AQUILINA WAWIRA MWANDIKO



Geospatial Intelligence, Climate Resilience & ESG Researcher | MSc GIS | MBA | PRINCE2®

Bensheim, Germany | mail@aquilinamwandiko.com
aquilinamwandiko.com | LinkedIn | MBA Podcast

PROFESSIONAL PROFILE

Applied geospatial researcher and practitioner with an MSc in Geographic Information Systems and 15+ years of experience applying GIS, satellite data and field surveys to climate resilience and infrastructure decisions in 12+ countries. My flood mapping of all 17 districts of Mogadishu became the basis for prioritising drainage investments, and I screened about 100 solar mini-grid sites for Sierra Leone's Ministry of Energy.

My MBA thesis at Hochschule Darmstadt developed geospatial ESG risk-scoring dashboards for renewable energy portfolios in Germany, aligned with CSRD/ESRS and LkSG. I recently evaluated AI models on surveying and GIS reasoning, which informs my interest in reliable, explainable GeoAI.

I am seeking a doctoral or research position that connects geospatial intelligence, AI and ESG risk assessment for climate-resilient renewable energy infrastructure.

RESEARCH INTERESTS

Proposed doctoral research direction: Integrating Geospatial Intelligence, Artificial Intelligence and ESG Risk Assessment for Climate-Resilient Renewable Energy Infrastructure.

- Satellite and GIS-based climate hazard and exposure analysis for energy infrastructure
- AI-supported site screening and risk scoring
- Translating spatial risk evidence into ESG and investment decisions (CSRD/ESRS context)
- Decision-support dashboards for public authorities and investors

EDUCATION

Master of Business Administration (MBA) — **Oct 2024 – Nov 2026**
Hochschule Darmstadt, University of Applied Sciences | Darmstadt – Germany

- **Specialisation:** sustainability transitions, operations management and strategic programme leadership.
- **Expertise tracks:** Global Management Challenges (1.3); Project Management; AI & ML for Management.
- **Thesis:** Geospatial ESG Risk-Scoring Dashboards for Renewable Energy Portfolios in Germany – QGIS + Power BI, aligned with CSRD/ESRS and LkSG.

Master of Science, Geographic Information Systems — **Sep 2016 – Sep 2019**
University of Nairobi | Nairobi – Kenya

- **Thesis:** Use of Climate and Geospatial Data for Run-off Projections in Nairobi County.
- **Recognition:** ZAB Statement of Comparability (2024) – corresponds to a German master's-level qualification.

Bachelor of Technology, Geoinformation Technology — **Jan 2013 – Dec 2015**
Technical University of Kenya | Nairobi – Kenya | Second Class Honours (Upper Division)

Diploma in Cartography (Pass with Credit) — **1997 – 1999 (awarded Dec 1999)**
Kenya Institute of Surveying and Mapping | Nairobi – Kenya

PUBLICATIONS & RESEARCH OUTPUTS

- Supercharging progress towards the SDGs with better data – UNOPS Insights, 2023 (lead author)
- Greater Banjul Area 2040 Development Plan – ArcGIS StoryMap, UNOPS / AfDB, 2022 (key contributor)
- A tale of field expeditions – ArcGIS StoryMap, 2023 (author)
- Rapid Flood Impact Insight – UNOPS Technical Services Unit StoryMap, 2024 (contributor)
- Geospatial ESG Risk-Scoring Dashboards for Renewable Energy Portfolios in Germany – MBA thesis, Hochschule Darmstadt, 2026

METHODS & TOOLS

Geospatial Analysis
- ArcGIS Pro / Online, QGIS
- Flood & catchment modelling
- Site suitability analysis
- Cadastral & land data

Earth Observation
- Satellite imagery analysis
- Google Earth Engine
- SAR flood mapping
- Drone & LiDAR data

Data & AI
- Python, SQL
- Power BI dashboards
- AI model evaluation & rubrics
- Data quality & QA/QC

Field Methods
- Topographic surveys
- Mobile data collection (ODK, QField)
- Community consultations
- Post-disaster assessments

Research Practice
- Literature review
- Mixed-methods case studies
- Scientific writing
- Presenting to decision-makers

Domains
- Climate resilience
- Renewable energy
- Urban & land systems
- ESG risk

PROFESSIONAL EXPERIENCE

AI Domain Expert – Surveying & GIS **Jul 2026 – Nov 2026**
Mercor.io Corporation (USA) | Remote | Part-time

- **Expert benchmarks for AI quality:** AI models often give confident but spatially wrong answers. I built surveying and GIS test tasks with golden responses and rubrics that make these errors measurable for developers.

Regional Partnerships Analyst **Apr 2025 – Jun 2025**
UNOPS, East & Southern Africa Multi-Country Office | Remote – Germany

- **UN-to-UN co-financing agreement:** I coordinated UNOPS, UNDP and FAO through to signature of the partner agreement for a USD 100M+ climate-resilience programme in Eritrea, and helped secure the government's no-objection to implementation without a host-country agreement.
- **Proposals I led:** Alongside concept notes for seven countries, I led three donor proposals, each backed by satellite-based site evidence:
  - **JICA** – bridge rehabilitation and management system, Uganda: advanced to hard-pipeline status
  - **Embassy of Iceland** – school infrastructure, Uganda: co-designed with the technical team
  - **European Union** – road safety, Uganda: developed with the NGO Safe Way Right Way

Geospatial Officer – Surveying and GIS (Team Lead) **Sep 2020 – Mar 2025**
UNOPS, East & Southern Africa Multi-Country Office | Nairobi – Kenya

- **Post-disaster assessments for the UN:** I led the Somalia post-flood infrastructure damage assessment for the UN Country Team and the 2024 Kenya flood assessment that triggered a joint UN Post-Disaster Needs Assessment, with UNOPS leading the transport sector.
- **Evidence for investment decisions:** I screened about 100 solar mini-grid sites for Sierra Leone's Ministry of Energy; the platform I built narrowed the investment shortlist and now tracks impact.
- **Field delivery in complex settings:** I led topographic assessments of 27 sites and about 15 water systems in Cabo Delgado, Mozambique, and surveys for 10 dam rehabilitations in Zambia – with no safety incidents – and drafted the unit's health-and-safety procedure for topographic surveys.
- **Faster, more reliable reporting:** I automated Python/SQL data pipelines that cut processing time by 35% and built Power BI and ArcGIS Online dashboards for programme managers, governments and donors.
- **Knowledge sharing across UNOPS:** I founded the UNOPS global GIS Community of Practice, published "Supercharging progress towards the SDGs with better data" (2023) and recruited and mentored the unit's geospatial intern.

Project Management Support Specialist – GIS (Surge Assignment) **Jun 2021 – Mar 2022**
UNOPS, West Africa Multi-Country Office | Banjul – The Gambia

- **Digital revenue records:** The councils' property registers were incomplete and unmapped. I designed GPS-based mobile data collection and linked property locations to the revenue and cadastral databases of three city councils – supporting a 50% rise in revenue-collection efficiency.
- **Lasting local capacity:** I trained municipal revenue officers, ministry surveyors, cartographers and planners in twice-monthly workshops so the system kept running after handover – recognised with the UNOPS Gambia Country Manager Award (2021).

- **Evidence-based urban planning:** I produced the land-use, risk and opportunity maps for the City of Banjul's five-year development plan.

GIS & Mapping Officer (Acting Deputy Project Manager) **May 2017 – Aug 2020**
UNOPS, World Bank Implementing Unit | Mogadishu – Somalia

- **Data for the drainage master plan:** My satellite flood mapping of all 17 city districts became the basis for prioritising investments in the Mogadishu trunk drainage master plan and road interconnectivity projects.

Senior CAD Technician & Team Lead **Jun 2007 – May 2017**
Howard Humphreys (East Africa) Ltd, now Atkins Consulting Engineers | Nairobi – Kenya

- **Construction supervision:** For three years I was site supervisor on the World Bank-funded Kenya Informal Settlements Infrastructure Project, overseeing an international contractor building drainage, roads, sewer lines and solar street lighting in Nairobi.

CERTIFICATIONS

- PRINCE2® Foundation & Practitioner – PeopleCert (Nov – Dec 2019)
- Project Management Essentials, 3-day course (PMI-based) – Darmstadt Business School (Oct 2025)

AWARDS

- UNOPS Executive Director's Award (2020)
- UNOPS The Gambia Country Manager Award for Leadership and Outstanding Performance (2021)

MEMBERSHIPS

- Technician Member, Institution of Surveyors of Kenya (ISK), Chapter of Land Surveyors (elected 2013)
- Elected Chairperson (4 years), ~200-member savings & credit cooperative – financial portfolio
- Mentor, African Women in GIS

LANGUAGES

English (full professional proficiency) | Kiswahili (native) | German (basic, actively learning) | French (basic)

REFERENCES

Prof. Dr. Prof. h.c. Ralf Schellhase
Professor of Marketing; MBA Director
Hochschule Darmstadt – Germany
MBA thesis supervisor

Dr.-Ing. David N. Siriba, MISK (LS)
Senior Lecturer, Geospatial & Space Technology, University of Nairobi – Kenya
Academic referee (MSc GIS)

Mr Tim Lardner
Regional Director, Europe & Central Asia
UNOPS – Switzerland
Former line manager

Mr Dietmar Fischer
Managing Director
VIOLA HQMC GmbH – Germany
Current supervisor

Mr Jean Aboudé, Dipl.-Ing., MBA
Project & Sales Director
Zender Spaces GmbH – Germany
Professional referee

Referee contact details available on request.