017.03.015.
* Ndiwa TC, Nyingi D, Claude J, Agnese JF. "Morphological variations of wild populations of Nile tilapia (Oreochromis niloticus) living in extreme environmental conditions in the Kenyan Rift-Valley." *Environmental Biology of Fishes*. 2016;99(5):473-485.
* Ray C. Schmidt, Henry L. Bart Jr & **Wanja Dorothy Nyingi.** 2015. Two new species of African suckermouth catfishes, genus Chiloglanis (Siluriformes: Mochokidae), from Kenya with remarks on other taxa from the area. Zootaxa 4044 (1): 045–064
* Olivier Hamerlynck, **Wanja Dorothy Nyingi**, Jean-Luc Paul and Stéphanie Duvail. Submitted. The fish-based farming system: maintaining ecosystem health and flexible livelihood portfolios. African Farming Systems, CGIAR, World Bank
* McCauley, D. J., T. E. Dawson, M. E. Power, J. C. Finlay, M. Ogada, D. B. Gower, K. Caylor, W. **D. Nyingi**, J. M.Githaiga, J. Nyunja, F. H. Joyce, R. L. Lewison, and J. S. Brashares. 2015. Carbon stable isotopes suggest that hippopotamus-vectored nutrients subsidize aquatic consumers in an East African river. Ecosphere 6(3):XX. http://dx.doi.org/10.1890/ES14-00514.1
* R. Schmidt, H. Bart, D. **Nyingi** and N. Gichuki. 2014. Phylogeny of suckermouth catfishes (Mochokidae:Chiloglanis) from Kenya: The utility of Growth Hormone introns in species level phylogenis Molecular Phylogenetics and Evolution 79 (2014) 415–421
* Ndiwa TC, **Nyingi D.W**, Agnese J-F (2014) An Important Natural Genetic Resource of Oreochromis niloticus (Linnaeus, 1758) Threatened by Aquaculture Activities in Loboi Drainage, Kenya. PLoS ONE 9(9): e106972. doi:10.1371/journal.pone.0106972
* Duvail S., Médard C., Hamerlynck O., Nyingi D. W. Land and water grabbing in an east african coastal wetland : the case of the Tana delta . *Water Alternatives*, 2012, 5 (2), p. 322-343.
* Ndiwa TC, Mwangi BM, Kairu E, Kaluli JW, Nyingi D. "Physicochemical Characteristics of Undrainable water dams utilised for fish rearing in the Semi-arid Naromoru area, Central Kenya." *Journal of Agriculture, Science and Technology*. 2012;14(2(2012)):45-55.
* Hamerlynck, O., Duvail, S., Vandepitte, L., Kindinda, K., **Nyingi, D.W**., Paul, J.-L., Yanda, P.Z., Mwakalinga, A.B., Mgaya, Y.D. & J. Snoeks 2011. To connect or not to connect – floods, fisheries and livelihoods in the Lower Rufiji floodplain lakes, Tanzania. Hydrological Sciences Journal 56 (8): 1436-1451.
* **Nyingi DW**, Agne`se J-F (2011) Tilapia in eastern Africa – a friend and foe. Species in the Spotlight. Darwall, W.R.T., Smith, K.G., Allen, D.J., Holland, R.A, Harrison, I.J., and Brooks, E.G.E. editors. The Diversity of Life in African Freshwaters: Under Water, Under Threat. An analysis of the status and distribution of freshwater species throughout mainland Africa. Cambridge, United Kingdom and Gland, Switzerland: IUCN. Pp. 76–78.
* Hamerlynck O., Nyunja J., Luke Q., **Nyingi D.,** Lebrun D., Duvail S., 2010. The communal forest wetland, rangeland and agricultural landscape mosaics of the Lower Tana, Kenya: a socio-ecological entity in peril. In “Sustainable use of Biological Diversity in Socio-Ecological Production Landscapes, Background to the Satoyama Initiative for the benefit of biodiversity and human well-being”. Convention on Biological Diversity Technical Series n° 52, 184 p. pp. 54-62.
* Duvail S., Valimba P., Nyunja J., **Nyingi D.,** Hamerlynck O., Léauthaud C., Albergel J., 2010. “Floods and Ecosystem Services in Coastal Wetlands”. Proceedings of the national workshop on research in the water sector, held at Utalii college, Nairobi, on 5th may, 2010. pp 14-28.
* Nyingi D., Aman R., De Vos L., & Agnèse J.-F. 2009. Genetic evidence of an unknown and endangered native natural population of *Oreochromis niloticus* (Linnaeus 1758) in Loboi swamp (Kenya). Aquaculture, 2009, 297 (1-4), p. 57-63.
* Nyingi D., Agnèse J.F. 2007. Recent Introgressive hybridization revealed by exclusive mtDNA transfer from *O. leucostictus* (Trewavas, 1933) to *O. niloticus* (Linnaeus, 1758) in Lake Baringo (Kenya). Journal of Fish Biology (2007)
* Agnèse J.F., Gourène B. & Nyingi D. 2007. Functional microsatellite and possible selective sweep in natural populations of the black-chinned tilapia *Sarotherodon melanotheron* (Teleostei, Cichlidae). Marine Genomics. Volume 1, Issues 3-4, September-December 2008, Pages 103-107
* De Vos L, Nyingi D.W., Nguku J. and Gathua J. Wetlands and Fisheries Inventory of the Tana River Primate Reserve, 2000.GEF project report on Biodiversity inventory of the Tana River Primate Reserve.

**Referees**

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