

Academics

1 st Sept. 2009-25 th Jul. 2013	PhD. In Geoinformatics for Natural Resources Management (grade: very good, "magna cum laude") Eberharls-Karls-University Tübingen-Germany
1 st Oct. 2005-10 th Dec. 2007	Master of Engineering in Forestry (grade: good) Warsaw University of Life Sciences-Poland
1 st Oct. 2005-25 th Oct. 2007	Master of Science Environmental Information Technology (grade: good) University for Sustainable Development Eberswalde-Germany
1 st Oct. 1996-24 th Sept. 2001	Engineering in Agriculture Economics and Rural development Federal University of Technology Minna-Nigeria

Work History

Fev. 2020 to Present	GIS and Remote sensing Expert AGRHYMET Regional Centre Niamey-Niger
September 2020 to Jan 2025	Data and Science Co-Lead at Servir WA AGRHYMET Regional Centre Niamey-Niger
March 2018 to August 2020	Senior Researcher and lecturer at University of Diffa -Niger
Oct. 2017 to March 2018	Lecturer at "Université Canadian" (UNCAN) Niamey -Niger
Jul. 2014 to March 2017	Research Associate -Abrupt Change in Ecosystem Services and Wellbeing in Mozambique–University of Edinburg United Kingdom in Partnership with the University Eduardo Mondlane (Mozambique)
Jan. 2014- Jul. 2014	Post Doc. (HIWI) - ROCEEH project at the Heidelberger-Germany
Nov. 2008- Jul. 2013	Doctorant and Research Assistant at Eberharls-Karls-University Tübingen- Germany
Sept. 2007- Oct. 2008	Research Assistant -The Ziethen project at the University for Sustainable Development, Eberswalde-Germany
Sept. 2006- Jul. 2007	Research Assistant (Remote Sensing & Forestry)-University of Applied Sciences-Eberswalde-Germany
Jul. 2002- Jul. 2004	Monitoring & evaluation staff at the National Directorate of Crop Protection (DPV), Niamey-Niger
Sept. 2000- Oct. 2003	Head of department Agriculture & environment at the N.G.O Mica-Inc, Niamey-Niger
Jan. 2000- Jan. 2001	Internship -Institute for Agricultural Research, Zaria-Nigeria (7 months)-National Animal Production Research Institute, Zaria-Nigeria (3 months) and "Projet d'irrigation au Niger-ANPIP" Maradi, Niger (3 months).

Training

- **Training on Crop types mapping**, Dakar, Senegal organized by NASA Marshall Apace Flight Center and Maryland University, June 2024.
- **Training on Geospatial Information Tools for sustainable Ground Water Management**, Niamey Niger organized by Brigham Young University, Feb. 2023
- **Training on accuracy assessment of map products derived from EO data**, Accra, Ghan, organised by SERVIR WA, May 2023
- **Monitoring and Early Warning for Floods** Certificate, RCMRD, the 6th AfriGEO Symposium, Nov. 2022
- **SERVIR Climate Forecasting trining Phase 1**: introduction to Early Warning explorer and Climate Hazards center InfraRed Precipitation with Station dataset, organized by Climate-Hazards-Center, UCSB in collabaration with SERVIR West Africa, Feb. 2021.
- **Satellite Remote Sensing for Land- Use Planning online Workshop**, Nov. 2021
- **Digital Earth Africa Training Facilitator certificate recognises**, July 2021
- **Online training on DEEP Learning** organized by SERVIR West Africa, Aug. 2021
- **Online Training on Machine Learning and Artificial Intelligence**, organized by SERVIR WA, Nov. 2020
- **Sampling-based estimation of area and map accuracy trainng** organized by Boston University in collaboration with NASA SERVIR, Dec. 2020
- **International Spring University on Ecosystem Services, Modeling Third Edition** Certificate, Bilbao, Apr. 2015
- **Ecosystem Services Modeling, Scenarios, environmental Informatics, Earth observation and Ecosystem assessment Using QUIKScan tool**, Wageningen, Netherlands, Nov. 2015:
- **Proposal development and scientific writing**, founding by Volkswagen foundation, Hannover, Germany, June 2013
- **Visualisation and Presentation Certificate**, founding by Friedrich Ebert foundation, Bad Münstereifel, Germany, Nov. 2012
- **Remote Sensing, Geographic System and Statistic Analysis for erosion hazard assessment** certificate founding by Friedrich Ebert foundation, Oberjoch, Germany, May 2011
- **Soil Erosion in the Mediterranean certificate**, founding by Goethe-institut, Madonie, Italy, July 2010
- **"Rhetorik II"** certificate, founding by Friedrich Ebert foundation, Berlin, Germany, Dec. 2009
- **Advanced GIS** training certificate, Eberswalde, Germany, Sept. 2008:

Computer Skills:

- **Geospatial Analysis**: ArcGIS, NEST, SAGA, FRAGSTATS, QGIS, ENVI, ERDAS Imagine, Google Earth Engine
- **Remote sensing**: Arc View, Arc/info, ENVI, ERDAS Imagine, IDRISI, Sentinel toolbox, Map Ready, eCognition and Land Cover Classification System standard.

- **Programming:** Python, R, C++, Visual Basic.net, MATLAB, TensorFlow
- **Statistical & Geostatistic Analysis:** SPSS, GRASS, R-Gstat, gvSIG, ILWIS, ImageMagick, LASTools, Matlab Hyperspectral Toolbox, NEST, SNAP, SEPAL, FWtools, GDL and Geo Tools
- **Modeling:** Bayesian Networks, Expert system, BWIN Pro, TANAGRA, QUIKScan, SALFORD, Sentinel1 tool,
- **Microsoft Office:** MS Office Tools
- **Internet programming:** HTML, CSS, PHP,
- **Other:** Corel Draw, Photoshop, Adobe Creative Suite 3,

Teaching and trainer:

- **Trainer:** Training countries (Mali, Niger, Burkina Faso and Senegal) capacities on GIS and Remote Sensing tools, 2024.
- **Trainer:** Training of CILSS countries stakeholders on soil carbon and plant carbon assessments, 2024.
- **Trainer:** Development of national expertise in strategic planning, land degradation assessment, monitoring progress towards achieving LDN targets, data analysis and management, soil characterization and analysis for sustainable land management (CILSS countries) 2024.
- **Trainer:** Support countries in the use of tools/methods to assess land degradation (CILSS countries) 2024
- **Trainer:** Support countries for the harmonization of land use nomenclature (CILSS countries) 2025.
- **Trainer:** Strengthening and harmonization of existing Land and Soil Degradation monitoring and evaluation platforms in the 4 countries (Niger, Burkina Faso, Senegal and Mali). 2025.
- **University of Canada -Niamey Niger**, Oct. 2017 to March 2018. Cours: Programming, Statistics, management and informatics
- **University Eduardo Mondlane, Mozambique, University of Diffa, Niger and University Abdou-Moumouni, Niamey, Niger, March 2018 to Present:** Cours Remote Sensing, geo-statistics, Geometrics, GIS Earth Observation, Monitoring, Land use land cover, Natural habitats, Ecosystem services modeling, Digital elevation modeling, Landslide and erosion modelling and Environmental Impact Assessment
- **AGRHYMET Regional Center** (September 2020 to Present): Remote Sensing, geo-statistics, Geometrics, GIS Earth Observation, Monitoring and Participatory approach.

Language Skills: English (Fluent); French (Native); German (Moderate); Hausa (Fluent); Djama (Fluent) and Portuguese (Basic).

Grants and Funds: July 2013: Travel grants for conferences and international training course funded by the Volkswagen Foundation and July 2009: Grant for PhD research funded by Friedrich-Ebert-Foundation.

Membership of professional bodies: "Geo communauté ESRI members", African Scientists Directory (ASD), EOTEC Africa Region Flood working Group, Land cover Land Use working group for West Africa, SERVIR West Africa Consortium members, TensorFlow Working Group, SERVIR Thematic working group, "Afrikagruppe deutscher Geowissenschaftler (ADG)"; "Arbeitskreis Fernerkundung" and Miombo network.

Journal Reviews

British Journal of Applied Science and Technology; African Journal of Ecology; Asian Journal of Environment and Ecology; Journal of Global Ecology and Environment; International Journal of Biodiversity and Conservation; Journal of Geography; Environment and Earth Science International etc.

Peer reviewed Publications

Mahamane M., (2015): Assessing soil erosion risk in the Tillabéry landscape, Niger. African Journal of Environmental Science and Technology; 9(3): 176-191.

Mahamane M., Hochschild V, Schultz A and Jude Kuma. (2015): Monitoring Desertification in the Tillabéry landscape (Sahel region) using Change Detection Methods and Landscape Metrics. *International Journal of Applied Research*; 1 (10): 315-321.

Mahamane M., Hochschild V, Schultz A and Jude Nkuo Kuma. (2016): Fragmentation rate and landscape structure of the Tillabéry Landscape (Sahel region) with reference to desertification. *Journal of Geography and Regional Planning* 9 (5): 77-86.

Zorrilla-Miras P., **Mahamane M.**, Verweij P., Woollen E., Paterson J., Patenaude G., Metzger M., Siteo A., and Ryan C. (2017): Charcoal production and well-being in Mozambique: analysis using an ecosystem services framework. *Ecological Economics* 144: 100-111.

Mahamane M., Zorrilla-Miras P., Verweij P., Woollen E., Paterson J., Patenaude G., Grundy I., Ribeiro N., Vollmer F., Metzger M., Siteo A., and Ryan C. (2017): Understanding land use and land cover and ecosystem services change using Bayesian Networks and Geographic Information Systems mabalane woodland, Mozambique. *Energy and Environment Research* 7 (1):1927-0577.

Vollmer V., Woollen E., Zorrilla-Miras P., Ribeiro N., Luz C.A., Patenaude G., Grundy I., Artur L., **Mahamane M.**, Baumert S., (2017): Charcoal income as a means to a valuable end: Scope and limitations of income from rural charcoal production to alleviate acute multidimensional poverty in Mabalane district, southern Mozambique. *World Development Perspectives* 7-8:43-60.

Baumert S., Fisher J., Ryan C., Woollen E., Vollmer F., Artur L., Zorrilla-Miras P., **Mahamane M.**, (2019): Forgone opportunities of large-scale agricultural investment: A comparison of the impacts of three models of soya production in central Mozambique. *World Development perspectives*. (DOI: 10.1016/j.wdp.2019.100145)

Smith H., E., Ryan C., Vollmer F., Woollen E., Kaene A., Fisher J., Baumert S., Grundy I., Carvalho M., Lisboa S., N., Luz A., C., Zorrilla-Miras P., Patenaude G., Artur L., Ribeiro N., **Mahamane M.**, (2019): Impacts of land use intensification on human wellbeing; Evidence from rural Mozambique. *Global Environmental Change*, 59: 101976.

Issaharou-Matchi I., Rabiou H., **Mahamane M.**, Idrissa B., Mahamane A., Saadou M., (2019): Rural Communities Perceptions of Climate Change and its Impacts on Their Livelihood in Southeastern Niger. *International Journal of Environment and Climate Change*, 2231-4784.

Baumert S., Vollmer F., Fisher J., Ryan C., Woollen E., Vollmer F., Artur L., Zorrilla-Miras P., Luz C.A., **Mahamane M.** (2019): Forgone opportunities of large-scale agricultural investment: A comparison of three models of soya production in Central Mozambique. *World Development Perspectives* 16, 100145.

Rabiou H., **Mahamane M.**, Issaharou I., Mahamane A. (2019): Impact de l'installation de sites d'occupation des réfugiés, retournés et déplacés sur l'exploitation des ressources forestières dans la région d Diffa. *European Scientific Journal* 15 : 1857-7881.

Mahamane M., Issaharou I., Hochschild V., Mahamane A. (2020): Évaluation du risque d'érosion du sol au Sahel : Cas du paysage de Tillabéry. *Afrique Science* 16 (5): 235 - 248.

Zorrilla-Miras P., Lopez-Moya E., Metzger M. J., Patenaude G., Siteo A., **Mahamane M.**, Lisboa S. N., Paterson J. S., Lopez-Gunn E. (2021): Understanding Complex Relationships between Human Well-Being and Land Use Change in Mozambique Using a Multi-Scale Participatory Scenario Planning Process. *Sustainability*, 13, 13030.

Rahila M., Habou R., **Mahamane M.** Issaka I. Ali M., Anne M., (2023): Diversity and socio-cultural importance of wild food herbs and cyanobacteria in the Lake Chad Basin (Niger), *Ethnobotany Research and Application* 25, 60

Mensah F., Mushtaq F., Bartel P., Abramowitz J. **Mahamane M.**, Mamane B., Cherrington E., Moctar Dieye A., Sanou P., Enaruvbe G., and Fatou N., (2024): Land Cover Mapping in West Africa: A Collaborative Process, 13(10), 1712; <https://doi.org/10.3390/land13101712>.

Di Gregorio A., Mamane B., Fatima Mushtaq F., **Mahamane M.**, Tchana E., Enaruvbe O., Henry M., (FAO), Mensah F., Aw M., Bartel P., Mimouni M., Toukal A, D'Annunzio R., Muchoney D., and Ernest A. (2022): West African Land Cover Reference System, <https://www.fao.org/geospatial/resources/detail/en/c/1600226/>, FAO.

Siradji, A. A., Maarouh, I. M., **Mahamane, M.**, Ousseini, A. G., Latif, H. N. A., Soumana, D., Yacoubou, B., & Ali, M. (2024). Dynamique spatio-temporelle des écosystèmes de la Réserve de Biosphère de Gadabédji dans la zone Nord Sahélienne au centre du Niger. *European Scientific Journal, ESJ*, 20 (18), 310. <https://doi.org/10.19044/esj.2024.v20n18p310>.

Without peer reviewed

Mahamane M., (2013): Applications of Remote Sensing and Geographic Information System techniques for desertification and land degradation monitoring and assessment in the Tillabéry Landscape. Tuebingen University August-2013.

Kropacek. J., Eberle J., Varilova Z., **Mahamane M.**, Vilimek V., Hochschild V., (2014): Landslide monitoring using terrain reconstruction by structure of motion approach, Vienna, Austria, id.15455.

Nhantumbo I., Zorrilla Miras P., Matediane M. J., Patenaude G., Metzger M., Paterson J., Artur L., **Mahamane M.**, and Siteo A.:(2015): Making the links between woodlands and wellbeing: a multi-stakeholder approach. IIED Briefing (<http://pubs.iied.org/17297IIED>).

Zorrilla-Miras P., **Mahamane M.**, *et al.*, (2018): Scenarios of future land use change in Mozambique (2014 and 2015). (DOI: 10.5285/97c65c35-1db5-49d5-8ee0-ae5c7b699634). Data

Zorrilla-Miras P., **Mahamane M.**, *et al.*, (2018): Causal diagrams linking rural well-being with forest ecosystem services in Mozambique (2014 and 2015). NERC Environmental Information Data Centre. (DOI: 10.5285/14622c4b-8bd4-4624-8ea6-35da7da211cd). Data

Foster M., Mary A., Emmanuel A. Jacob A., Emil C., Mahamane M. (2023) Monitoring galamsey in Southern Ghana with Earth observation data (poster), AGU, San Francisco.

Gelaye K., Adama S., Mutuku J., Bassene C., Diop L., Traore P., bartel P., Garba M., Phalke A., **Mahamane M.**, Abramowitz J., and Jat M., (2024) GC51K-0101 Crop Type Classification in Complex African Dryland Farming Systems of Senegal, <https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1666988>.

Mahamane M., Mamane B., Maiga I., Toukal B., Haidara F., Tinni S., IGarba I. Desert locust decision support tool and the ad-value of incorporating sub-seasonal forecasts to provide forecast products on P-Locust evidenced. Submitted (Scientific Press Pte Ltd).

Mahamane M., Mamane B., An Assessment of land degradation and sustainable land management in Sahel region using Trends: earth, Under process.

International Conference

COP 28 in Dubai: At the Burkina Faso Pavilion event "Agricultural production and food security in West Africa "presented the crop types mapping approaches developed. **At the Mozambique Pavillion event** "Land degradation and climate change in Africa "underlined the role played by SERVIR WA in the development of a tool for land monitoring in Ghana looking at charcoal production and illegal mining. **At the CILSS Pavilion CILSS: Joint Ministerial Meeting on Land Restoration and Drought Resilience event** presented the use case of the land degradation monitoring service in Ghana. 29 Nov.to5 Dec.2023

Regional Consultation on West African Land Cover Reference System, presented the West African Land Cover Reference System organized by Land cover Land Use working group for West Africa, online, July 2023

"Evènements climatiques extrêmes et Risques de Catastrophes, la troisième Conférence Scientifique Internationale sur le Climat, sous l'égide du centre Climatique Regional pour l'Afrique de l'Ouest et le Sahel", Niamey, Niger, 28 to 31 May 2023

West Africa Land Use / Land Cover Harmonisation Task Force for ECOWAS were presented International Winter School: Assessment of Landscape Process organized by University of Isfahan from 23 to 30 Jan. 2022.

Data availability -SERVIR West Africa were presented Geo Week 2022, Accra, Ghana, 31 Oct. to 4 Nov. 2022.

COP 28 in Egypt: Representing DEAfrica in the session organized by CILLSS and west African institution and **presentation on the session organized by Parties and international organization:** 12 to 18 Nov. 2022

"Evaluation du risqué de la dégradation et d'érosion du sol au Sahel : Cas du paysage de Tillabéry communication – Colloque international sur le Sonjei (Songhai): état des connaissances et devenir – l'environnement", 13 to15 Dec. 2019".

"Impact de l'installation de sites d'occupations des réfugiées, retournés et déplacés sur l'exploitation des ressources forestières dans la région de Diffa", Forum sur la Gestion des Ressource Naturelles dans la Région de Diffa 30 Sept. to 2 Oct. 2019, Diffa".

"Risqué de la dégradation et d'érosion du sol au Sahel : Cas du paysage de Tillabéry, Colloque International sur la "Gestion durable des Sols en milieux aride et semi-aride" 6 to 8 Nov. 2018, Niamey"

"Désertification, changements climatiques et gradients écologique, quels impacts sur la dynamique des socio-écosystèmes dans la Région de Diffa et Tillabéry, Colloque international sur la désertification et l'économie verte, 25 to 27 July 2018".

QUISKscan approach to understanding land use and land cover change and ecosystem services, example: Mabalane, oral presentation at 2016 African ESP Conference, 21 to 25 Nov. 2016, Nairobi

Integration Bayesian Networks and Geographic Information Systems as a tool in understanding land use and Land cover change-Ecosystem services links: a case study for Mabalane, Mozambique. oral presentation at Ecosystem services for poverty alleviation (ESPA) 2016 Annual Science Conference, 17 to 18 Nov.2016, Nairobi.

To understand how changes in Land use and Land cover affect woodland-based ecosystem services in Mozambique (Case study Mabalane district). Oral at "IX Conferência Científica 2016", 27 to 28 Sept. 2016, Maputo.

Ecosytem services Assessment- Case study; Mabalane District- Mozambique. Oral presentation at "International sprig University on Ecosystem Services Modeling" Third Edition, 7 to 17 April 2015 Bilbao.

Application of Change detection Methods and Landscape Metrics for Monitoring Desertification in the Tillabéry Landscape (Sahel Region). Oral presentation at "Arbeitskreis Fernerkundung", 26 to 27 August 2013 Tübingen.

Spatial distribution of desertified land area during the interval of 1973 to 2007 in Sahel region. Presented at the "Vertiefungsseminars" organised by the Friedrich-Ebert-Stiftung-, 1 April 2012, Bad Münstereifel.

The Use of thematic change detection and landscape metrics to describe structures and changes in Tillabéry land use/ land cover. Presented at the 4th European Association of Remote Sensing Laboratories (EARSel), 1 to 3 June 2011, Prague.

Remote Sensing and Geographic Information System techniques for desertification and land degradation monitoring and analysis in the Tillabéry landscape (Sahel region) Oral presentation at "Jahrestagung Afrikagruppe deutscher Geowissenschaftler (ADG)", 24 to 25 June 2011, Würzburg.

Fragmentation rate and landscape structure for desertification in the Tillabéry landscape (Niger)" Poster presented at the GI_Forum -Salzburg, 5 to 8 July 2011, Salzburg.

List of references

Prof. Almeida Siteo: University Eduardo Mondlane (Mozambique), E-mail: almeidasiteo@gmail.com, Tel: +258823195410.

Dr. Issaharou Matchi Issiaka: University of Diffa, Niger," E-mail: issakissaharou@gmail.com, Tel: +22796949130.

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