



**ORCHID: 0000-0003-1341-5507**

**Position: Research Scientist (*Landscape Ecology, Biodiversity conservation and Climate change*)**

## **1. PERSONAL INFORMATION**

- 1.1. NAME:** Chemuku Wekesa  
**1.2. ADDRESS:** P.O. Box 1206-80304, Wundanyi  
**1.3. PHONE:** +254 722 985279  
**1.4. EMAIL ADDRESS:** [cwekesa@kefri.org](mailto:cwekesa@kefri.org)/[chemukukefri@gmail.com](mailto:chemukukefri@gmail.com)  
**1.5. NATIONALITY:** Kenyan  
**1.6. GENDER:** Male

## **2. QUALIFICATIONS**

### **2.1. Academic Qualifications**

- 2015 – 2018:** PhD in Landscape Ecology, Egerton University, Kenya.  
**2007 – 2010:** Master of Science in Environmental Science, Egerton University, Kenya  
**2000 – 2004:** Bachelor of Science in Forestry, Moi University, Kenya.

### **2.2. Key Competencies**

- Leadership and Management
- Forestry and Natural Resources Management
- Research Management
- Project Management
- Fostering Partnerships and Networking

### **2.3. Other Courses**

- 5<sup>th</sup> April – 3<sup>rd</sup> May 2019:** Senior Management Course, Kenya School of Government, Mombasa.  
**23<sup>rd</sup> – 27<sup>th</sup> April 2018:** Modelling Climate and Applications to the Forestry Sector in Eastern and Southern Africa.  
**1<sup>st</sup> – 5<sup>th</sup> September 2014:** Climate Change, Rapid Carbon Stock Appraisal and Development of PIN and PDD for Carbon Financing.  
**11<sup>th</sup> – 13<sup>th</sup> September 2013:** ISO 14001 Internal Environmental Auditing Course.

**13<sup>th</sup> – 17<sup>th</sup> February 2012:** Development of Extension Materials.

**27<sup>th</sup> – 30<sup>th</sup> October 2010:** Participated in a Training Course on ISO 14001: 2004.

### **3. EMPLOYMENT HISTORY**

**August 2018 - Present:** Research Scientist I, Kenya Forestry Research Institute, Taita Taveta Research Centre.

**February 2013 - July 2018:** Research Scientist II, Kenya Forestry Research Institute, Coast Eco-Region Research Programme.

**June 2010 - February 2013:** Assistant Research Officer, Kenya Forestry Research Institute, Coast Eco-Region Research Programme.

### **4. ADMINISTRATIVE RESPONSIBILITY**

**November 2017 - Present:** Assistant Regional Director, Kenya Forestry Research Institute, Taita Taveta Research Centre.

### **5. PUBLICATIONS**

#### **5.1. Journal papers**

Mutta, D., Mahamane, L., **Wekesa, C.**, Kowero, G., and Roos, A (2021). Sustainable Business Models for Informal Charcoal Producers in Kenya. *Sustainability* 13 (6), 3475; <https://doi.org/10.3390/su13063475>.

M.T.E. Mbuvi, L. Ndalilo, **C. Wekesa**, P. Matiku and S. Munguti (2020). Engagement of decision makers for improved management of shared resources for enhanced community benefits and adaptation to the changing climate in Tana River Delta, Kenya. *Research and Reviews: Journal of Ecology and Environmental Sciences* 8(3): 1-15.

**C. Wekesa**, B. Kirui, E. Maranga and G.M. Muturi (2020). The Fate of Taita Hills Forest Fragments: Evaluation of Forest Cover Change Between 1973 and 2016 Using Landsat Imagery. *Open Journal of Forestry* 10: 22-38.

**C. Wekesa**, B. Kirui, E. Maranga and G.M. Muturi (2019). Variations in forest structure tree species diversity and above-ground biomass in edges to interior cores of fragmented forest patches of Taita Hills, Kenya. *Forest Ecology and Management* 440: 48-60.

M.T.E. Mbuvi, J.B. Kungu, F.N. Gachathi, **C. Wekesa**, N. Leley and J.M. Muthini (2019). Annotated checklist of plant species of Loita Forest (Entim e Naimina Enkiyio Forest or the forest of the lost child), Narok County, Kenya. *International Journal of Advanced Research in Biological Sciences* 6(3): 54-110.

**C. Wekesa**, E.K. Maranga, B.K. Kirui, G.M. Muturi and M. Gathara (2018). Interactions between native tree species and environmental variables along forest edge-interior gradient in fragmented forest patches of Taita Hills, Kenya. *Forest Ecology and Management* 409: 789-798.

F. Alemayehu and **C. Wekesa** (2017). Structure and natural regeneration of Mangroves in areas exposed to different agents of degradation in Kenya. *Journal of Global Biosciences* 6(1): 4695-4707.

**C. Wekesa**, N.C. Leley, G.M. Muturi, M.T.E Mbuvi and B.N. Chikamai (2016). Effects of Forest Disturbance on Vegetation Structure and Above-Ground Carbon in Three Isolated Forest Patches of Taita Hills. *Open Journal of Forestry* 6: 142-161.

**C. Wekesa**, B. N. Chikamai, J.K. Lelon, M.O. Muga and A. M. Luvanda (2015). Gum arabic production potential of naturally growing *Acacia senegal* varieties in Kenyan drylands. *Octa Journal Environmental Research* Vol. 3(1): 100-111.

P. Makenzi, P. Ketiem, P. Omondi, E. Maranga and **C. Wekesa** (2013). Trend analysis of climate change and its impacts on crop productivity in the lower Tana River Basin, Kenya. *Octa Journal Environmental Research* Vol. 1(4): 237-248.

**C. Wekesa**, A. M. Luvanda, M. O. Muga, B. N. Chikamai and P. M. Makenzi (2013). Market chain analysis of gum arabic trade in Kenya. *Oct. Jour. Env. Res.* Vol. 1(2): 93-106.

J.K. Lelon, I. O. Jumba, J. K. Keter, **C. Wekesa** and F. D. O. Oduor (2010). Assessment of physical properties of gum arabic from *Acacia senegal* varieties in Baringo District, Kenya. *African Journal of Plant Science* Vol. 4 (4): 95-98.

**C. Wekesa**, P. M. Makenzi, B. N. Chikamai, A. M. Luvanda and M. Muga (2010). Traditional Ecological Knowledge Associated with *Acacia senegal* (Gum arabic tree) Management and Gum Arabic Production in Northern Kenya. *International Forestry Review* Vol. 12 (3): 240-246.

J. K. Lelon, M. O. Muga, D. W. Odee, **C. Wekesa** and B. Ndakwe (2010). Effect of chemical properties of soils on gum elementary compositions from *Acacia senegal* var. *kerensis* in Samburu and Marsabit Districts. *African Journal of Plant Science* Vol. 4 (2): 021-025.

**C. Wekesa**, P. M. Makenzi, B. N. Chikamai, J. K. Lelon, A. M. Luvanda and M. Muga (2009). Gum arabic yield in different varieties of *Acacia senegal* (L.) Willd in Kenya. *African Journal of Plant Science* Vol. 3 (11): 263-276.

## 5.2. Books

Ochieng' D., Luvanda, A., **Wekesa**, C., Mbuvi, M.T.E., and Ndalilo, L (2017). *Biodiversity Status of Arabuko Sokoke Forest, Kenya*. KEFRI/KCDP. 66 Pages.

Mbuvi, M., Wekesa, L., Ntabo. M., Owuor, B., **Wekesa**, C., Eshitera, A., Karangi, M., Cheruiyot, L., Manyala, P., Okeyo, M., Sheikh, M., Kihara, K., Muchiri, M., Ongugo, P., Kala, A. and Nereoh, L

(2016). *Capability Mapping for Growing High Value Tree Species in the Coast Region of Kenya: A Guide for Forest Managers, Extension Agents and Investors*. KEFRI/KCDP. 74 Pages.

Gachathi, F., Mbuvi, M.T.E., Wekesa, L., **Wekesa, C.** and Leley, N (2016). *A Field Guide to Valuable Trees and Shrubs of Kaya Mudzi Muvya Forest in Kilifi County, Kenya*. KEFRI/KCDP. 40 Pages.

**C. Wekesa (2015)**. *Traditional Ecological Knowledge and Acacia senegal Management*. LAP LAMBERT Academic Publishing, 128 Pages, ISBN-13:978-3-659-77741-7.

### **5.3. Book Chapters**

**Wekesa, C.**, Ndalilo, L., and Manya, C (2021). *Reconciling Community Livelihood Needs and Biodiversity Conservation in Taita Hills Forests for Improved Livelihoods and Transformational Management of the Landscape*. In Nishi, M., Subramanian, S.M., Gupta, H., Yoshino, M., Takahashi, Y., Miwa, K., and Takeda, T. (Eds), *Fostering Transformative Change for Sustainability in the Context of Socio-Ecological Production Landscapes and Seascapes (SEPLS)*, Springer Nature, 17-35.

Ndalilo, L., **Wekesa C.**, Mbuvi, M.T.E (2020). Indigenous and Local Knowledge practices and innovations for enhancing food security under climate change: examples from Mijikenda communities in coastal Kenya. In: Gasparatos, A., Naidoo, M., Ahmed, A., Karanja, A., Fukushi, K., Saito, O., and Takeuchi, K. (eds) *Sustainability challenges in sub-Saharan Africa II: insights from eastern and southern Africa*. Springer, Berlin.

**C. Wekesa** and L. Ndalilo (2018). Sustainable use of biodiversity in socio-ecological production landscapes and seascapes (SEPLS) and its contribution to effective area-based conservation: the case of Kaya forests in Kenyan Coast. Book Chapter: In UNU-IAS and IGES (eds) 2018, *Sustainable Use of Biodiversity in Socio-ecological Production Landscapes and Seascapes and its Contribution to Effective Area-based Conservation (Satoyama Initiative Thematic Review vol. 4)*, United Nations University Institute for the Advanced Study of Sustainability, Tokyo. ISBN: 978-92-808-4643-0.

**C. Wekesa**, L. Ndalilo and K. Swiderska (2016). Kaya forests: role in climate change adaptation among the Mijikenda community. Book Chapter: In UNU-IAS & IR3S/UTIAS, *Socio-ecological production landscapes and seascapes (SEPLS) in Africa*. United Nations University Institute for the Advanced Study of Sustainability, Tokyo. ISBN: 978-92-808-4569-3.

### **5.4. Technical Notes /Protocols/Guidelines**

**C. Wekesa**, J. K. Ndufa and P. Tuwei (2020). *Mangrove Deaths in Kenya: Causes and Recommended Management Interventions*. KEFRI. 15 Pages.

## 5.5. Policy Briefs

Swiderska, K., A. Argumedo, Y. Song, A. Rastogi, N. Gurung, and **C. Wekesa** (2018). 904 Biocultural innovation: the key to global food security? London, UK: International Institute for Environment and Development (IIED). URL: <http://pubs.iied.org/17465IIED/?p=17461>.

Swiderska, K, Argumedo, A, Song, Yiching, Rastogi, A, Gurung, N and **Wekesa, C.** (2016). *SDG2: achieving food security, sustainability and resilience using genetic diversity and indigenous knowledge*. <http://pubs.iied.org/pdfs/17410IIED.pdf>.

## 6. RESEARCH

### 6.1. Completed

1. Restoration of Sacred Kaya Forests in Kenyan Coast for Enhanced Provision of Ecosystem Services and Products for Improved Livelihoods (2017 –2018).
2. Assessing the Effects of Forest Fragmentation on Forest Cover Dynamics, Tree Species Diversity and Carbon Stock in Taita Hills, Kenya (2016 – 2017). Research Fellowship on Land Use, Land Use Change and Forestry Linked to Climate Change.
3. Smallholder Innovation for Resilience: Strengthening Innovation Systems for Food Security in the face of Climate Change (2012 – 2017).
4. ACACIAGUM Project (2007 – 2012). Innovative management of Acacia senegal trees to improve resource productivity and gum-arabic production in arid and semi-arid sub-Saharan Africa.

### 6.2. Ongoing research

1. Promoting Long-term Conservation of Endangered Tree Species in the Eastern Arc Mountains Forests of Taita Hills, Kenya (2020 – 2023).
2. Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience (2019 –2021).
3. Validating Sustainable Land Management Technologies for Enhanced Carbon Sequestration and Improved Smallholder Farmer’s Livelihoods (2019 –2021).
4. Indigenous Biocultural Heritage for Sustainable Development (2018 –2021).
5. Impact of Covid-19 pandemic on sustainable livelihoods, forests, and conservation in Africa (2020-2022)

### 6.3. Mentorship and supervision

1. Co-Supervising **Sudan Kariuki**, PhD in Ecology and Evolutionary Biology, Cornell University, USA (2019-2023). Thesis title: *Understanding ecological processes in restored sacred Kaya forests in Kenya*. Student expected to graduate in December 2023.
2. Co-Supervised **Basile Guillot**, Master of Science in Forest, Nature, Society and International Management, AgroParisTech University, France (2018-2020). Thesis title: *Investigating potential effects that payment for ecosystem service protection scheme could have on*

*biodiversity conservation in the River Lumi and Lake Jipe Riparian ecosystems*. Student graduated in April 2020.

3. Co-Supervised **Arafa Amur**, Master of Science in Environmental Science, Pwani University, Kenya (2014-2017). Thesis title: *Impacts of Elephants (Loxodonta Africana Blumenbach) Confinement on Forest Structure and Regeneration in Arabuko Sokoke Forest*. Student graduated in December 2018.
4. Co-Supervised **Maxie Elizabeth Groh**, Master of Science in African Studies, University of Lisbon, Portugal (2014-2016). Thesis title: *Community Based Adaptations to Climate Change: Experiences of the Mijikenda Community in Coastal Kenya*. Student graduated in December 2016.

## **7. INNOVATIONS AND PATENTS (Intellectual Property)**

## **8. CONFERENCES/SEMINARS/WORKSHOPS**

### **8.1. Presentation of Papers at Academic and Professional Conferences**

**C. Wekesa (2018)**. Restoration of Sacred *Kaya* forests in Kenyan Coast for enhanced provision of ecosystem services and products for improved livelihoods. Presentation made at IPSI-7 Global Conference, Ishikawa, Japan, 30<sup>th</sup> September - 2<sup>nd</sup> October 2018.

**C. Wekesa**, L. Ndalilo and P. Ongugo (2017). Traditional Knowledge based innovations in light of climate change: SIFOR experiences in Kenya. Presentation made at Mountain Agriculture Policy Dialogue, Kalimpong, India, 6 -7<sup>th</sup> May 2017.

**C. Wekesa (2016)**. Experiences in natural forests and riverine ecosystems rehabilitation and restoration in the Coast Region, Kenya. IUFRO International Knowledge-Sharing Workshop on “*Forest Landscape Restoration and Global Change: From Policy to Practice*.” Kigali, Rwanda, 26 - 27<sup>th</sup> July 2016.

**C. Wekesa**, N.C. Leley, G.M. Muturi, M.T.E Mbuvi and B.N. Chikamai (2016). Effects of Forest Disturbance on Vegetation Structure and Above-Ground Carbon in Three Isolated Forest Patches of Taita Hills. Paper presented during Asia-Oceania IUFRO congress, 24-27<sup>th</sup> October 2016, Beijing, China.

**C. Wekesa**, L. Ndalilo, P. Ongugo, N. Leley and K. Swiderska (2015). Traditional knowledge-based innovations for adaptation and resilience to climate change: the case of Coastal Kenya. XIV World Forestry Congress, Durban, South Africa, 7 -11<sup>th</sup> September 2015.

M.T.E. Mbuvi, P. O. Ongugo, **C. Wekesa** and J. K. Musyoki (2015). Programmatic management versus business-as-usual: The need to institutionalize the paradigm shift in Kenya Forestry Sector. XIV World Forestry Congress, Durban, South Africa, 7 -11<sup>th</sup> September 2015.

**C. Wekesa** (2015). Traditional knowledge Based Innovations for Adaptation and Resilience to Climate Change: The Case of Coastal Kenya. Paper presented during Satoyama Initiative Workshop, 10 -12<sup>th</sup> August 2015, Accra, Ghana.

**C. Wekesa** (2013). Preliminary results for the baseline survey on smallholder innovations for resilience (SIFOR): strengthening biocultural innovation systems for food security in the face of climate change: Kenyan case. Paper presented in SIFOR project methodology coordination workshop, 29<sup>th</sup> April - 4<sup>th</sup> May 2013, Royal Inca Hotel, Písaq, Cusco, Peru.

**C. Wekesa** (2013). Smallholder Innovation for Resilience (SIFOR): Strengthening Biocultural Innovation Systems for Food Security in the Face of Climate Change: Kenyan Case. Paper presented in Agriculture Innovation Systems in Africa (AISA) Workshop held at KCB Leadership Center, Karen Nairobi, 29<sup>th</sup> - 31<sup>st</sup> May 2013.

**C. Wekesa** (2012). Experience on gum arabic production potential in Kenya dry lands of naturally growing *Acacia senegal* varieties. Paper presented in IUFRO-FORNESSA Regional Congress and ITTO/AFF Forest Policy day, 25 - 29<sup>th</sup> June 2012. Nairobi, Kenya.

## **8.2. Participation in Workshops/Conferences**

1. Indigenous Food Systems, Biocultural Heritage and the Sustainable Development Goals: Challenges, interdisciplinary research gaps and empowering methodologies Virtual Workshop organized by IIED and Royal Botanic Gardens, Kew 13<sup>th</sup> -15<sup>th</sup> October 2020.
2. Indigenous Biocultural Heritage for Sustainable Development: British Academy Project Planning Workshop, London, UK, 15<sup>th</sup> -17<sup>th</sup> January 2019.
3. National Stakeholders Workshop on Sustainable Business Models for Forest Based Value Chains in Kenya, 26<sup>th</sup> -27<sup>th</sup> February 2020.

## **8.3. Convening/Coordinating Conferences**

1. Stakeholders' workshop on sustainable business models for forest-based value sub-Saharan Africa, 26 – 27<sup>th</sup> February 2020, Mombasa, Kenya.
2. Smallholder Innovation for Resilience: strengthening innovation systems in the face of climate change. Partners' progress review and international policy workshop, 12-16<sup>th</sup> October 2015, Watamu, Kenya.

## **9. PROFESSIONAL ENGAGEMENT**

### **9.1. Training**

1. Part time Lecturer, School of Agricultural, Earth and Environmental Sciences, Taita Taveta University. Courses taught: *SBT 2203: Plant Ecology* and *AEE 2101: Environmental Studies*.

2. Visiting Scholar, Faculty of Forest Sciences, Swedish University of Agricultural Sciences (SLU).  
Course taught: *SG0247 Structure and Politics of the Global Forest Sector*.

## **9.2. Consultancies**

1. Development of Kwale Forest Landscape Restoration Plan (2020-2024)
2. Development of Participatory Forest Management Plan for North Marmanet Forest Station (2015-2019)
3. Development of Participatory Forest Management Plans Cherangani Hills Forest Stations (2015-2024)

## **9.3. Collaboration with external organizations**

1. International Institute for Environment and Development (IIED), UK
2. Swedish University of Agricultural Sciences (SLU), Sweden
3. Association ANDES, Peru
4. Centre for Chinese Agricultural Policy (CCAP), China
5. University of Toronto, Canada
6. Cornell University, USA
7. International Partnership for the Satoyama Initiative (IPSI), Japan
8. Lok Chetna Manch (LCM), India

## **10. EXTERNAL AND INTERNAL RESEARCH GRANTS**

1. *Impact of Covid-19 pandemic on sustainable livelihoods, forests, and conservation in Africa* (1<sup>st</sup> January 2021 – December 2022). **Funding level: SEK 961,748.00.** Funded by FORMAS, Sweden.
2. *Promoting Long-term Conservation of Endangered Tree Species in the Eastern Arc Mountains Forests of Taita Hills, Kenya* (1<sup>st</sup> July 2020 – 30<sup>th</sup> June 2023). **Funding level: USD 110,000.00.** Funded by Fondation Franklinia, Switzerland.
3. *Indigenous Food Systems, Biocultural Heritage and Agricultural Resilience* (1<sup>st</sup> October 2019 – 30<sup>th</sup> March 2022). **Funding level: £ 172,981.74.** Funded by Arts and Humanities Research Council, UK.
4. *Validating Sustainable Land Management Technologies for Enhanced Carbon Sequestration and Improved Smallholder Farmer's Livelihoods* (1<sup>st</sup> November 2019 – 30<sup>th</sup> October 2021). **Funding level: KES 4,000,000.** Funded by Kenya Climate Smart Agriculture Project.
5. *Indigenous Biocultural Heritage for Sustainable Development* (26<sup>th</sup> September 2018 – 25<sup>th</sup> December 2020). **Funding level: £ 300,000.00.** Funded by British Academy, UK.
6. *Restoration of Sacred Kaya Forests in Kenyan Coast for Enhanced Provision of Ecosystem Services and Products for Improved Livelihoods* (1<sup>st</sup> November 2017 – 30<sup>th</sup> October 2018). **Funding level: USD 10,000.00.** Funded by Satoyama Development Mechanism (SDM), Japan.

7. *Assessing the Effects of Forest Fragmentation on Forest Cover Dynamics, Tree Species Diversity and Carbon Stock in Taita Hills, Kenya* (1<sup>st</sup> June 2016 – 30<sup>th</sup> June 2017). **Funding level: USD 12,000.00.** African Forest Forum Research Fellowship on Land Use, Land Use Change and Forestry Linked to Climate Change.
8. *Smallholder Innovation for Resilience: Strengthening Innovation Systems for Food Security in the face of Climate Change* (1<sup>st</sup> September 2012 – 30<sup>th</sup> November 2017). **Funding level: 400,000.00 Euros.** Funded by European Union.

## **11. LOCAL, REGIONAL & INTERNATIONAL APPOINTMENTS**

### **11.1. Local**

1. Board Member, St. Joseph's Nyorotis Secondary School, 2016 – Present, Chairman Finance Committee of the Board.

### **11.2. Regional**

1. Member, Forestry Research Network for Sub-Saharan Africa (FORNESA) - Biodiversity, Ecosystem Services and Biological Invasions thematic group.

### **11.3. International**

1. **Country Coordinator for Kenya : *International Network of Mountain Indigenous Peoples (INMIP)*.** INMIP is an important instrument for supporting implementation of local, national and international climate change programs and policies, and to strengthen sustainable management practices in mountain territories.
2. **Country Coordinator for Kenya: *International Partnership for the Satoyama Initiative (IPSI)*.** IPSI is an international initiative that promotes collaboration in the conservation and restoration of sustainable human-influenced natural environments (*Socio-Ecological Production Landscapes and Seascapes*) through broader global recognition of their value.
3. **Member of Editorial Board, *Open Journal of Forestry***
4. **Reviewer, *Forest Ecology and Management Journal***
5. **Reviewer, *Journal of Tropical Forest Science***
6. **Reviewer, *PLOS ONE Journal***

## **12. AWARDS AND RECOGNITION**

Vice-Chancellor's List of Honour for Excellent Academic Performance in Doctor of Philosophy in Natural Resources.

### **13. CONTRIBUTION TO KEFRI's ADVANCEMENT**

External mobilization of funds through partnerships and networks to support cutting edge research and improve research infrastructure.

### **14. MEMBERSHIP TO PROFESSIONAL BODIES**

1. Forestry Society of Kenya (FSK)
2. African Forest Forum (AFF)
3. National Environment Management Authority (NEMA) registered Lead Expert, Registration No. 10922

### **15. REFEREES**

1. Dr. Joshua Cheboiwo, Director, Kenya Forestry Research Institute, P.O. Box 20412-00200, Nairobi. Cell Phone : 0722-464469, Email : [director@kefri.org](mailto:director@kefri.org).
2. Professor Elias Maranga, Department of Natural Resources, Egerton University, P.O. Box 536-20115, Egerton. Cell Phone: 0722-694378, Email: [ekmaranga@yahoo.com](mailto:ekmaranga@yahoo.com).
3. Dr. Ben Chikamai, Executive Secretary, Network for Natural Gums and Resins in Africa, P.O. Box 64636-00620, Nairobi. Cell Phone : 0722-756483, Email : [bnchikamai@gmail.com](mailto:bnchikamai@gmail.com).