

Curriculum Vitae: Cromwel Busolo Lukorito



SKILLS

- Grant Proposal development for climate action
- Program development and management
- Curriculum development in climate change vulnerability, impacts, adaptation, and related sciences;
- Development and field-testing of data collection tools;
- Siting of climate and Agrometeorological observing stations and installation of instruments;
- Data collection, analysis and report writing,
- Agrometeorological products development for climate change adaptation and resilience building,
- Climate risk management,
- Climate proofing of development plans and projects,
- Development and dissemination of weather based agro- advisories,
- Dissemination of research findings,
- Ability to apply motivating skills to synthesize information by teams
- Seminars and workshops management
- Works as a team.

RESEARCH INTERESTS

- i) Pollution impacts on human health, and urban and peri-urban farming systems
- ii) Climate Change Adaptation for African Agriculture and food systems

Profession: Climate Scientist
Nationality: Kenyan
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SUMMARY

Cromwel Lukorito is a structured academic, professional climate scientist, and seasoned researcher illustrating strong history of transformative climate science research outputs for development in the area of agriculture, climate change and food systems and positive learning outcomes fostered through creative curriculum delivery for capacity building in impacts, vulnerability, and adaptation related fields. He has worked with multidisciplinary teams to carry out relevant research in Kenya and the wider Eastern, Western and Southern Africa regions on climate change in the agricultural sector. He is skilled in sparking thought-provoking discussions to increase team participation and increase information retention. He is always motivated to seek roles that will leverage the over 30 years of teaching and research experience, and a strong sense of academic and research integrity. Supervises Undergraduate and Postgraduate level research in climate change science and applications to biological systems including agriculture and food security, and human health, and advises on ways to shape ideas and conduct impactful research. He has worked extensively in the preparation of proposals for funding for departmental research projects and climate change impacts, vulnerability and adaptation outreach activities. Dedicated Lecturer and researcher with strength in the fields of Meteorology; Climate Change; Environmental science; Biometeorology; Atmospheric Pollution; and Agrometeorology, providing both practical and theoretical knowledge. Has prioritized applied research, from which broad experience has been gained working with the University of Nairobi; Kenya Institute of Public Policy Research and Analysis; UNDP/GEF funded projects, World Bank funded Climate change projects, CCAFS, WWF, ICPAC, UNECA, RMSI, Strat Link Ltd, Outlink Ltd, Media Council of Kenya (MCK), and FAO funded climate change projects among others. He is knowledgeable about rigours of balancing research with classroom and administrative responsibilities. He doubles up as an expert in Agrometeorology dedicated to expanding collective knowledge base through new and interesting studies and fostering climate smart technologies and practices across socioeconomic development sectors. He has published in multiple journals and is a sought-after speaker at climate

- iii) Development of comprehensive Agricultural information systems for enhanced Agro-ecosystem productivity and management
- iv) Crop Yield Responses to Water Management strategies in semi-arid cropping environments for climate change adaptation
- v) Crop Water Requirements and Irrigation Scheduling under various management conditions across Agro-climatic zones of Kenya for resilience building of smallholder farming systems
- vi) Climate Risk Management for agriculture and food systems
- vii) Agroforestry interventions for enhanced sustainability of smallholder farming systems of Sub Saharan Africa.
- viii) Scaling up of Climate Services for Farmers in Eastern and Southern Africa for enhanced climate change adaptation and resilience building
- ix) Development of Agro-Weather tools for Climate Smart Agriculture across agriculture value chains for Africa's smallholder farmers
- x) Cascading climate risks impacts and vulnerability across sectors and borders in Africa and their implications on human and natural systems
- xi) Development and alignment of long-term low carbon emission, climate-resilient development strategies with Sustainable Development Goals (SDGs), Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) in Africa

EXPERIENCE WITH IPCC PROCESS

change forums. He is energetic, a self-starter and team builder. He navigates high-stress situations and achieves goals on time and under budget, with proven track record of successful project management and producing quality outcomes through leadership and team motivation. Utilizes superior communication skills to build meaningful and trusting relationships that exceed client demands. Expert climate scientist bringing over 30 years of expertise in climate change discourse, notably in the scientific basis of climate change, vulnerability, impacts, and adaptation among others, that has been timely in informing Kenya and Africa positions on diverse climate change related issues. Self-motivated to consistently provide first-class results in line with stringent targets and deadlines. Detail-orientated Agrometeorologist adept at making critical decisions, managing deadlines and conducting team reviews. With expertise in analysis and quantitative problem-solving skills, dedicated to institutional growth and improvements.

PROFESSIONAL EXPERIENCE

2004 – Current

Lecturer in Meteorology, University of Nairobi, Kenya

- Planned and developed course curriculums based on Commission of University Education guidelines, trends, and head of department input.
- Created presentations to deliver lecture material in the classroom and online learning environments.
- Developed tests and materials to assess and promote student learning objectives
- Marked and graded homework, assignments, term papers, and tests, providing constructive feedback to improve learning development.
- Collaborated with academic colleagues to develop new courses, incorporate curriculum changes and develop research activities.
- Conducted individual and collaborative research projects on climate risk management in the agriculture and health sectors to produce and publish articles in peer-reviewed journals.
- Contributed to compilation of publicity materials and attended promotional events to encourage and grow new student admissions.
- Worked independently and in collaboration with colleagues to submit climate change related proposals and bids for funding and scholarships to enrich student experience and education.
- Supervised student dissertations and projects, field trips and industrial attachments to gain insight into workplace and impart job experience.
- Participated in outreach activities undertaken by department, school, and entire university to promote and develop links with industry and community partners.

2021

- Participated in the working session of Government Review of the WGII contribution to the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC)
- Reviewed the Second Order draft for Government and Expert Review of AR6 WGII Chapter 5.
- Working session on Government Review of WGIII contribution to AR6 of IPCC

2022

- Government Review of the summary for policymakers (SPM) for WGIII contribution to the AR6 of the IPCC
- Unpacking IPCC WGII Report on Climate Change Impacts, Vulnerability and Adaptation: Implications for East Africa
- Reviewed the IPCC Synthesis Report to the Sixth Assessment Report (AR6) of the IPCC

2023

- Participated as a Kenyan Delegate in the 58th Session of the IPCC (IPCC-58) to approve and adopt the synthesis Report of the AR6 of the IPCC
- Participated in the workshop on Africa's preparedness for the IPCC 7th Assessment Cycle and outline scoping to review knowledge gaps identified in AR6 and other scientific reports important for Africa that could inform common position in scoping outlines for AR7 Cycle.

EDUCATION**2023**

In Progress, PhD in Meteorology, awaiting examination

University of Nairobi, Kenya

- Ph.D. Graduate
- Meteorology
- Thesis in Agrometeorology
- Ph.D. to be awarded

2000 – 2003

Assistant Lecturer in Meteorology, University of Nairobi

- Advised students on career opportunities in fields of interest and required courses to achieve them.
- Administered examinations, graded papers, and assigned fair, accurate grades based on results.
- Supervised undergraduate and postgraduate diploma student projects, facilitating progress and encouraging deeper learning through application.
- Wrote technical papers to disseminate findings to peer-reviewed journals in the field of applied meteorology.
- Attended conferences to learn about new research and presented research findings.
- Created challenging assignments, projects and lessons designed to promote critical thinking among students.
- Collated articles explaining key curriculum concepts and shared information with students to reinforce lectures.
- Spearheaded research into agrometeorology, designing protocols, leading research teams and overseeing execution.
- Delivered lectures and seminars in Agrometeorology, Biometeorology, Atmospheric Radiation and Optics, Environmental Science, Climatology, and meteorological instrumentation and methods of Observation.
- Coordinated learning and extra-curricular activities, supervising learner interactions to maximize experience.
- Nurtured students' social, emotional and academic development by providing in-class and field work support.

1994 - 1999

Tutorial Fellow, University of Nairobi, Kenya

- Delivered lectures and seminars in Agrometeorology and general Meteorology
- Advised students on career opportunities in fields of interest and required courses to achieve them.
- Directed research of individuals engaged in robust work during post-graduate studies in pursuit of advanced degrees.
- Wrote technical papers to disseminate findings to peer-reviewed journals and field at large.
- Administered examinations, graded papers and assigned fair, accurate grades based on results.
- Supervised student projects, facilitating progress and encouraging deeper learning through application.
- Spearheaded research into Agrometeorology, designing experiments, leading research teams and overseeing execution.
- Facilitated participatory discussions focused on catalyzing student interest and deepening understanding of concepts.
- Attended conferences to learn about new research and present own research findings.

1992

Master of Science in Meteorology
University of Nairobi, Kenya

- MSc Graduate
- Thesis in Agrometeorology
- MSc Degree
- Coursework in Agrometeorology

1989

Bachelor of Science in Meteorology
University of Nairobi, Kenya

- BSc Meteorology Graduate
- Meteorology
- BSc Degree
- Coursework in Meteorology

PROFESSIONAL AFFILIATIONS

- Member, Kenya Meteorological Society (KMS)
- Member, Kenya Climate Smart Agriculture Multistakeholder Platform (CSA-MSP)
- Member, CSA-MSP Steering Committee
- Member, Universities Academic Staff Union (UASU)

RESEARCH AND SUPERVISED PROJECTS

- a) Assessment of Maize Crop Water Requirements under Present and Future Climate in Agro-Climatic Zones of Central and Southern Regions of Malawi.
- b) Monitoring Vegetation Phenological Stages using remote sensing data for pasture management in Arid and Semi-Arid Lands of Kenya
- c) The impact of Climate Variability on Sugarcane production in the Mumias Sugarcane growing zone of Western Kenya
- d) Application of Phosphorus Fertilizer in Pigeon pea, *Cajanus cajan* (L.) Millsp in South eastern low lands of Kenya
- e) Investigating the effect of Climate Variability on Pearl

1992 – 1993

Graduate Research and Teaching Assistant in Meteorology, University of Nairobi

- Worked with creativity and enthusiasm to engage students in diverse academic concepts, improving student achievement.
- Worked one-on-one with students to develop specific areas of educational, emotional, and social needs.
- Collaborated effectively with department teams to plan and deliver the required curriculum
- Developed stimulating learning environments through engaging classroom displays and resources.
- Used academic subject expertise to support students in grasping complex curricular concepts.
- Helped students master learning concepts through one-on-one and small group tutoring.
- Gave tests, invigilated exams and marked students' work.

SELECTED CLIMATE CHANGE IMPACTS, VULNERABILITY AND ADAPTATION WORK

- Developed and delivered a training Module on adaptation and mitigation in Processing and packaging for African Food Changemakers (AFC's) "Building Resilience against Climate and Environmental shocks" (BRACE), 2023.
- Led Government review for the IPCC AR6 WGII report on the chapter on Food systems and the Synthesis report review.
- Developed Climate Change Curriculum and Training Services in Eastern Africa for the Media Council of Kenya climate change adaptation reporting, 2020.
- Supported the mainstreaming of climate change adaptation measures into Kakamega and Siaya County Integrated Development plans for Outlink Ltd, 2017.
- Contributed to Chapter Three of the Climate-Smart Agriculture for Increased Resilience and Food Security, on the "Status of African Agriculture" by AGRA, 2014.
- Implemented an experimental approach to capacity and toolkit development for monitoring and evaluation within climate change adaptation initiatives in Eastern Africa, 2012.
- Assessed the Ecosystem Vulnerability, Impacts and Adaptation to Climate Change in Lake Naivasha Basin, Kenya for the World-Wide Fund for nature (WWF), 2011-2012.
- Implemented the ICPAC/ Rockefeller foundation supported project on enhancement of agriculture production and food security for adaptation to climate variability and change in the Greater Horn of Africa, 2011-2013.
- Documented stories of change within the IDRC/CCAA AfricaAdapt knowledge sharing platform on climate change adaptation in Africa programs, 2011

Millet (*Pennisetum glaucum*) productivity and drought monitoring in Namibia.

- f) Impacts of Climate Change on Indigenous Peoples' livelihoods: A case of Loodokilani Maasai, Kajiado County, Kenya
- g) Comparative Analysis of Communication Channels influencing Diffusion and Adoption of Quality Protein Maize: The Case of Kathonzweni and Kirinyaga Sub Counties of Kenya
- h) An Evaluation of Access to Weather Forecast Information among Maize Farmers in Busia County: The Case of Bunyala Sub County.
- i) Effects of Participatory Action Research on Smallholder Farmers to Climate Change Adaptation: Case of Nyando, Kenya
- j) Evaluation of the effects of Agro-Meteorological Information on the Maize Enterprise Selection among Smallholder Farmers.
- k) Assessing the impacts of climate variability and change on maize productivity in Narok County, Kenya
- l) Impact of climate variability and change on sorghum yield in Lesotho
- m) Assessing the influence of the variation in some seasonal rainfall parameters on maize production in Eswatini

CLIMATE CHANGE RELATED OUTREACH ACTIVITIES

- i. Provides technical support to the African Group of Negotiators in the United Nations Framework Convention on Climate Change processes
- ii. Provides technical backstopping to the Climate Governance, Diplomacy and Negotiations Leadership Program of the AGNES

- Assessed the effects of Participatory Action Research on Smallholder Farmers to Climate Change Adaptation: Case of Nyando, Kenya
- Contributed to the development of Agro-Weather Tools for Climate Smart Agriculture in Kenya, 2015.

PUBLICATIONS

1. Mumo, L., Yu, J., Ojara, M., **Lukorito, C.**, and Kerandi N. 2021. Assessing changes in climate suitability and yields of maize and sorghum crops over Kenya in the twenty-first century. *Theor Appl Climatol*. <https://doi.org/10.1007/s00704-021-03718-6>
2. Faridah H. W., G. A. **Lukorito, C.B.**, T.K. Kamanu. 2020. Levels of PM10 and PM2.5 and Respiratory Health Impacts on School-Going Children in Kenya. *Journal of Health & Pollution* Vol. 10, No. 27: 1-20
3. Masambaya, F.N., Oludhe, C, **Lukorito, C.B.**, and Onwonga, R. (2018). Vulnerability of maize production to climate change in maize producing counties of Rift Valley Kenya: The Indicator Approach. *International journal of scientific and Research publication*: Vol 8 (9):28-44
4. Wafula K. C., Mugivane I. F., **Lukorito C.**, and Esilaba O. A. 2015. Assessment of Smallholder adoption of quality protein maize in Kenya. The case of Kirinyaga County. *Prim. J. Bus. Admin. Manage.* Vol 5(6): 1881- 1885.
5. **Lukorito, C.B.** 2014. Climate Based Agro-advisories in Africa Agriculture Status Report 2014: Climate Change and Smallholder Agriculture in Sub Saharan Africa: p100- 102.
6. Moses Tenywa, Woldeamlak Bewket, **Cromwel Lukorito**, David Mkwambisi and Mohamed Nasr. 2012. Synthesis of Submissions on Issues Related to Agriculture to the Thirty Sixth Session of the Subsidiary Body on Scientific and Technological Advice; Summary for African Group of Negotiators
7. **Lukorito, C .B** and S.D. Chabvunguma. 2011. Assessment of Maize Crop Water Requirements under Present and Future Climate in Agro-Climatic Zones of Central and Southern Regions of Malawi.
8. **Lukorito, C. B**; Ouma, G O; Adipala, E; Tusiime, G; Majaliwa, J G M. 2010. Enhancing the capacity of Kenya on climate risk reduction and climate change adaptation for sustainable agricultural productivity and food security. Second RUFORUM Biennial Meeting 20 - 24 September 2010, Entebbe, Uganda. Pp 1459-1468.
9. Ambani, M.K., Ouma, G.O. & **Lukorito, C.B.** 2010. Monitoring vegetation phenological stages using remote sensing data for pasture management in arid and semi-Arid lands of Kenya. Second RUFORUM Biennial Meeting 20 - 24 September 2010, Entebbe, Uganda. Pp 1451-1457.

- on the physical science basis of climate change
- iii. Contributes to country level processes involving climate change negotiations under the UNFCCC on matters related to the Nairobi Work Program on impacts, vulnerability and adaptation to climate change, Adaptation and the Santiago Network on Loss and Damage, and Research, Science and Review.
- iv. Capacity building of the media personnel on climate change adaptation reporting
- v. Facilitates a training course for the African Food Changemakers' (AFC's) "Building Resilience against Climate and Environmental shocks" (BRACE) program

LINKAGES/RESEARCH COLLABORATIONS

- i) Regional Universities Forum for Capacity building in Agriculture (RUFORUM): Enhancing the capacity of Kenya on Climate Risk Reduction and Climate Change Adaptation for Sustainable Agricultural Productivity and Food Security, 2010.
- ii) Climate Change Agriculture and Food Security (CCAFS) Programme: Reducing risks and capitalizing on opportunities created by variable climate through use of improved downscaled seasonal climate forecasts
- iii) CCAFS, WMO, CSP, and USAID: Scaling Up Climate Services for Farmers in Eastern and Southern Africa.
- iv) CCAFS, ACPC, and COMESA: Vulnerability of Africa's Agriculture to Climate Change.
- v) Alliance for Green Revolution in Africa (AGRA): Climate-Smart

10. **Lukorito, C.B. 2009.** Impacts of Climate Change on African Agriculture and potential roles of farmers in Adaptation and Mitigation. Paper presented at the 16th IFAP Committee Meeting, held at Panari Hotel Nairobi, 22- 25 April 2009.
11. **Lukorito, C.B.,** Yonah, I., S.B.B. Oteng'i. 2006. Assessment of the Growing Season over Unimodal Rainfall Regime Region of Tanzania". TAJAS, Vol.7 (1).
12. **Lukorito, C.B.** and F.K. Karanja. 2006. Effective Information delivery Mechanisms and Capacity Building Programs to raise awareness and enable Governments, Agribusinesses and Communities to understand Climate Variability. ASARECA Workshop on "Making the Best of Climate - Adopting Agriculture to Climate Variability".6 - 10th February 2006, Nairobi, Kenya.
13. **Lukorito, C.B.;** N.J. Muthama; and A.O. Opere. 2003. Utilisation of Meteorological Products in Agriculture and Water Sectors in Central and Eastern Kenya. African Meteorological Society 6.
14. **Lukorito, C.B.** 1992. Water Use Efficiency of Maize (*Zea mays* L.) in a Dryland Area Kenya. MSc. Thesis. University of Nairobi.

CONSULTANCY

1. Facilitated a training course for African Food Changemakers (AFC's) "building resilience against climate and environmental shocks" (BRACE) program, 2023.
2. Climate Change Curriculum Development and training Services in Eastern Africa, Media Council of Kenya, 2020.
3. Supported the mainstreaming of climate information into Kakamega and Siaya County Integrated Development plans for Outlink Ltd, 2017.
4. Weather based forecasting of agricultural productivity, consumption and imports/ exports in selected African countries for StratLink-Africa, 2015
5. Contributing Author to Chapter Three: Climate-Smart Agriculture for Increased Resilience and Food Security, on the "Status of African Agriculture" by AGRA, 2014.
6. An experimental approach to capacity and toolkit development for monitoring and evaluation within climate change adaptation initiatives in Eastern Africa, 2012.
7. Assessment of Ecosystem Vulnerability to Climate Change in Lake Naivasha Basin, Kenya, WWF, 2011-2012.
8. Review of the IGAD Climate Prediction and Applications Centre (ICPAC) Strategy and Implementation Plan, 2011-2013
9. Implementing an ICPAC/ Rockefeller foundation supported project on enhancement of agriculture production and food security for adaptation to climate variability and change in the Greater Horn of Africa, 2011-2013.
10. Documenting stories of change within the IDRC/CCAA AfricaAdapt knowledge sharing platform climate change adaptation in Africa programmes, 2011

- vi) Agriculture for Increased Resilience and Food Security Resources Management Solutions Inc. (RMSI), India: Development of Agro-Weather Tools for Climate Smart Agriculture in Kenya.
- vii) Media Council of Kenya (MCK) (2019)
- viii) Kenya Climate Smart Agriculture Programme (KCSAP)
- ix) African Group of Negotiators Expert Support (AGNES)
- x) African Food Changemakers (AFC), West Africa (2023): Building Resilience against Climate and Environmental Shocks (BRACE) Program
- xi) Resources Management Solutions Inc. (RMSI), India (2023): Design of a parametric insurance product for small scale milk producers under the Horn of Africa DRIVE project

- 11. Development of the East African Scenarios for the ILRI hosted Climate Change Agriculture and Food Security (CCAFS) Program, Sept 2010 to October 2010.
- 12. Development of a training manual for climate change adaptation reporting for the Media council of Kenya, September 2022
- 13. Design of a parametric insurance product for small scale milk producers under the Horn of Africa DRIVE project for RMSI.

LANGUAGE

Language	Reading	Speaking	Writing
English	Fluent	Fluent	Fluent
Swahili	Good	Fluent	Good

REFEREES

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