

## BRIEF BIODATA



Professor Josephine Khaoma Ngaira, PhD, FKNAS, SIGMA XI

Professor of Geography (Climatology) at Masinde Muliro University of Science and Technology- Kenya.  
Member, Scientific Committee of the Integrated Research on Disaster Risk (SC-IRDR) of ISC.

A Fellow, Kenya National Academy of Sciences- FKNAS,

Full Member of The Scientific Research Honor Society-Sigma xi,

Member, International Geographical Union-IGU,

Member, Network of African Science Academies (NASAC- Women for Science Working Group),

“Winner Scientist of the Year Award 2021” in Geography (Climatology) by IARC

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Research Gate Profile: [https://www.researchgate.net/profile/Josephine\\_Ngaira](https://www.researchgate.net/profile/Josephine_Ngaira)

### **Academic and Professional Qualifications:**

Prof. Josephine Ngaira is a Professor of Geography (Climatology) of Masinde Muliro University of Science and Technology. She has a PhD and MSc in Geography (Climatology), and Bachelors degree in (Geography, Education and Religion), from the University of Nairobi. She has International Professional certificates as listed:

- (i). Transforming Our World: Achieving the Sustainable Development Goals” from Columbia University, USA
- (ii). Disaster Management, from World Bank Institute.
- (iii). Comprehensive Disaster Risk Management” from Washington DC,
- (iv). Remote Sensing Education for Educators in developing countries” from Stockholm University, Sweden
- v). Comprehensive Disaster Risk Management- Global Facility for Disaster Risk Reduction, Washington, DC.

### **. Research Focus on Climate change effects**

Prof Ngaira’s research focuses on: Climate Change and its impacts of on socio-economic parameters in Africa and the Arid and Semi-Arid Environments (ASALs), Her research focus is on Anthropogenic causes of floods and droughts ( rainfall and temperature variability) and their impacts on: Agriculture, Food security, water resources, Health, hydro-meteorological disasters and banditry in Africa and Kenya. Examples

1. Between 2004 and 2006, Prof Ngaira carried out a predictive research on “the impact of climate change on Agriculture in Africa by 2030” and published the result in 2007 <http://www.academicjournals.org/SRE> the paper is globally cited and down loaded by Scientists

2. Prof. Ngaira together with the Network of African Science Academies (NASAC) researchers carried extensive researches on: (i). “Climate change and Water Challenges in Africa” and (ii) “Protecting Human Health against Climate Change in Africa” both research results are found on IAP website.
3. Prof Ngaira is listed on the Inter Academy Partnership (IAP) Leopoldina website as an expert author on Climate Change and Health in Africa project (2019-2021), where she researched and authored the listed project topics which were presented virtually at a side event at COP 26 in Glasgow in 2021.
  - (i) Climate Change and Non-Communicable Diseases in Africa,
  - (ii) Effects of Droughts on Health in Africa,
  - (iii) Impact of Climate Caused Locust Invasion on Food Security in Kenya
  - (iv) Hydro-meteorological Disaster Impacts on Eastern Africa.

### **Researches in progress:**

- (i). The Place of GMO as a strategy for increasing food production in the wake of the changing climate in Africa
- (ii). Place of Indigenous Knowledge in weather prediction and climate change mitigation in Arid Africa,
- (iii) The contribution of climate change to the prevalence of Non Communicable Diseases in Africa,
- (iv). The Role of Citizen Science in Risk Reduction and Community Resilience research

### **Training Programs developed**

She developed the following academic programs:

- (i). PhD in Climate change and Sustainable Development,
- (ii). Bachelors and Masters Degree Programs in climate Change which are being offered in Universities in Kenya.
- (iii). A 10 day training Module for local communities titled:” Building Inclusive Climate Change Resilience” which is being offered to enhance the understanding of Climate change adaptation, mitigation, risk reduction and environmental restoration in Kenya

In 2006, Prof Ngaira was an Expert Reviewer with the 5<sup>th</sup> IPCC Assessment Report.

### **Publications and postgraduate Students Mentored**

She has published 3 University level text books of which one of them is titled: “Concepts in Contemporary Climatology and Climate Change” She has over 71 journal papers/chapters in text books/ commentaries with a focus on climate change and health/ food security/banditry/ water/environment and climate change and Disasters. She has supervised over 30 postgraduate students in the field of Climate change Mitigation in agriculture/ water/health/food security and conflicts

### **Keynote Lecture Contributions in Global Climate Change sensitization**

Prof Ngaira has delivered (14) invited keynote lectures on climate change, Disasters, Water resources and environmental science in the following Countries: Beijing, China on “Disasters and Climate change from the perspective of Africa” during the IRDR conference 2024, Cape town, South Africa 2023, Ignite talk on “Who is burning the Planet Earth?. Where shall we go?” UN Geneva, Switzerland on climate change and community resilience (2019), Reduit Mauritius on Water resource Management in Kenya (2012, Ede/Wageningen University, Netherlands on Climate Smart Agriculture (2011), African Academy of Science (AAS) Nairobi on Climate change and water challenges: The road for Africa (2011), Darlana university Sweden, on teaching Geography using GIS (2010), Bagamoyo, Tanzania on Climate change and biodiversity in a changing climate in East Africa (2009), Dar Es Salaam on Climate change and Food production in Africa (2010), Arusha Tanzania on Impact of climate change mitigation: Adopting the green energy options (2007), Entebbe Uganda on climate change and agriculture in Africa by 2030 (2008), AMREF Nairobi Kenya, on climate change and sustainable livelihoods in Eastern Africa (2007)

Nairobi, Kenya on:., *Brain Drain in Africa: A geographical based survey* Dec.2005, Durban, South Africa on “The climatology of Equatorial East Africa : Causes and Impacts of rainfall variability” (2000).

## Global Recognition in Geography and Climate Change Field

- (i). Prof Ngaira is listed by UNESCO among top “15 African Women in Science Breaking Gender Barriers”,
- (ii). She is listed on IAP Website as one of the expert researchers and authors of 2 listed books: (1) “Climate Change and Health” in Africa,(2) “The Grand Challenge of Water Security in Africa”
- (iii) Prof Ngaira was an expert reviewer with the IPCC 5th Assessment Report (WGIII).
- (iv). She is one of the 8 Founding Members of UNESCO’s International Geo-diversity day celebrated every 6<sup>th</sup> October,
- (v). She is the Coordinator, International Geographical Union (IGU) Kenya Chapter

## Leadership Experience

Prof Ngaira is the Director, Institute of Indigenous Knowledge, Cultural Studies and Climate Change (IIKCS &CC), Ag Deputy vice Chancellor Planning, Research and Innovations, Chairperson, Professors’ Forum at Masinde Muliro University of Science and Technology. She serves on many Research Boards and Academic Committees of the Universities in Kenya. Prof Ngaira served as Deputy Vice Chancellor Academic Affairs, Founding Dean, School of Environment and Earth Sciences (SEES), Chairperson, Geography department in Maseno University. She Chaired the Joint Universities Admission Board on ”Gender Affirmative Action” and recommended the admission of Female students to universities at 2points lower than the agreed cut off points until parity is realized. This recommendation was adopted in 2010 by all the universities in Kenya leading to improved ratio of female to male students joining public universities in Kenya from 25:75 in 2008 to 45:55 in 2022.

## Some selected Publications

1. Ngaira JK, (2022): The Burning Planet Earth; Where will we go?. An Ignite Talk presented during the World Science Forum on 5/12 in Cape Town, South Africa. Available at: Global Knowledge Dialogue: Africa-PAEPARD : paepard.blogspot.com>2022/12
2. **Ngaira JKW, (2021)** Climate Change Education: The Road To Sustainable Development: Presented at STEMEIC International Conference at Masinde Muliro University of Science and Technology (MMUST) on 19/11/2021
3. **Ngaira JKW, (2020)**: The Role of Citizen Science in Climate Change Research for Community Resilience in Journal of Environmental Research Vol.4 No.1, Insight Medical Publishing, Amsterdam, Netherlands
4. **Ngaira JKW (2018)**: The role of Technology in mitigating climate change effects on agriculture in sub-Saharan Africa; in First Pan African Research Congress on: Knowledge generation and dissemination. ISBN 978-9966-114-73-0. (1<sup>ST</sup> PAIRC-2018, pp 387 journal abstract).
5. **Ngaira JKW, Karuri T and China S (2017)**: Farmers knowledge of drought and their responses to drought strategies in Machakos County, Kenya. Vol. 14. No.1, African Journal of Science and Technology.
6. **Ngaira JKW (2013)**, Hydrology of Africa: Climate change and water challenges in the21<sup>st</sup> Century. International Journal of Water Resources and Environmental Engineering ISSN 1991-637x @2013 Academic Journals.

7. **Ngaira JKW** and Omwayi K (2012), Climate change mitigation: Challenges of adopting the green energy option in the Lake Victoria basin, in *International Journal of Physical Sciences*, ISSN 1992-1950@2012 Academic Journals
7. **Ngaira JKW**, Musiambo M, (2012), Climate change and agricultural development in Africa: Solutions and challenges to persistent farming in; *International Journal of Asian Social Sciences (IJASS)*, Vol.2, No 2, pp 153-168.
8. Huho, JM, **Ngaira JKW**, Ogindo HO, 2011 *Living with drought: the case of Maasai pastoralists of northern Kenya in Educational Research Journal* (ISSN: 2141 -5161) vol. 2(1). Available online @ <http://www.interestjournals.org/ER>
- 9 Huho JM and **Ngaira JKW** - 2009 Climate change and Pastoral Economy in Kenya: A blinking Future, in *Wiley InterScience, Acta Geologica Sinica @ Geological Society of China*, pp 1017-1023.
- 10 **Ngaira JKW** 2009, Challenges of water resource management and food production in a changing climate in Kenya, in *Journal of Geography and Regional Planning*, vol 2, No 4, pp 097-103, ISSN 2070-1845@ 2009 Academic Journals. Available online at <http://www.academicjournals.org/JGRP>.
- 11 **Ngaira JKW** 2007: *Impact of Climate Change on Agriculture in Africa By 2030 In Scientific Research and Essays (SRE)*. *Academic Journals*. Vol 2 No 7 ISSN 238-243. Available online at <http://www.academicjournals.org/SRE>.
- 12 **Ngaira JKW**. 2007: Climate Change and Water Challenges for Africa in the 21<sup>st</sup> Century. *Journal of Science, Technology, Education and Management (J-STEM)* Vol. 1 No 1 ISSN 1991-2889, pp. 55-69. Available online at <http://www.wust.ac.ke>
- 13 **Ngaira JKW**. 2006 Water Resource Protection for Sustainable Livelihoods in the Greater Horn of Africa (GHA). *Journal of Eastern Africa Environmental Net Work* Vol. 16 PP 29 –40.
- 14 **Ngaira JKW**. 2005: Implications of Climate Change on the management of Rift Valley Lakes in Kenya, the case of Lake Baringo. *Journal of International Lake Environmental Commission (ILEC)* Vol. II, Page 133 – 138.

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