

## Curriculum Vitae

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### Dr. Ermias Aynekulu Betemariam

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## Overview

Dr Ermias is a landscape ecologist with research interest in agriculture, forestry, land degradation, landscape ecology, restoration ecology, soil carbon dynamics and spatial sciences to understand land health constraints and targeting interventions to sustain ecosystem services. He worked as a watershed management expert in small and medium scale irrigation projects in Ethiopia that he developed several technical reports on integrated watershed management to restore degraded landscapes, reduce soil erosion and protect reservoir sedimentation. He served as a lecturer and dean of the post graduate program in Mekelle University, Ethiopia that he involves in teaching and research. He is currently working as land health scientist with the Centre for International Forestry Research (CIFOR)-World Agroforestry (ICRAF) with major responsibilities of leading land health evaluation and monitoring projects across Africa. He has published more than sixty articles in peer reviewed journals mainly in areas of forestry, ecology, land use/cover dynamics, land degradation and restoration.

He holds a BSc. in Forestry (Alemaya University, Ethiopia); MSc. in Geo-information sciences and Earth observation for evaluating land degradation and restoration (ITC, Netherlands) and a PhD in Ecology and Natural Resources (University of Bonn, Germany). He served as a member of the [Science-Policy Interface](#) of the UNCCD which he promotes dialogue between scientists and policy makers on desertification, land degradation and drought (DLDD). He is contributing to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) **scoping report for a thematic assessment of the underlying causes of biodiversity loss and the determinants of transformative change and options for achieving the 2050 Vision for Biodiversity**. He is also Adjunct Assistant Professor at College of Natural Resource and Computational Sciences, Addis Ababa University, Ethiopia.

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## Education

2006 -2010      PhD, Ecology and Natural Resources, Centre for Development Research (ZEF), University of Bonn, Bonn, Germany.

Dissertation: [Forest diversity in fragmented landscapes of northern Ethiopia and implications for conservation](#)

2001- 2003      MSc, Geo-information Sciences and Earth Observations, specializing in land degradation, conservation and rehabilitation, International Institute for Geo-Information Sciences and Earth Observation, ITC, University of Twente, The Netherlands.

MSc Thesis: [Analysis of Soil-Vegetation Interaction in Relation to Soil carbon sequestration, a case study of Botswana](#)

1992- 1996 BSc, Forestry (distinction), Haramaya University, Ethiopia

### Employment record

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- 2012 to date **Land Health Scientist**, CIFOR-ICRAF, Nairobi, Kenya. (Major responsibilities: Manage land Health projects in Africa, conduct research related to land health, develop protocols and guidelines to measure and monitor land health, resource mobilization and capacity development)
- 2010 – 2012 **Post-Doctoral Fellow**, ICRAF, Nairobi, Kenya. (Major responsibilities: Develop method measure and monitor soil organic carbon stocks in tropical landscapes. Lead and participate in land health projects in Africa)
- 2000 – 2006 **Lecturer**, College of Dryland Agriculture and Natural Resources, Mekelle University, Ethiopia (Major responsibilities: teaching, research, consultancy and extension. Course thought: Dryland Forestry, Dryland Ecology, Forest Inventory and Management, Remote Sensing and GIS, Biodiversity and Wildlife management)
- 1996 – 2000 **Watershed Management Expert**, Commission for Sustainable Agriculture and Environmental Protection in Tigray, Ethiopia (Major responsibilities: Study and design Integrated Watershed Development Plans)

### Institutional responsibilities

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- 2012 to date Lead land health projects in Africa, ICRAF, Nairobi, Kenya
- 2012 to date Co-lead the soil and plant diagnostic laboratory at ICRAF, Nairobi, Kenya
- 2021 Technical support to develop G20 and UNCCD to develop strategic framework and operation plan to reverse land degradation
- 2017 to date Member of the [Science-Policy Interface](#) (SPI) for the UNCCD, Bonn, Germany (Major responsibilities: promotes dialogue between scientists and policy makers on desertification, land degradation and drought (DLDD) and provide thematic guidance on knowledge requirements for implementing the UNCCD.
- 2015 to date Focal point for the UNCCD, World Agroforestry Centre (ICRAF), Nairobi, Kenya (Major responsibilities: Coordinating UNCCD related activities including representing ICRAF at the Conference of Parties)
- 2020 – 2021 Steering Committee for Global Land Outlook 2, UNCCD (<https://www.unccd.int/actions/global-land-outlook-glo>)
- 2017 – 2021 Co-lead the restoration of degraded landscapes flagship of the Water Land and Ecosystems CGIAR research program at ICRAF, Nairobi
- 2006 Director of School of Graduate Studies, Mekelle University, Ethiopia.
- 2005 – 2006 Team leader of the PGIS (Participatory Geographic Information Systems) and Forestry research of the Irish Participatory Research project funded by the Irish Aid, Mekelle University, Ethiopia
- 2003 – 2006 Vice Dean, College of Dryland Agriculture and Natural Resources, Mekelle University, Ethiopia
- 2003 – 2004 Coordinator of the RESPONSE (Regional Food Security Policies for Natural Resource Management and Sustainable Economics) project, Mekelle University Ethiopia
- 2003 Coordinator of the Continuing Education Program, Mekelle University, Ethiopia
- 2003 Coordinator of the Forest Rehabilitation through Natural Regeneration project, Mekelle University, Ethiopia

1999 – 2000 Team leader of the Integrated Watershed Management study team of irrigation development project, Tigray Water Resource Development, Ethiopia

### Projects (Selected)

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- 2022 to date Digital Tools to boost AgroForestry ([DigitAF](#)) aiming to overcome barriers to a widespread implementation of agroforestry practices in Europe.
- 2022 to date Land, soil and crop information services ([LSC-IS](#)) in East Africa (Kenya, Rwanda, Ethiopia) (<https://lsc-hubs.org>)
- 2022 to date Transformative Land Investment ([TLI](#)) to create sustainable food systems that empower vulnerable communities, inspire civic engagement and galvanize collaborative action and innovation
- 2019 to date Excellence in Agronomy: contribute to the work package on ex-ante method development for investment prioritization of agriculture projects (<https://www.cgiar.org/initiative/II-excellence-in-agronomy-eia-solutions-for-agricultural-transformation/>)
- 2017 – 2021 [Restoring Degraded Landscapes](#): CGIAR program on Water Land and Ecosystems. The program supports governments and people to restore their degraded landscapes, enhancing ecosystem services and contributing to vibrant agroecosystems, and the benefits they provide: food, energy, clean water, income and livelihoods.
- 2011– 2020 [Land health surveillance system for smallholder cocoa in Ivory Coast](#): The project aims at building sustainable cocoa farming in Cote d'Ivoire.
- 2018 – 2019 Evidence-based Soils Agronomy for Sustainable Crop Production in Kenya: The project aims at assessing constraints of maize yield production to suggest interventions to reduce yield gap
- 2012 – 2017 [Biocarbon and Rural Development \(BIODEV\) project](#): The project aims to generate information that is critical for linking climate change mitigation efforts with those aimed to help people adapt to climate change in Burkina Faso, Mali and Sierra Leone.
- 2015 – 2017 [Building Resilience and Adaptation to Climate Extremes and Disasters \(BRACED\) Programme](#): The project aims to improve the integration of disaster risk reduction and climate adaptation methods into development approaches
- 2013 – 2016 [Improving Measurements of Agricultural Productivity through Methodological validation and Research \(LSMS-ISA\)](#): Improving the quality and relevance of agricultural statistics through method development through the Living Standards Measurement Study (LSMS) work of the World Bank.
- 2011 – 2014 [Carbon sequestration options in pastoral & agro-pastoral systems in Africa](#): The project investigates the effect of livestock grazing pressure and fire on soil carbon in Ethiopia and Burkina Faso, respectively
- 2010 – 2013 [Carbon Benefit Project: The aim of the project was to develop A Protocol for Measurement and Monitoring Soil Carbon Stocks in Agricultural Landscapes](#) (postdoctoral project)

## Peer-reviewed publications

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73. Natalia EC, Rachel C, James R, **Aynekulu E**, Fritz K, Ruth, MD, Roseline R, Sarah J, Thomas F, Diego V, Louise W, Wei Z (submitted to One Earth). Global traits of landscape approaches: types, outcomes, and international organizations involved (or missing).
72. von Fromm S, Dötterl S, Butler B, **Aynekulu E**, Berhe A, Haefele S, McGrath S P, Shepherd K, Six J, Vagen T, Winowiecki L, Trumbore S, Alison Hoyt A. (submitted). Strong variation in the potential of African soils to stabilize organic carbon. *Nature Geoscience*
71. Mponela P, **Aynekulu E**, Ebrahim M, Abate T, Abera W, Zaremba H, Elias M, Tamene L. (Accepted with major revision). Gender perspectives on the impacts of degradation and restoration on ecosystem services in Ethiopia. *Land Degradation and Development*
70. Abera W, Tamene L, Mekonnen, D, Carmona NE, Elias M, Joshi D, **Aynekulu E**. (2023). Assessing the application of gender perspectives in land restoration studies in Ethiopia using text mining. *Environmental Development*, 46: 100854. <https://doi.org/10.1016/j.envdev.2023.100854>
69. Tafesse A, Gechere, G, Asale A, Belay A, Recha JW, **Aynekulu E**, Berhane Z, Osano PM, Demissie TD, Solomon S. 2023. Determinants of maize farmers market participation in Southern Ethiopia: Emphasis on demographic, socioeconomic and institutional factors. *Cogent Food & Agriculture*, 9(1):2191850. DOI:<https://doi.org/10.1080/23311932.2023.2191850>
68. van Noordwijk M, **Aynekulu E**, Hijbeek R, Milne E, Minasny B, Saputra DD. (In press). Soils as carbon stores and sinks: expectations, patterns, processes, prospects of transitions. *Annual Review of Environment and Resources*.
67. Meli P, Schweizer D, Winowiecki LA, Chomba S, **Aynekulu E**, Guariguata MR. 2022. Mapping the information landscape of the United Nations Decade on Ecosystem Restoration Strategy for enhanced implementation. *Restoration Ecology*. <https://doi.org/10.1111/rec.13810>
66. Luedeling E, Whitney C, Wilkes A, **Aynekulu E**, Todd S, Rosenstock T S. 2022. Limitations of using simple indicators for evaluating agricultural emission reductions at farm level – evidence from Kenyan smallholder dairy production. *Journal Carbon Footprints*; 1:9. DOI: 10.20517/cf.2022.11
65. Takoung B, Heuvelink GBM, Stoorvogel JJ, Shepherd KD, **Aynekulu E**. 2022. Accounting for analytical and proximal soil sensing errors in digital soil mapping. *European Journal of Soil Science (EJSS)* 73(2) March–April 2022e13226, DOI: <https://doi.org/10.1111/ejss.13226>
64. Shiferaw W, Demissew S, Bekele T, **Aynekulu E**. 2022. Pastoralists' perception towards the invasion of *Prosopis juliflora* in Afar region, Northeast Ethiopia. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0261838>
63. Emiru NC, Recha JW, Thompson JR, Belay A, **Aynekulu E**, Manyevere A, Demissie TD, Osano PM, Hussein J, Molla MB, Mengistu GM, Solomon D. 2022. Impact of Climate Change on the Hydrology of the Upper Awash River Basin, Ethiopia. *Hydrology*, 9(1), 3. <https://doi.org/10.3390/hydrology9010003>

62. Tafesse A, Mena B, Belay A, **Aynekulu E**, Recha J W, Osano P, Darr D, Demissie T D, Endalamaw T B, Solomon D. 2021. Cassava Production Efficiency in Southern Ethiopia: The Parametric Model Analysis. *Frontiers in Sustainable Food Systems*, DOI: <https://doi.org/10.3389/fsufs.2021.758951>
61. Abay, KA, Abay MH, Amare M, Berhane G, **Aynekulu E**. 2021. [Mismatch between soil nutrient requirements and fertilizer applications: implications for yield responses](#). *Agricultural Economics*, 53:215–230, DOI: 10.1111/agec.12689
60. Hanan N P, Milne E, **Aynekulu E**, Yu Q, Anchang J. 2021. A Role for Drylands in a Carbon Neutral World? *Front. Environ. Sci.* 9:786087. DOI: <https://doi.org/10.3389/fenvs.2021.786087>
59. **Aynekulu E**, Sileshi GW, Rosenstock TS, van Noordwijk M, Tsegaye D, Koala J, Sawadogo L, Milne E, de Leeuw J, Shepherd K. 2021. No changes in soil organic carbon and nitrogen following long-term prescribed burning and livestock exclusion in the Sudan-savanna woodlands of Burkina Faso. *Basic and Applied Ecology*, 56: 165-175; <https://doi.org/10.1016/j.baae.2021.07.007>
58. Shiferaw W, Demissew S, Bekele T, **Aynekulu E**. 2021. Invasion of *Prosopis juliflora* and its effects on soil physicochemical properties in Afar National Regional State, Northeast Ethiopia. *International Soil and Water Conservation Research*, 9(4): 631-638); <https://doi.org/10.1016/j.iswcr.2021.04.003>
57. Mpanda M, Kashindye A, **Aynekulu E**, Jonas E, Rosenstock S T, Giliba A R. 2021. Forests, farms, and fallows: the dynamics of tree cover transition in the southern part of the Uluguru Mountains, Tanzania. *Land* 10(6), 571; <https://doi.org/10.3390/land10060571>
56. Birhane E, Gebregergs T, Hailemariam M, Norgrove L, **Aynekulu E**. 2021. Root colonization and spore abundance of arbuscular mycorrhizal fungi in fragmented church natural forest remnants along an altitudinal gradient in northern Ethiopia. *Microb Ecol.* <https://doi.org/10.1007/s00248-021-01744-5>
55. Mekuria A, Gebrehiwot K, Yohannes M, Norgrove L, **Aynekulu E**. 2021. Continuous resin tapping for frankincense collection accelerates longhorn beetle infestation on *Boswellia papyrifera* (Del.) Hochst in northern Ethiopia. *Heliyon* e06250. DOI: <https://doi.org/10.1016/j.heliyon.2021.e06250>
54. Tamba Y, Wafula J, Whitney C, Luedeling E, Muchiri C, Gebru Y, Yigzaw N, Mekuria A, Shepherd K, **Aynekulu E**. 2021. [Stochastic simulation of restoration outcomes for a dry afro-montane forest landscape in Northern Ethiopia](#). *Forest Policy and Economics*, 125 (102403), DO: <https://doi.org/10.1016/j.forpol.2021.102403>
53. von Fromm SF, Hoyt AM, Acquah GE, **Aynekulu E**, Berhe AA, Haefele SM, Lange M, McGrath SP, Shepherd KD, Sila AM, Six J, Towett EK, Trumbore SE, Vågen T-G, Weulow E, Winowiecki LA, Doetterl S. 2020. Continental-scale controls on soil organic carbon across sub-Saharan Africa. *SOIL* 7(1): 305-332. DOI: <https://doi.org/10.5194/soil-7-305-2021>, 2021
52. Shiferaw W, Demissew S, Bekele T, **Aynekulu E**, Pitroff, W. 2020. Analysis of composition and density of soil seed banks in Afar region rangelands, Northeast Ethiopia. *Rangelands*, 43(1): 1-8, DOI: <https://doi.org/10.1016/j.rala.2020.10.005>
51. Shiferaw W, Demissew S, Bekele T, **Aynekulu E**. 2020. Relationship between *Prosopis juliflora* invasion and livelihood diversification in the South Afar region, Northeast Ethiopia. [Regional Sustainability](#), 1: 82-92. DOI: <https://doi.org/10.1016/j.regsus.2020.09.002>

50. Batllori E, Lloret F, Aakala T, Anderegg WRL, **Aynekulu E**, Bendixsen DP, Bentouati A, Bigler C, Burk CJ, Camarero JJ, Colangelo M, Coop JD, Fensham R, Floyd ML, Galiano L, Ganey JL, Gonzalez P, Jacobsen AL, Kane JM, Kitzberger T, Linares JC, Marchetti SB, Matusick G, Michaelian M, Navarro-Cerrillo RM, Pratt RB, Redmond MD, Rigling A, Ripullone F, Sangüesa-Barreda G, Sasal Y, Saura-Mas S, Suarez ML, Veblen TT, Vilà-Cabrera A, Vincke C, Zeeman B. 2020. [Forest and woodland replacement patterns following drought-induced mortality](https://doi.org/10.1073/pnas.2002314117). PNAS. Nov 2020:202002314. DOI: <https://doi.org/10.1073/pnas.2002314117>
49. Alemayehu S, Ayana E, Dile Y, Demissie T, Yimam Y, Girvetz E H, **Aynekulu E**, Solomon D. 2020. Evaluating land suitability and potential climate change impacts on Alfalfa (*Medicago sativa*) production in Ethiopia. *Atmosphere* 11(10):1124. DOI: <https://doi.org/10.3390/atmos11101124>
48. **Aynekulu E**, Suber M, van Noordwijk M, Arango J, Roshetko JM, Todd S. Rosenstock TS. 2020. [Carbon storage potential of silvopastoral systems of Colombia](https://doi.org/10.3390/land9090309). *Land* 9(9), 309; <https://doi.org/10.3390/land9090309>
47. Birhane E, Gebretsadik KF, Taye G, **Aynekulu E**, Rannestad MM, Norgrove L. 2020. [Effects of Forest Composition and Disturbance on Arbuscular Mycorrhizae Spore Density, Arbuscular Mycorrhizae Root Colonization and Soil Carbon Stocks in a Dry Afromontane Forest in Northern Ethiopia](https://doi.org/10.3390/d12040133). *Diversity* 12(4) 133, DOI: <https://doi.org/10.3390/d12040133>
46. McGonigle DF, Nodari GR, Phillips R, **Aynekulu E**, Estrada Carmona N, Jones S, Koziell I, Luedeling E, Remans R, Shepherd K, Wiberg D, Whitney C and Zhang W. 2020. [A Knowledge Brokering Framework for Integrated Landscape Management](https://doi.org/10.3389/fsufs.2020.00013). *Front. Sustain. Food Syst.* 4:13. DOI: <https://doi.org/10.3389/fsufs.2020.00013>
45. Rosenstock TS, Dawson IK, **Aynekulu E**, Chomba S, Degrande A, Fornace K, Jamnadass R, Kimaro A, Kindt R, Lamanna C, Malesu M, Mausch K, McMullin S, Murage P, Namoi N, Njenga M, Nyoka I, Paez Valencia AM, Sola P, Shepherd K, Steward P. 2019. A Planetary Health Perspective on Agroforestry in Sub-Saharan Africa. *One Earth*, 1(3):330-344. DOI: <https://doi.org/10.1016/j.oneear.2019.10.017>
44. Shiferaw W, Bekele T, Demissew S, **Aynekulu E**. 2019. *Prosopis juliflora* invasion and environmental factors on density of soil seed bank in Afar Region, Northeast Ethiopia. *Journal of Ecology and Environment*, 43(41). DOI: <https://doi.org/10.1186/s41610-019-0133-4>
43. Shiferaw W, Demissew S, Bekele T, **Aynekulu E**. 2019. [Effects of \*Prosopis juliflora\* Invasions on land use/cover change in South Afar region, Northeast Ethiopia](https://doi.org/10.2989/20702620.2018.1555947). *ADVANCE RESEARCH JOURNAL OF MULTIDISCIPLINARY DISCOVERIES*, 34 (1): 26-43.
42. Amara E, Heiskanen J, **Aynekulu E**, Pellikka KE. 2019. [Relationship between carbon stocks and tree species diversity in a humid Guinea savannah landscape in Northern Sierra Leone](https://doi.org/10.2989/20702620.2018.1555947). *Southern Forests*. DOI: <https://doi.org/10.2989/20702620.2018.1555947>
41. Abrha H, Birhane E, Zenebe A, Girma A, Hagos H, **Aynekulu E**. (2018). [Modeling the Cochineal \(\*Dactylopius coccus\*\) and Climate change induced factors on the future distribution of Cactus \(\*Opuntia ficus-indica\*\) in northern Ethiopia](https://doi.org/10.1080/15257529.2018.15257529). *Journal of the Professional Association for Cactus Development*, 20:128-150.
40. Takoutsing B, Weber JC, Martin JAR, Shepherd K, **Aynekulu E** Sila A. 2018. [An assessment of the variation of soil properties with landscape attributes in the highlands of Cameroon](https://doi.org/10.1002/ldr.3075). *Land Degradation and Development*, DOI: <https://doi.org/10.1002/ldr.3075>



39. Gebregziabher D, Soltani A, Hofstad O, **Aynekulu E**. 2018. Ensuring rural energy security: a path to sustainable land restoration movement in Africa. *Nature & Fauna*, 32(1): 75-78.
38. Mekuria A, Gebrehiwot K, Yohannes M, **Aynekulu E**, Manjur B, Norgrove L. 2018. An exploratory survey of long horn beetle damage on the dryland flagship tree species *Boswellia papyrifera* (Del.) Hochst. *Journal of Arid Environments*, 152:6:11. DOI: <https://doi.org/10.1016/j.jaridenv.2018.01.011>
37. Mokria M, Mekuria W, Gebrekirstos A, **Aynekulu A**, Belay B, Gashaw T, Bräuning A. 2018. Mixed-species allometric equations and estimation of aboveground biomass and carbon stocks in restoring degraded landscapes in northern Ethiopia. *Environmental Research Letters* 3(2): 3 024022
36. Lohbeck M, Winowiecki LA, **Aynekulu E**, Okia K, Vågen T. 2017. [Trait-based approaches for guiding the restoration of degraded agricultural landscapes in East Africa](https://doi.org/10.1111/1365-2664.13017). *Journal of Applied Ecology*, 55(1): 59-68, DOI: <https://doi.org/10.1111/1365-2664.13017>
35. **Aynekulu E**, Mekuria W, Tsegaye D, Feyissa K, Angassa A, de Leeuw J, Shepherd K. 2017. Long-term livestock enclosure did not affect soil carbon in southern Ethiopian rangelands. *Geoderma*, 307 (91-7). DOI: <http://dx.doi.org/10.1016/j.geoderma.2017.07.030>
34. Tamene D, Adimassu Z, **Aynekulu E**, Yaekob T. 2017. [Estimating landscape susceptibility to soil erosion using a GIS-based approach in Northern Ethiopia](https://doi.org/10.1016/j.iswcr.2017.05.002). *International Soil and Water Conservation Research*, DOI: <http://dx.doi.org/10.1016/j.iswcr.2017.05.002>
33. Koala J, Sawadogo L, Savadogo P, **Aynekulu E**, Said M. 2017. Allometric equations for belowground biomass of four key woody species in West African savanna-woodlands. *Silva Fennica*, 51 (3) (article id 1631. DOI: <https://doi.org/10.14214/sf.163>
32. Heiskanen J, Liu J, Valbuena R, **Aynekulu E**, Packalen P, Pellikka P. 2017. Remote sensing approach for spatial planning of land management interventions in West African savannas. *Journal of Arid Environments*, 140:29-41. DOI: <https://doi.org/10.1016/j.jaridenv.2016.12.006>
31. Musyimi Z, Said MS, Zida D, Rosenstock TS, Udelhoven T, Savadogo P, de Leeuw J, **Aynekulu E**. 2017. [Evaluating fire severity in Sudanian ecosystems of Burkina Faso using Landsat 8 satellite images](https://doi.org/10.1016/j.jaridenv.2016.11.005). *Journal of Arid Environments*, 139:95–109. DOI: <https://doi.org/10.1016/j.jaridenv.2016.11.005>
30. Iiyama M, Derero A, Kelemu K, Muthuri C, Kinuthia R, **Ayenkulu E**, Kiptot E, Hadgu K, Mowo J, Sinclair F. 2017. Understanding patterns of tree adoption on farms through characterization: A case study of semi-arid and sub-humid agroecosystems of Ethiopia. *Agorofrestry Systems*, 91(2): 271-293, DOI: 10.1007/s10457-016-9926-y
29. Biedemariam M, Hadgu K, Fenta AA, **Aynekulu E**, Gebrehiwot K, Birhane E. 2017. Landscape level rehabilitation for improved agricultural productivity and ecosystem services in Abreha-we-Atsibeha, northern Ethiopia. *Journal of the Drylands* 7(1): 633-643
28. Diby L, Kahia J, Kouamé, C, **Aynekulu E**. 2017. Tea, Coffee, and Cocoa, in: Thomas, B., Murray, B.G., Murphy, D.J. (Eds.), *Encyclopedia of Applied Plant Sciences* (Second Edition), 3: 420–425, <https://doi.org/10.1016/B978-0-12-394807-6.00179-9>
27. **Aynekulu E**, Aerts R, Denich M, Negussie A, Friis I, Demissew S, Boehmer HJ. 2016. Plant Diversity and Regeneration Dynamics in a Disturbed Isolated Afromontane Forest in Ethiopia. *Folia Geobotanica*, 51(2), 115-127. DOI: 10.1007/s12224-016-9247-y

26. Valbuena R, Heiskanen J, **Aynekulu E**, Pitkänen S, Packalen P. 2016. Sensitivity of above-ground biomass estimates to height-diameter modelling in mixed-species West African woodlands. [PLOS ONE](#). DOI:10.1371/journal.pone.0158198
25. Milne E, **Aynekulu E**, Bationo A, Batjes NH, Boone R, Conant R, Davies J, Hanan N, Hoag D, Herrick JH, Knausenberger W, Neely N, Njoka J, Ngugi M, Parton B, Paustian K, Reid R., Said M, Shepherd K, Swift D, Thornton P, Williams S. 2016. Grazing lands in Sub-Saharan Africa and their potential role in climate change mitigation: What we do and don't know. [Environmental Development](#), 19:50-74. DOI: <https://doi.org/10.1016/j.envdev.2016.06.001>
24. Takoutsing B, Weber J, **Aynekulu E**, Martín JAR, Shepherd K, Sila A, Tchoundjeu Z, Diby L. 2016. Assessment of soil health indicators for sustainable production of maize in smallholder farming systems in the highlands of Cameroon. [Geoderma](#), 276:64–73, <https://doi.org/10.1016/j.geoderma.2016.04.027>
23. Liu J, Heiskanen J, **Aynekulu E**, Maeda EE, Pellikka PKE. 2016. Land Cover Characterization in West Sudanian Savannas Using Seasonal Features from Annual Landsat Time Series. [Remote Sens.](#), 8, 365; doi:10.3390/rs8050365
22. Kimaro AA, Mpanda M, Rioux J, **Aynekulu E**, Shaba S, Thiong'o M, Mutuo P, Abwanda S, Shepherd K, Neufeldt H, Rosenstock TS. 2016. Is conservation agriculture 'climate-smart' for maize farmers in the highlands of Tanzania? [Nutrient Cycling in Agroecosystems](#), 105(3): 217–228. DOI: 10.1007/s10705-015-9711-8
21. Koala J, Sawadogo L, Savadogo Zida D, **Aynekulu E**, Saïd M, Nacro HB. 2015. Cumulative effects of 20-years of livestock grazing, prescribed early fire and selective tree cutting on below ground biomass in sudanian savanna woodland, west Africa. [International Journal of Current Research](#), 7(3): 13603-13613. DOI: <http://dx.doi.org/10.4314/ijbcs.v8i6.6>
20. Towett EK, Shepherd KD, Sila A, **Aynekulu E**, Cadisch G. 2015. Mid-Infrared and Total X-Ray Fluorescence Spectroscopy Complementarity for Assessment of Soil Properties. *Soil Sci. Soc. Am. J.* doi:10.2136/sssaj2014.11.0458.
19. Negussie A, Degerickx J, Norgrove Achten WMJ., Hadgu KM, Aynekulu E, Muys B. 2015. In-situ leaf litter decomposition of *Jatropha curcas* L.: effects of plant accession, spacing and pruning management. [Biomass and Bioenergy](#), 81:505-513, <https://doi.org/10.1016/j.biombioe.2015.08.004>.
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17. Negussie A, Nacro S, Achten WMJ, Norgrove L, Kenis M, Hadgu KM, **Aynekulu E**, Hermy M, Muys B. 2015. Insufficient evidence of *Jatropha curcas* L. invasiveness: experimental observations in Burkina Faso, West Africa. [BioEnergy Research](#) 8(2): 570-580, DOI 10.1007/s12155-014-9544-3.
16. Ojoyi M, Mutanga O, Odindi J, **Aynekulu E**, Abdel-Rahman E. 2015. The effect of forest fragmentation on tree species abundance and diversity in the Eastern Arc Mountains of Tanzania. [Applied Ecology and Environmental Research](#), 13(2): 307-324. DOI: 10.15666/aeer/1302\_307324
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6. Tsegaye D, Moe SR, Vedeld PO, **Aynekulu E**. 2010. Land-use/cover dynamics in Northern Afar rangelands, Ethiopia. *Agriculture, Ecosystem and Environment*, 139: 174-180. DOI: <https://doi.org/10.1016/j.agee.2010.07.017>
5. **Aynekulu E**, Denich M, Tsegaye D. 2009. Regeneration Response of *Juniperus procera* and *Olea europaea* subsp *cuspidata* to Enclosure in a Dry Afromontane Forest in Northern Ethiopia. *Mountain Research and Development*, 42: 143-152. DOI: [10.1659/mrd.1076](https://doi.org/10.1659/mrd.1076)
4. **Aynekulu E**, Kassawmar T, Tamene L. 2008. Applicability of ASTER imagery in mapping land use /cover as a basis for biodiversity studies in drylands of northern Ethiopia. *African Journal of Ecology*, 46 (Suppl. 1): 19-23. DOI: [10.1111/j.1365-2028.2008.00925.x](https://doi.org/10.1111/j.1365-2028.2008.00925.x)
3. Aerts A, November E, Maes W, Van der Borgh I, Negussie, A, **Aynekulu E**, Hermy M, Muys B. 2008. In situ persistence of African wild olive and forest restoration in degraded semiarid savanna. *Journal of Arid Environments*, 6: 1131-1136. DOI: [10.1016/j.jaridenv.2007.11.009](https://doi.org/10.1016/j.jaridenv.2007.11.009)
2. Tenkir E, Bekele T, Nemomissa S, **Aynekulu E**. 2007. Dry Afromontane forest ecosystem restoration: Assessment of natural regeneration of woody species (A case of Dodola forest, Ethiopia). *Discovery and Innovation*, 9: 323-329.
1. **Aynekulu E**, Wubneh W, Birhane E, Begashaw N. 2006. Monitoring and Evaluating Land Use/Land Cover Change Using Participatory Geographic Information System

(PGIS) Tools: A Case Study of Begasheka Watershed, Tigray, Ethiopia. EJISDC, 25(3): 1-10. DOI: [10.1002/j.1681-4835.2006.tb00164.x](https://doi.org/10.1002/j.1681-4835.2006.tb00164.x)

## Other publications

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31. Chabi A, Arinloye DA, Vagen TG, Aynekulu E, Winowiecki LA. 2022. Including soil organic carbon into nationally determined contributions: Insights from Senegal. AICCRA Policy Brief. Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA). <https://hdl.handle.net/10568/126516>
30. Diwediga B, Chabi A, Arinloye DA, Chesterman S, Vagen TG, Aynekulu E, Winowiecki LA. 2022. Including soil organic carbon into nationally determined contributions: Insights from Ghana. AICCRA Policy Brief. Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA). <https://hdl.handle.net/10568/126517>
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28. Tamba, Y., Wafula, J., Magaju, C., St-Jacques, B., Stiem-Bhatia L., Arias-Navarro C., Aynekulu, E. and Winowiecki, L., 2021. A Review of the Participation of Smallholder Farmers in Land-based Carbon Payment Schemes. TMG and ICRAF Working Paper. <https://doi.org/10.35435/2.2021.4>
27. Dick Frederiksen, S., Elias, M., Zaremba, H., **Aynekulu, E.** 2021. Developing gender-equitable ecological restoration initiatives: A synthesis of guidance to improve restoration practice. The Alliance of Bioversity International and CIAT, Rome. <https://cgspace.cgiar.org/handle/10568/117868>
26. Gobezie T B, **Aynekulu E**, Biswas A. 2021. The Frontiers in Soil Science Research: An African Perspective. In: Rakshit A., Singh S., Abhilash P., Biswas A. (eds) Soil Science: Fundamentals to Recent Advances. Springer, Singapore. [https://doi.org/10.1007/978-981-16-0917-6\\_31](https://doi.org/10.1007/978-981-16-0917-6_31)
25. Abay KA, Abay MH, Amare M, Berhane G, **Aynekulu E.** 2021. Mismatch between soil nutrient requirements and fertilizer applications: implications for yield responses in Ethiopia. [IFPRI Discussion Paper 02031](#)

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23. Tamene L, Le Q A, Gudeta S, **Aynekulu E**, Kizito F, Bossio D, Paul Vlek P. 2019. [Restoring Degraded Landscapes for Improved Ecosystem Services using Long-term Remote Sensing and Climate Data](#): in Climate-smart Agriculture: Enhancing Resilient Agricultural Systems, Landscapes and Livelihoods in Ethiopia and Beyond. 2019. Kiros Meles Hadgu, K et al (eds), World Agroforestry (ICRAF), Nairobi, Kenya.
22. **Aynekulu E**, Suber M, Zomer R, Mboi D, Arango J, Rosenstock T. 2019. Quantification of climate change mitigation benefits from expansion of silvopastoral systems: An analytical proof of concept for Colombia. CCAFS Working Paper No. 295. Wageningen, the Netherlands. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS); (<https://cgspace.cgiar.org/handle/10568/106727>).
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20. FAO. 2019. [Measuring and modelling soil carbon stocks and stock changes in livestock production systems](#) – A scoping analysis for the LEAP work stream on soil carbon stock changes. Rome. 84 pp.
19. Gourlay S, **Aynekulu E**, Carletto C, Shepherd K. 2017. [Spectral Soil Analysis & Household Surveys](#). Washington, DC: World Bank.
18. Gourlay S, **Aynekulu E**, Shepherd K, Carletto C. 2017. Collecting the Dirt on Soils Advancements in Plot-Level Soil Testing and Implications for Agricultural Statistics. [Policy Research working paper](#); no. WPS 8057. Washington, D.C. : World Bank Group.
17. **Aynekulu E**, Lohbeck M, Nijbroek R, Ordóñez JC, Turner KG, Vågen T, Winowiecki L. 2017. Review of methodologies for land degradation neutrality baselines: Sub-national case studies from Costa Rica and Namibia. CIAT Publication No. 441. International Center for Tropical Agriculture (CIAT) and World Agroforestry Center (ICRAF), Nairobi, Kenya. 58 p., <http://hdl.handle.net/10568/80563>.
16. **Aynekulu E**, Chacha R, Mboi D, Okello A, Mohamed AM, Mahadi Y. 2017. Participatory Grazing Land Resource Mapping in Lower Tana Basin, Kenya. World Agroforestry Centre (ICRAF) and International Centre for Conservation of Nature (IUCN), Nairobi, Kenya.
15. Sehmi R, Mbow C, Pitkanen S, Cross H, Berry N, Riddell M, Heiskanen J, **Aynekulu E**. 2016. Replicable tools and frameworks for bio-carbon developments in West Africa. ICRAF Working paper No. 237. Nairobi, World Agroforestry Centre. DOI: <http://dx.doi.org/10.5716/WPI6138.PDF>.
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12. Kuyah S, Thiong'o, M, Mutuo PM, Abwanda S, **Aynekulu E**, Rosenstock TS. 2015. [Measuring Greenhouse Gas Emissions, Carbon Stocks and Stock Changes in Smallholder Farming Systems](#). World Agroforestry Centre, Nairobi, Kenya. 68 p.
11. **Aynekulu E**, Shepherd KD. 2015. Measuring rangeland health and soil carbon in Africa. Milne, E., Hoag, D., Boem R. (Eds), [In Grazing Lands, Livestock and Climate Resilient Mitigation in Sub-Saharan Africa: The State of the Science](#) (pp. 100).
10. Beedy T, Njoloma J, **Aynekulu E**, Coe R, Takoutsing B, Shepherd K. 2015. Land health surveillance for four sites in Malawi, Working Paper Number 192, Nairobi, World Agroforestry Centre. DOI: <http://dx.doi.org/10.5716/WP14254.PDF>
9. Diby L, Kouassi G, N'Guessan MP, Yao E, Oro F, **Aynekulu E**, Kassin E, Kouamé C, Coe R, Shepherd K. 2015. Cocoa Land Health Surveillance: 2015. An evidence-based approach to sustainable management of cocoa landscapes in the Nawa region, South-West Côte d'Ivoire. Working Paper 193. Abidjan, World Agroforestry Centre. DOI: <http://dx.doi.org/10.5716/WP14255.PDF>.
8. Rosenstock TS, Mpanda M, Kimaro A, Luedeling E, Kuyah S, **Aynekulu E**, Freeman OE, Thiongo M, Abwanda S, Mutuo P, Mativo J, Shaba S, Kirui J, Franzel S, Neufeldt H, Shepherd K, Neely K. 2015. Science to support climate-smart agricultural development: concepts and results from the MICCA pilot projects in East Africa. pp. 47, Food and Agriculture Organization of the United Nations (FAO) (<http://www.fao.org/3/a-i4167e.pdf>)
7. Steiner JL, Franzluebbbers AJ, Neely C, Ellis T, **Aynekulu E**. 2014. Enhancing soil and landscape quality in smallholder grazing systems. In Lal, R. (Ed.), [Soil Management of Smallholder Agriculture](#) pp 63-112, DOI: 10.1201/b17747-5.
6. Kimaro AA, Birhane E, Mowo J, **Betemariam E**, Mpanda M, Hadgu KM. 2014. Soil fertility management (pp. 71- 78). In De Leeuw J, Njenga M, Wagner B, Iiyama M. (Eds.). Treesilience: An assessment of the resilience provided by trees in the drylands of Eastern Africa. Nairobi, Kenya. ICRAF (pp. 166).
5. Heiskanen J, Pellikka P, **Betemariam EA**, Packalen P. 2013. Field measurement guidelines for aboveground biomass and fuel wood stocks. Building Biocarbon and Rural Development in West Africa (BIODEV). World Agroforestry Centre (ICRAF). <http://apps.worldagroforestry.org/downloads/Publications/PDFS/RP16065.pdf>
4. **Aynekulu E**, Vagen T-G, Shepherd K, Winowiecki L. 2011. A protocol for measurement and monitoring soil carbon stocks in agricultural landscapes. Version 1.1. World Agroforestry Centre, Nairobi
3. Tsegaye D, Balehegn M, Gebrehiwot K, Haile M, Gebresamuel G, Tilahun M, **Aynekulu E**. 2007. The Role of Garsa (*Dobera glabra*) for Household Food Security at Times of Food Shortage in Aba`ala Wereda, North Afar: Ecological Adaptation and Socio-economic value. pp.42
2. **Aynekulu E**, Atakilti S, Ejersa A. 2000. Small-scale reservoir sedimentation rate analysis for a reliable estimation of irrigation schemes economic lifetime. A case study of Adigudom area, Tigray, northern Ethiopia
1. **Aynekulu E**. 1998. Watershed management feasibility report, Eastern Tigray water supply project. Commission of Sustainable Agriculture and Environmental Rehabilitation in Tigray, northern Ethiopia

### Published data

- Ermias, Aynekulu; Gudeta W. Sileshi; Todd S. Rosenstock; Meine van Noordwijk; Diress Tsegaye; Jonas, Koala; Louis, Sawadogo; Eleanor Milne; Jan de Leeuw; Keith, Shepherd, 2022, "No changes in soil organic carbon and nitrogen following long term prescribed burning and livestock exclusion in the Sudan savanna woodlands of Burkina

Faso", <https://doi.org/10.34725/DVN/5RHDQC>, World Agroforestry - Research Data Repository, DRAFT VERSION, UNF:6:kv99g52bJG2m3xq25nPY3g== [fileUNF]

- Aynekulu, Ermias; Sitienei, Ruth; Wood, Stephen; Shepherd, Keith, 2021, "Evidence-based Soils Agronomy for Sustainable Crop Production in Muranga County, Kenya", <https://doi.org/10.34725/DVN/RTDZH8>

### Conference participations and presentations (selected)

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Host a session on [restoration of degraded landscapes in Africa: Lessons for the future. GLF Africa: Restoring Africa's Drylands](#) 2-3 June 2021

**Aynekulu E.**, Winoweicki L, Vagen TG. 2018. Health living soils: sustaining increased productivity and ecosystem services, 4 per 1000 Africa Symposium, Johannesburg <https://www.slideshare.net/agroforestry/healthy-living-soils-sustaining-increased-productivity-and-ecosystem-services>

**Aynekulu E.** 2017. Collecting the Dirt on Soils: Advancements in Plot-Level Soil Testing and Implications for Agricultural Statistics. The Annual Bank Conference on Africa: The Challenges and Opportunities of Transforming African Agriculture University of California, Berkeley

**Aynekulu E.** 2017. Land Restoration for Peace and profit. Conference of Parties (COP13), UNCCD, Ordos, China

**Aynekulu E.** 2017. [Integrated approaches for multifunctional landscapes](#). UNCCD COP13, Ordos, China

**Aynekulu E**, Shepherd K, Garrity D. 2015. [Land health surveillance and Agroforestry in support of land restoration in Africa](#). UNCCD COP 12, Ankara, Turkey

**Aynekulu E**, Crletto, C, Gourlay S, Shepherd K. 2018. [Collecting the Dirt on Soils: Advancements in Plot-Level Soil Testing and Implications for Agricultural Statistics](#). 29<sup>th</sup> International Conference of Agricultural Economics, Milan, Italy

**Aynekulu E**, Shepherd K. 2013. [Cost effective tools for soil organic carbon monitoring](#). EGU, the European Geosciences Union, Vienna

**Aynekulu E.** 2013. [Applications of soil spectroscopy on Land Health Surveillance](#): Hands- on soil Infrared Spectroscopy Training Course on Getting the best out of light. World Agroforestry, Nairobi

**Aynekulu E**, Shepherd K, Garrity D.2012. Land health surveillance & Agroforestry in support of land restoration in Africa. Conference of Parties (COP12), UNCCD, Ankara, Turkey

**Aynekulu E**, Vagen T, Winowiecki L, Shepherd K. 2011. Methods for cost-effective monitoring of soil organic carbon as a key indicator of soil condition across landscapes. Poster presented at "CIALCA 2011: Challenges and Opportunities for Agriculture Intensification of the Humid Highland Systems of sub-Saharan Africa. Kigali, Rwanda, 24-27/10/2011. Book of Abstracts pp.62.

### Communication products (selected)

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- Partnering with farmers is key to land restoration success (commentary) OPED publication by Mongabay: <https://news.mongabay.com/2022/05/partnering-with-farmers-is-key-to-land-restoration-success-commentary/>
- Managing soil organic carbon and nitrogen in African grazing land. 2021. <https://www.worldagroforestry.org/blog/2021/09/08/managing-soil-organic-carbon-and-nitrogen-african-grazing-land>
- Predicting economic impact from restoring forests and landscapes: lessons from Ethiopia. 2021. <https://www.worldagroforestry.org/blog/2021/02/18/predicting-economic-impact-restoring-forests-and-landscapes-lessons-ethiopia>

- [More abundant tree species unlikely to return after droughts](https://www.worldagroforestry.org/blog/2020/11/10/more-abundant-tree-species-unlikely-return-after-droughts). 2020.
- <https://www.worldagroforestry.org/blog/2020/11/10/more-abundant-tree-species-unlikely-return-after-droughts>
- **Aynekulu E.** 2020. UNCCD Podcast series: <https://soundcloud.com/unccd/unccdpodcastep1>
- Latin America learning how much carbon can be stored in grazing land: <https://www.worldagroforestry.org/blog/2020/09/07/latin-america-learning-how-much-carbon-can-be-stored-grazing-land>
- Estrada-Carmona N, Remans R, **Aynekulu E**, Abera W, Elias M. 2020. Semantics and words matter for analyzing gender and social inclusivity in development projects. <https://wle.cgiar.org/thrive/2020/07/24/semantics-and-words-matter-analyzing-gender-and-social-inclusivity-development>
- **Aynekulu E.** 2019. Ethiopia is making maps to improve soil health: 2019. <https://theconversation.com/ethiopia-is-making-maps-to-help-improve-soil-health-123101>
- **Aynekulu E**, Gadeberg M. 2019. Diagnosing soil health can treat hunger and ailing landscapes. <https://wle.cgiar.org/thrive/2019/12/03/diagnosing-soil-health-can-treat-hunger-and-ailing-landscapes>
- Protecting Africa's Drylands Key to the Continent's Future. 2017. Inter Press Service News Agency: <https://www.ipsnews.net/2017/08/protecting-africas-drylands-key-continents-future/>

## Trainings

31/03 – 1/04/2008	Certificate of Participation in the training on “Mountain Forestry Development: Working Effectively at the Interface of Forest Science and Forest Policy” organized by The Global Network for Forest Science Cooperation (IUFRO), Vienna, Austria
Winter 2006/7	Certificate of Participation in the interdisciplinary course “Concepts and Theories of Development” Organized by International Doctoral Studies Program for Development Research of ZEF, Bonn, Germany
24 – 28/06/2006	Certificate of Participation in the training on “SAR data processing”. Organized by the European Space Agency, ESA-ESRIN, Frascati, Italy
12 – 23/09/2005	Certificate of Participation in the training on “Spectroscopy and Dynamic GIS Modelling of Earth Surface Processes for Nature Conservation”, organized by ITC, International Livestock Research Institute (ILRI), Nairobi, Kenya
3 – 5/01/2005	Certificate of Participation in the training on “Air Quality Management” organized by Bowling State University (USA) and Ethiopian Environmental Protection Authority (EPA), Addis Ababa, Ethiopia
16 – 26/02/2004	Certificate of Participation in the training on “Management by Objectives”, organized by MDF training and consultancy, Axum, Ethiopia

## Professional awards and fund raising

2022	Land, soil and crop (LSC) information services in East Africa ( <a href="https://lsc-hubs.org">https://lsc-hubs.org</a> ), Euro 280,000
2022	DigitAF (Digital Tools to help AgroForestry meet climate, biodiversity and farming sustainability goals: linking field and cloud), Euro 120,000



- 2019 – 2020 [Restoring Degraded Landscapes](#) CGIAR program on Water, Land and Ecosystems; USD 400,000
- 2006 – 2010 German Academic Exchange Service (DAAD) doctoral fellowship
- 2013 Contributed to the [Improving Measurements of Agricultural Productivity through Methodological validation and Research \(LSMS-ISA\) project; USD 715,029](#)
- 2001– 2003 Netherlands organization for international cooperation in higher education (NUFFIC) MSc fellowship
- 1996 Certificate of recognition for fund raising for improving the university zoo, Alemaya University

### Professional activities

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- Land Degradation & Development - occasional reviewer
- African Journal of Ecology - occasional reviewer
- International Journal of Remote Sensing - occasional reviewer
- Journal of Arid Environments - occasional reviewer
- Co-supervise MSc and PhD studies
- Serve as external examiner for PhD works for Addis Ababa University and University of Life Sciences, Norway.

### PhD students advised

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1. Irene Awino Ojuok (Kenya), Research topic: Farmer Managed Natural Regeneration (FMNR): Rehabilitation of degraded smallholder lands in Baringo County, Kenya ([https://www.zef.de/index.php?id=2232&tx\\_zefportal\\_staff\[ref\]=2252&tx\\_zefportal\\_staff\\_info\[uid\]=2008&tx\\_zefportal\\_staff\\_profile\[uid\]=2008&no\\_cache=1](https://www.zef.de/index.php?id=2232&tx_zefportal_staff[ref]=2252&tx_zefportal_staff_info[uid]=2008&tx_zefportal_staff_profile[uid]=2008&no_cache=1)), University Bonn
2. Eyob Tenkir (Ethiopia), Ecosystem service of Dryland and Highland Urban and peri-urban forest of Adama and Addis Ababa City, Ethiopia, Addis Ababa University
3. Bertin Takoutsing (Cameroon), Research topic: ACCOUNTING FOR ERRORS IN SOC ESTIMATES INTRODUCED BY PROXIMAL SENSING METHODS (<https://www.wur.nl/en/Persons/Bertin-AB-Bertin-Takoutsing-MSc.htm>); Wageningen University Research
4. Sophie F. von Fromm (Germany). soil carbon dynamics in tropical und subtropical regions. [Max Planck Institute for Biogeochemistry Jena](#)
5. Edward Amara (Sierra Leone), Assessment of land use and cover change on ecosystem services and state of conservation areas in northern Sierra Leone (<https://researchportal.helsinki.fi/en/persons/edward-amara-2>) University of Helsinki Research
6. Wakshum Shiferaw (Ethiopia), Research topic: Ecological Impacts and Encroachment of *Prosopis juliflora* (Sw.) DC (Fabaceae) in Afar National Regional State, Northeast Ethiopia (<http://213.55.95.56/bitstream/handle/123456789/26037/Wakshum%20Shiferaw%202020.pdf?sequence=1&isAllowed=y>), Addis Ababa University
7. Jonas Koala (Burkina Faso), Research topic: Influences of anthropogenic disturbances on carbon stocks of savannah ecosystems in the Sudanian zone of Burkina Faso (Influences des perturbations anthropiques sur le stock de carbone dans les écosystèmes de savane en zone soudanienne du Burkina Faso), Polytechnic University of Bobo-Dioulasso, Burkina Faso.

## Foreign country work experience

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**Long term:** Kenya (2010 to date)

**Short term:** Botswana, Burkina Faso, Chad, Cote de'Ivoire, Mali, Rwanda, Sierra Leone, Tanzania, and Uganda

## Professional membership

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- The Biological Society of Ethiopia, P.O. Box 31819, Addis Ababa, Ethiopia (<http://www.sc.aau.edu.et/BSE/contactus.html>)
- African Forest Forum (AFF), c/o World Agroforestry Centre (ICRAF), United Nations Avenue, Gigiri P.O. Box 30677-00100, Nairobi, Kenya (<http://www.afforum.org>)
- British Ecological Society (<https://www.britishecologicalsociety.org>)
- Association of American Geographers (AAG), 1710 16th Street NW, Washington, DC 20009-3198, USA. (<http://www.aag.org>)