CURRICULUM VITAE

Idrissa Sawadogo
PhD Candidate in Climate Change and Biodiversity
African Centre of Excellence on Climate Change and Biodiversity (ACE-CCB)/WASCAL Centre
Université Félix Houphouët-Boigny, Côte d'Ivoire
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PROFESSIONAL PROFILE

Environmental scientist and PhD candidate with expertise in climate change adaptation, biodiversity conservation, rangeland ecology, remote sensing, GIS and ecological modelling. Experienced in interdisciplinary research on pastoral systems across West Africa, integrating field ecology, geospatial analysis and climate data to support evidence-based natural resource management. Author of five peer-reviewed publications and active contributor to international research collaborations.

EDUCATION BACKGROUND

PhD in Climate Change and Biodiversity, 2023-present

African Centre of Excellence on Climate Change and Biodiversity (ACE-CCB)

Université Félix Houphouët-Boigny, Côte d'Ivoire

MSc in Tropical Plant Biodiversity, 2018-2020

University Joseph Ki-Zerbo, Burkina Faso

Engineering Degree (Waters, Forests and Environment), 2015-2018

University of Dédougou, Burkina Faso

BSc in Biochemistry and Microbiology, 2012-2015

University Joseph Ki-Zerbo, Burkina Faso

RESEARCH EXPERIENCE

- **December 2025 to June 2026 Visiting Research Fellow**
  Natural Resources Institute (NRI), University of Greenwich, UK

  • Led a remote sensing and field-based study of forage biomass dynamics in Sahelian rangelands.
  • Collected herbaceous and woody biomass data and calibrated Landsat indices using GAMs.
  • Reconstructed 1995-2025 biomass trends and assessed climate controls using rainfall and temperature data.
  • Modelled non-linear vegetation responses to climate variability and mapped degradation and recovery dynamics.

- **2023-2025 Research Affiliate**

International Livestock Research Institute (ILRI), Senegal
(Project: AICCRA-Accelerating Impacts of CGIAR Climate Research for Africa)

- Conducted interdisciplinary research on herbaceous and woody forage species consumed by livestock in Sahelian pastoral systems.
- Assessed forage species availability and quality in relation to climate variability and land-use change.
- Analysed pastoral mobility and transboundary transhumance patterns under changing environmental and governance conditions.
- Investigated interactions between climate variability, natural resource governance, and pastoral resource dynamics.
- Applied satellite imagery and spatial modelling to assess impacts of climate and land-use change on pastoral resources and mobility.

PROFESSIONAL EXPERIENCE

2022-2023 Teaching Assistant / Lecturer in Botany and Biodiversity, University Joseph Ki-Zerbo, Burkina Faso

- Delivered practical sessions in botany and biodiversity at undergraduate level.
- Supervised student fieldwork and laboratory activities.
- Supported student assessment and academic guidance.

2021-2022 Secondary School Teacher (Biology and Mathematics), Provincial High School of Absouya, Burkina Faso

2019-2021 Monitoring and Evaluation Engineer, CNSF, Burkina Faso

- Monitoring and Evaluation
- Performance Indicator Analysis
- Results-based Management.

February to October 2018 Research Intern
National Centre for Scientific and Technological Research (CNRST), Burkina Faso

- Supported ecosystem management and environmental research projects.
- Assisted in data collection and analysis for ecological studies.

PUBLICATIONS

Peer-Reviewed Publications

1- Sawadogo I, Bayen P, Balima LH, Sanou CL, Kouassi FA, Worou ON., 2025. Climate-driven shifts in the geographic distribution of fodder trees in West Africa's Grazing landscapes. *Trees, Forests and People.22*. https://doi.org/10.1016/j.tfp.2025.100995

2- Sawadogo, I, Koffi JK, Da SS, Dembélé JB, Traoré ICE, Kouassi FA, Bayen P, Worou ON. Modeling current and future distributions of key fodder grasses under climate change in Senegal using

Biomod2. *Discov Sustain* (2026). https://doi.org/10.1007/s43621-026-03250-5

3- Sawadogo, I., Bayen, P., Sabo, P., Kouassi, F. A., & Worou, O. N. (2026). Effects of land use changes on *Cordyla pinnata* (Lepr. ex A. Rich.) Milne-Redh. stand distribution: a multipurpose threatened species in Senegal (West Africa). *Écoscience*, 1–12. https://doi.org/10.1080/11956860.2026.2680360

4- Sawadogo, I, Kouassi FK, Traoré ICE, Sanou CL, Bayen P., 2026. Structure, diversity, and regeneration status of fodder tree stands in Sahelian rangelands of Ferlo in Senegal and Mankarga in Burkina Faso, West Africa. *Discov Life* **56**, 19 (2026). https://doi.org/10.1007/s11084-026-09740-w

5- Sawadogo I, Sanou CL, Worou ON, Kouassi FK, Bayen P., 2026. Climate and Land-Use Change impacts on Pastoral Systems in the Ferlo, Senegal: Perceptions and adaptation strategies. https://doi.org/10.1016/j.landusepol.2026.108332

Under review

1- Sawadogo, I, Sanou CL, Kouassi FK, Worou ON, Bayen P., 2026. Climate variability and land use shape herbaceous forage production and diversity in semi-arid rangelands of Senegal. *Heliyon*, https://www.sciencedirect.com/journal/heliyon

2- Sawadogo I, Bayen P, Kouassi FK, Worou ON., 2026. Spatial constraints and drivers of pastoral adaptation to climate change in West African rangelands: A multivariate probit analysis. *Environmental Challenges*, https://track.authorhub.elsevier.com/?uuid=8f5a8b2a-1cb4-4a4c-bc81-3f9d642ee528

3- Sawadogo I, Diouf A, Lo A, Worou N O, Kouassi F K, Bayen P., 2026. Optical and Radar Remote Sensing for Forage Biomass Estimation in Sahelian Rangelands: Sentinel-2 Outperforms Sentinel-1. *International Journal of Applied Earth Observation and Geoinformation*, https://www.sciencedirect.com/journal/international-journal-of-applied-earth-observation-and-geoinformation

CONFERENCES AND WORKSHOPS

1- Sawadogo I, Bayen P, Balima LH, Sanou CL, Kouassi FA, Worou ON. Climate-driven shifts in the geographic distribution of fodder trees in West Africa's Grazing landscapes. *International conference on climate change and just energy transition*, 20-24 October 2025, Abuja, Nigeria.

2- Sawadogo I, Kouassi FA, Worou O.N. Woody species composition, diversity and vegetation structure of two rangeland areas along a climatic gradient in Burkina Faso (West Africa). *XII*

International rangeland congress, held on 2-6 June 2025, in Adelaide, Australia.

3- Sawadogo I, Kouassi FA, Worou O.N. Bayen P. Diversity, structure and status of regeneration of fodder plants in Sahelian rangelands: the case of Burkina Faso-Senegal. *Symposium on the State of Agriculture and Environmental Sustainability in West and Central Africa organized by CORAF* from 19 to 21 November 2024 in Accra, Ghana.

4- Sawadogo I., Bama W.J. Assessment of volume, biomass and carbon stock of cashewnuts trees in Ouessa district, Burkina Faso at the *WCRP Open Science Conference*, held in Kigali, Rwanda, on 23-27 October 2023.

5- Sawadogo I., Yaméogo J., Belem M., Samandoulgou Y. Climate Change and the practice of Assisted Natural Regeneration in the agroforestry parks of Gampela; in center Burkina Faso. *International Symposium on Science and Technology* (SIST 2017), Ouagadougou (Burkina Faso), 04-08 December 2017. https://sist-bf.org/documentation/note_appel_SIST_2017

6- Sawadogo I., Bama W.J., Caractéristiques sociodémographique, structurale et agronomique des plantations d'anacardier (Anacardium occidentale L.) dans la commune de Ouessa (Sud-Ouest du Burkina Faso). *WASCAL Science Symposium (WASS 22)*, 6-9 December 2022 à Ouagadougou. https://wascal.org/fr/wass-2022/

7- Sawadogo, I., Assessment of cashew (Anacardium occidental L.) agroforestry systems productivity in the municipality of Ouessa (South-West of Burkina Faso). *Symposium International on the Technology and Society in Africa*, Johannesburg, South Africa. 20 – 21 October 2022. https://technologysocietyconference.com/

GRANTS AND FELLOWSHIPS

- Higher Education Support Project Award, Burkina Faso.
- Partnership for Skills in Applied Sciences, Engineering and Technology (PASET) Scholarship.
- International Livestock Research Institute (ILRI) Scholarship
- Visiting Researcher Mobility – University of Greenwich

TECHNICAL SKILLS

Geospatial and Remote Sensing Tools
- Google Earth Engine
- ArcGIS
- QGIS
- Landsat and Sentinel Data Processing

Statistical Modelling
- R Programming
- Generalized Additive Models (GAM)
- Species Distribution Modelling (BIOMOD2, MaxEnt)

Data Management and Reporting
- Microsoft Excel
- Microsoft Word
- Microsoft PowerPoint
- Environmental Data Management

Languages
- French: Native
- English: Professional Working Proficiency

REFERENCES

Prof. Philippe Bayen
Professor of Botany, University Joseph Ki-Zerbo, Burkina Faso
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Dr. Nadine Worou
Scientist, Sustainable Livestock Systems, ILRI Senegal
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Dr. Faustine Kouassi
University Félix Houphouët-Boigny, Côte d'Ivoire
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Sawadogo Idrissa