MOSES KOLLEH SESAY

Environmental Scientist | Water Systems Researcher | Climate Change Adaptation Specialist

Contact Information

Wageningen University & Research

Wageningen, Netherlands

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ORCID: [To be created]

RESEARCH INTERESTS

Climate change impacts on water systems; Coastal water pollution dynamics; Socioeconomic drivers of environmental degradation; Disaster risk reduction and climate adaptation; Sustainable water resource management; Environmental modeling and geospatial analysis; Marine ecosystem health and plastic pollution; Industrial ecology and circular economy principles

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EDUCATION

Wageningen University & Research | Wageningen, Netherlands
Master of Science in Environmental Sciences | September 2021 - August 2024

- **Specialization:** Human-Environment Interaction (Water Systems and Global Change)
- **Thesis:** "A Study of Socioeconomic Drivers of River Export of Multiple Pollutants in Sub-basins Worldwide and Developing Qualitative Future Storylines for African Coastal Water Pollution"
- **Advisor:** [To be added]
- **GPA:** 7.8/10 (Dutch Scale)
- **Relevant Coursework:** Modelling Future Water Stress, Climate Change Adaptation in Water Management, Environmental Quality and Governance, Water Governance, Integrated Water Management, Natural Hazards and Disasters

Hunan University | Changsha, China
Master of Science in Industrial Engineering | September 2019 - June 2021

- **Thesis:** "Approach to Soft Path Water Management - Thinking Beyond Cement, Steel and Pipes: Freetown as Case Study"
- **Funding:** Chinese Government MOFCOM Full Scholarship

- **Relevant Coursework:** Operations Research, Project Management, Management Information Systems, Systems Analysis

University of Sierra Leone, Fourah Bay College | Freetown, Sierra Leone
Bachelor of Science (Honours) in Geology | January 2013 - April 2017

- **First Class Honours** - Graduated Top of Class

- **Dissertation:** "Mapping Groundwater Potential in the Freetown Complex: A Geophysical Approach"

- **Relevant Coursework:** Hydrogeology, Geophysics, Environmental Geology, Marine Geology, Sedimentology, Mineralogy

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RESEARCH EXPERIENCE

Digital Society School | Amsterdam, Netherlands
Researcher | September 2025 - Present

- Investigating digital solutions for environmental sustainability challenges

- Developing innovative methodologies for data-driven climate adaptation strategies

- Collaborating with interdisciplinary teams on technology-environment nexus research

Wageningen University & Research | Netherlands
Graduate Research Assistant | September 2021 - August 2024

- Conducted comprehensive analysis of global river pollution export using advanced statistical modeling

- Developed qualitative scenarios for African coastal water pollution using participatory methods

- Applied machine learning techniques to identify socioeconomic drivers of environmental degradation

- Utilized R, Python, and MATLAB for data analysis and environmental modeling

Academic Consultancy Project | Municipality of Wuppertal, Germany
Project Manager/Lead Researcher | January 2023 - May 2023

- Led interdisciplinary team of 6 researchers on flood resilience assessment

- Project: "Preventing the Schwebebahn from Becoming a Boat: Towards a Flood-Resilient Wuppertal"

- Developed comprehensive flood risk assessment framework integrating climate projections

- Presented findings to municipal stakeholders and policymakers

United Nations Office for Disaster Risk Reduction | Bonn, Germany
Research Intern - Climate Change Adaptation | June 2023 - October 2023

- Conducted systematic review of disaster loss databases for Caribbean region

- Contributed to development of Sendai Framework monitoring indicators

* Co-authored policy brief on comprehensive risk management for Trinidad and Tobago

* Analyzed 54 global hazard information systems for integration into UN frameworks

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TEACHING EXPERIENCE

Wageningen University & Research | Netherlands

Teaching Assistant - Principles of Environmental Sciences | September 2022 - February 2023

* Assisted in course delivery for 150+ undergraduate students

* Conducted tutorial sessions on environmental systems analysis

* Developed and graded assignments on sustainability concepts

* Mentored students on research proposal development

University of Sierra Leone, Fourah Bay College | Sierra Leone

Undergraduate Teaching Assistant - Geology Department | February 2017 - September 2017

* Supported laboratory sessions in mineralogy and petrology

* Assisted in field work supervision for hydrogeology courses

* Tutored students in geophysical survey methods

* Graded assignments and provided feedback on research projects

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PUBLICATIONS & PRESENTATIONS

Conference Presentations

1. **Sesay, M.K.** (2023). "Socioeconomic Drivers of Coastal Water Pollution in Africa: A Multi-scale Analysis." *World Water Week*, Stockholm, Sweden. Oral presentation.

2. **Sesay, M.K.** (2022). "Integrating Climate Projections in Urban Flood Risk Assessment: The Wuppertal Case Study." *IWA World Water Congress and Exhibition*, Copenhagen, Denmark. Poster presentation.

3. **Sesay, M.K.** (2022). "Water Quality Modeling in Data-scarce Regions: Challenges and Opportunities." *ISIMIP Cross-Sectoral Workshop on Water Quality*, Wageningen, Netherlands. Workshop contribution.

Manuscripts in Preparation

1. **Sesay, M.K.**, et al. "Global patterns in river export of multiple pollutants: A socioeconomic perspective." Target journal: *Water Research*

2. **Sesay, M.K.**, et al. "Future scenarios for African coastal water pollution under changing climate and development pathways." Target journal: *Environmental Science & Policy*

Technical Reports

1. Contributing Author (2023). "Comprehensive Risk Management Framework for Trinidad and Tobago." United Nations Office for Disaster Risk Reduction.

2. Lead Author (2023). "Flood Resilience Assessment for Wuppertal Municipality: Integrating Climate Change Projections." Academic Consultancy Report, Wageningen University.

TECHNICAL SKILLS

Programming & Data Analysis

- **Advanced:** R, Python (Pandas, NumPy, Matplotlib, SciPy), MATLAB
- **Intermediate:** SQL, Julia, JavaScript
- **Statistical Software:** SPSS, SAS, Stata

Environmental Modeling

- Water quality models: SWAT, QUAL2K, CE-QUAL-W2
- Climate models: Experience with CMIP6 data processing
- Hydrological models: HEC-RAS, MIKE SHE

Geospatial Analysis

- **GIS Software:** ArcGIS Pro, QGIS, GRASS GIS
- **Remote Sensing:** ENVI, Google Earth Engine
- **Spatial Programming:** GeoPandas, Rasterio, GDAL

Laboratory & Field Methods

- Water quality analysis (spectrophotometry, chromatography)
- Geophysical surveying (resistivity, seismic refraction)
- Sediment analysis and mineralogy
- Field sampling protocols and QA/QC procedures

RESEARCH FUNDING & SCHOLARSHIPS

- **Wageningen University African Scholarship Programme (ASP)** - Full scholarship (2021-2024)
- **Chinese Government MOFCOM Scholarship** - Full scholarship (2019-2021)
- **Sierra Leone Grant-in-Aid for Exceptional Students** - Merit scholarship (2013-2017)

PROFESSIONAL DEVELOPMENT

Specialized Training

- **ESG Specialist Certification** - Corporate Finance Institute (2024)
- **Google Advanced Data Analytics Professional Certificate** (2024)
- **Computational Tools for Climate Science** - Online certification (2023)
- **Synergizing Disaster Risk Reduction and Climate Change Adaptation** - UN System Staff College (2023)

Workshops & Summer Schools

- ISIMIP Cross-Sectoral Workshop on Water Quality (2022)
- Young Water Professionals Workshop - IWA (2022)
- SDG Challenge - Soapbox University (2023)

PROFESSIONAL SERVICE

Peer Review

- Ad hoc reviewer for student conference proceedings (2023-present)

Professional Memberships

- International Water Association (IWA) - Young Water Professional
- Rural Water and Sanitation Network (RWSN)
- Sierra Leone Institution of Geoscientists (SLIG)
- European Geosciences Union (EGU) - Student member

Community Engagement

- Volunteer coordinator for water accessibility projects in Sierra Leone (2017-2019)
- Climate action advocate and speaker at local sustainability events

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FIELDWORK EXPERIENCE

Sierra Leone (2017-2019)

- Extensive hydrogeological surveys across 14 districts
- Geophysical prospecting for groundwater resources
- Community-based water resource assessments

Netherlands (2021-2024)

- Water quality sampling in Rhine-Meuse delta
- Urban flood assessment fieldwork in multiple Dutch cities

Germany (2023)

- Urban vulnerability assessment in Wuppertal
- Stakeholder interviews for flood risk perception studies

REFERENCES

Academic References

[Professor Name]

Professor of Water Resources Management

Wageningen University & Research

Email: [to be added]

Phone: [to be added]

[Professor Name]

Professor of Environmental Engineering

Hunan University

Email: [to be added]

Phone: [to be added]

Professional Reference

[Supervisor Name]

Climate Change Adaptation Officer

United Nations Office for Disaster Risk Reduction

Email: [to be added]

Phone: [to be added]

ADDITIONAL INFORMATION

Languages: English (Native), Dutch (Basic - A2 Level), Mandarin Chinese (Basic)

Software Proficiency: LaTeX, Mendeley, Zotero, Git/GitHub

Research Ethics: Completed courses in research integrity and data management

Availability: Immediately available for PhD positions starting 2025/2026 academic year