

Curriculum Vitae



Dr. Alick B. Muvundika

Profile

- Local and international research scientist in the fields of climate change, environment, water resources management, energy, and general natural resources sector.
- Experienced administrator and very conversant with corporate governance issues
- Deep knowledge and understanding of climate change issues in the African continent.
- Conversant with various national legislation and local policies/regulations, many of which I have participated in their formulation (e.g., National Policy on Environment).
- Committed and well-networked climate mitigation, adaptation, vulnerability and disaster risk reduction technical specialist with postgraduate qualifications (PhD) and international scientific credentials (IPCC Reviewer Editor for the Fifth Assessment Reports(AR5))
- Accustomed to integrating climate change and disaster risk reduction into development policies and frameworks at a national and sub-national level (both through direct technical assistance and toolkits for international organizations).
- Experienced lecturer at both undergraduate and postgraduate level in climate change and development, and general environmental fields.
- Active contributor to the preparation of the country's (Zambia) climate change policy documents required under the UNFCCC i.e., National Communication Reports, Biannual Update Reports, and Nationally Determined Contributions (NDCs).

Education

2012-2015: **PhD Environmental Sciences**

- Centre for Environment and Waste Management, University of Central Lancashire, UK

2000-2002: **MSc, Environmental Science and Technology**

- UNESCO Water Institute for Hydraulic and Environmental Engineering (IHE), Delft, the Netherlands

1990-1994: **BSc in Natural Sciences (Chemistry)**

- University of Zambia (UNZA)

Professional Training (Selected and Relevant)

- 2020: "Water and Climate Change in Africa" organized by UNESCO's Institute for Hydraulic and Environmental Engineering (IHE)
- 2018: Training Workshop on the Building of Sustainable National Greenhouse Gas Inventory Management Systems, and the Use of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories for the African Region, Organized by the UNFCCC Secretariat in collaboration with the IPCC, the FAO, and the Global Research Alliance on Agricultural Greenhouse Gases, held in Lusaka, Zambia.
- 2005: Coping with Changing Climate Conditions in Water and Environment, Regional Meteorological Training Centre (RMTC), Nairobi-Kenya, November 2005
- 2003: Training in World Bank Environmental Safeguard Policies, Kitwe-Zambia (2003)

- 2003: Environmental Auditing of Contaminated and Hazardous Waste Management Course by Gowen Environmental Limited, Ottawa Canada
- 2003: Beyond the Basics: Short course on Implementation Issues for Human Health and Ecological Risk Assessment at Mining sites conducted by Cantox Environmental Inc., Sudbury, Canada.
- 2000: Training in Environmental Management Systems and Environmental Auditing according to ISO 14000 conducted by Environmental Management Consultants International of Australia held in Kitwe, Zambia.

Work Experience-Long Term Positions

- March 2021-Todate: **Acting Deputy Director** - National Institute for Scientific and Industrial Research (NISIR), Lusaka, Zambia
- 2016-March 2021: **Principal Scientific Officer** - National Institute for Scientific and Industrial Research (NISIR), Lusaka, Zambia
- 2012-2015: Study leave (Pursuing PhD studies in the UK).
- 2006- 2012: **Senior Scientific Officer and Head of the Water, Energy and Environment Programme (WEEP)** at the National Institute for Scientific and Industrial Research (NISIR), Lusaka, Zambia.
- 2004-2006: **Scientific Officer** at the National Institute for Scientific and Industrial Research (NISIR), Lusaka, Zambia.
- 2002-2004: **Senior Inspector of Environment** – Mines Safety Department, Ministry of Mines and Minerals Development, Kitwe, Zambia.
- 1995-2004: **Inspector of Environment** – Mines Safety Department (MSD), Ministry of Mines and Minerals Development, Kitwe, Zambia.

Relevant Research Projects

Ongoing research projects include:

- Assessment of greenhouse gases (GHGs) emissions from landfills in Zambia's major cities (funded by the National Science and Technology Council (NSTC)).
- Assessing sources and flowpaths of groundwater contamination in the city of Lusaka (Commenced in 2022 funded by the International Atomic Energy Agency).

Completed research projects (selected):

- "The promotion of biogas technology as a source of renewable energy to replace use of firewood in central, Lusaka and southern provinces." The project involved construction of floating dome biogas digesters in selected areas in the three provinces where cow dung was available and used as feedstock. Users were also trained to make use of effluent for their gardens.
- "Water Quality Testing Services in Kwamwena and Ndeke –Vorna Valley, LusakaZambia." The project which was worth US\$15, 000 was funded by Millennium Challenge Account (MCA).
- "Routine Water Quality Monitoring/Assessment for an Impact Evaluation of Lusaka Water Supply, Sanitation, and Drainage Project." The project which is worth US\$300, 000 was funded by the United States Centres for Disease Control (CDC).

Involvement in Climate change and Environmental Issues at National and International Level

- 2020 to date:** **Ad-hoc Technical Working Group Member** – Formulation of Zambia’s Climate Change Bill
- 2019 to 2022:** **Representing the African region as a Member of the Facilitative Working Group (FWG)** for the Local Communities and Indigenous Peoples’ Platform (LCIPP) – a UNFCCC constituted body whose functions include, among others, the promotion of exchange of experiences and best practices with a view to applying, strengthening, protecting and preserving traditional knowledge, knowledge of indigenous peoples and local knowledge systems, as well as technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change.
- Marc-May 2017** Engaged as Local Consultant by the Climate Development Knowledge Network (CDKN) through their African regional Partner Africa Development & Investment Public Benefit Corporation (ADI-PBC) to provide Technical Assistance to the Zambia Government through Ministry of Lands and Natural Resources to Support Nationally Determined Contribution (NDC) Planning Implementation
- 2012 to date:** **Member of the Technical Working Group (TWG)** for the National Climate Change Policy (NCCP) for Zambia and Vice Chairperson for the Mitigation Sub-Group
- 2010-2012:** **Chairperson** - Zambia’s Technical Working Group for the Designated National Authority (DNA) on Clean Development Mechanisms (CDM) under the Kyoto Protocol.
- 2009 to date:** **Zambian Delegation Lead** – on Science and Technological negotiations including Article 6 under the United Nations Framework Convention on Climate Change (UNFCCC).
- 2005 -2006:** **Steering Committee Member** for the environmental indicators development for the Environmental Outlook Report and State of the Environment Reporting for Zambia.
- 2003-2005:** **Policy Working Group (PWG) Member** for the development of National Environmental Policy (NEP) for Zambia, which was funded by United Nations Development Programme (UNDP).

Lecturing and Supervision positions

- 2019 to date:** University of Lusaka (UniLus) – Part time lecturing and supervising of research projects for post graduate students (MSc) in climate change and development, and various environmental related courses.
- 2020 to date:** University of Zambia - Currently co-supervising a Phd student looking at “Non Revenue Water Losses from a Socio Perspective.”

Areas of research interest:

- Environmental Management & Preservation
- Human Impacts on the Environment: Past and Present
- Climate Change Adaptation and Mitigation options
- Impacts of Climate Change and Climate Variability
- Role of landfills in waste management

- Dynamics of Wetlands and critical roles they play
- Surface and sub-surface water chemistry and dynamic

Membership to Professional Bodies

- Member – Zambia Academy of Sciences (ZaAS) and current Treasurer
- Member - International Solid Waste Association (ISWA)
- Member - Waste Management & Research (WMR)
- Member- Waste Management World (WMW)

Board of Directors Membership

2020 to date:	Board Chairperson – Kavuluvulu Ventures Ltd
2018 to date:	Member- Technical Advisory Committee of the Zambia Environmental Management Agency (ZEMA) Board
2017 to 2021:	Member of the Board of Directors for Zambia Research Network (ZAMREN) where I chaired the Audit and Compliance Committee
2006-2012:	Member of the Board of Directors, National Housing Authority (NHA)
2010-2012:	National Institute for Scientific and Industrial Research (NISIR) Alternate Member of the Board of Directors Member for the Zambia Environmental Management Agency

Key Skills

Languages	English (fluent), French (fair), Portuguese (beginner)
IT skills	High computer confidence and literacy Office applications (Word, Excel, Access, Outlook, Publisher) Web Design (HTML, HotMetal Pro, Front Page) Statistical packages (SPSS) Geographic Information Systems (ArcView, ArcGIS, MapINFO) ICTs
Miscellaneous	Postgraduate teaching skills (University of Central Lancashire, UK). Dealing with the media (ESRC, Resource-Media or IPCC) Stakeholder facilitation techniques (Focus Group Discussions and Dialogue Matters).
Managerial & Administrative	High levels of skills in managing teams with different backgrounds

Accolades

- Reviewer for Namibia Journal of Science and Technology
- Reviewer Editor for the Fifth Assessment Report (AR5), Working Group 3, Chapter 1.
- Recipient of an International Scholarship from the University of Central Lancashire (UCLan) to pursue doctoral studies in the Centre for Waste Management (CWM), University of Central Lancashire, United Kingdom in 2012.
- Recipient of a Netherlands Fellowship Programme (NFP) to pursue a Master of Science (MSc.) at the UNESCO- IHE Institute for Water Education, Delft, the Netherlands in 2000.
- Recipient of an International Atomic Energy Agency (IAEA) Fellowship to study Ground-Water Hydrology at the University of Ottawa, Department of Earth Sciences, Canada in 2066.

PUBLICATIONS -Journal / Conference/Reports/Workshop Publications

- Muvundika, A.B., Kasali, G., Munyinda, K., Nalweya, C., Phiri, A.M., Lungu, R.M., Zulu, C.M., Mulekwa, E., Chipili, I.G., Phiri, F., Mudenda, O., Makayi, B., Kabinga., 2020. System Observation Chapter. In: Third National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), Government of the Republic of Zambia. Ministry of Lands and Natural Resources, Lusaka, Zambia.

- Muvundika, A.B. 2017. How to Clean Water with Seeds: The Potential Use of *Moringa Oleifera* Seed Powder as a coagulant in the Purification of Water from Unprotected Sources. 10th Edition, Zambia National Commission for UNESCO, Lusaka, Zambia.
- Muvundika, A.B., Mzyece, C.C and Katele, R., 2016. Assessment of Water Quality in Kwamwena and Ndeke-Vorna residential areas of Lusaka (Technical Report).
- Muvundika, A.B., Williams, K.S and Lowe, C.N., 2014. A Glance at the World: Potential Benefits of Implementing Landfill Gas (LFG) Clean Development Mechanism (CDM) Projects at Waste Disposal Sites: Case Study for Implementation at Chunga Landfill Site in Lusaka, Zambia. Waste Management, 35. I-V.
- Muvundika, A.B., Williams, K.S and Lowe, C.N., 2014. Landfill Closure and Aftercare in Africa. Can EU strategies be used? In: II Africa Sustainable Waste Management. ISWA/APESB 2014 International Congress, 22-24 April 2014, Luanda, Angola. ISBN 978-989-96421-8-8, Lisbon, 2014.
- Muvundika, A.B., Williams, K.S and Lowe, C.N., 2014. The Clean Development Mechanism (CDM) as a Potential Source of Additional Financing for Managing Existing Landfill Sites: Case Study at Chunga Landfill Site, Zambia. In: II Africa Sustainable Waste Management. ISWA/APESB 2014 International Congress, 22-24 April 2014, Luanda, Angola. ISBN 978-989-96421-8-8, Lisbon, 2014.
- Grübler, A and Muvundika, A.B (Editors). 2014: Introductory Chapter. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Muvundika, A.B., 2011. Key Water Challenges and Opportunities in Zambia. In: Proceedings of the "State of Water in Southern Africa Workshop", 28-29 July 2011, ASSAf Offices, Pretoria, South Africa.
- Muvundika, A.B., 2006. Water Resources Management in Zambia. In: Proceedings of the "IAP Water Programme Regional Workshop for Africa", 2006, Academy of Science of South Africa (ASSAf), Pretoria, South Africa.
- Muvundika, A.B., 2006. Water Research in Zambia. In: Proceedings of the "IAP Water Programme Regional Workshop for Africa", 2006, Academy of Science of South Africa (ASSAf), Pretoria, South Africa.
- Muvundika, A.B., Chamululu, C. 2003. Environmental Preservation at Mine Sites and Safety and Health Issues. Paper presented during a conference for Small Scale Miners held at Edinburgh Hotel, Kitwe, Zambia.