

CURRICULUM VITAE

Jean Claude Ndayishimiye

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FIELDS OF EXPERTISE

Sustainability and Green Technology: Principles of sustainability and developing technologies and practices that reduce environmental impact
Environmental Science and Conservation: Scientific principles behind environmental issues, such as climate change, biodiversity loss, and pollution
Environmental Policy and Law: Policies and laws related to environmental issues at the local, national, and international levels
Environmental Health and Safety: Develop and implement policies and practices that protect public health and safety in areas such as air, soil, and water quality, hazardous waste management, and occupational safety
Environmental Education and Communication: Educating the public about environmental issues and promoting awareness and action

EDUCATION

Doctor of Philosophy in Environmental Sciences, September 2020
University of Chinese Academy of Sciences, Beijing, People's Republic of China
Dissertation title: "*Tracking Environmental Change using Testate Amoeba Community across Different Timescales*"
Advisor: Professor Jun Yang
Committee: Profs. Changzhou Yan, Xin Yu, Jun Yang, Haifeng Gu, Jinsheng Chen, and Feng Zhao
Master of Philosophy in Applied Geology, August 2020
Annamalai University, Chidambaram, Tamil Nadu, India
Dissertation: "*Environmental Magnetism: Pichavaram Mangrove Ecosystem*"
Advisor: Professor T. Ramkumar
Master of Arts in Environmental Economics, May 2014
Annamalai University, Chidambaram, Tamil Nadu, India
Bachelor of Science in Civil Engineering, January 2012
National University of Rwanda, Huye, Southern Province, Rwanda

ACADEMIC AND PROFESSIONAL POSITIONS

February 2021 to Present, **Postdoctoral fellow**, Shenzhen MSU-BIT University
January 2011 to July 2012, **Graduate assistant**, National University of Rwanda

LEADERSHIP AND SERVICE HIGHLIGHTS

August 2022, **Founder, Rwanda Geoscientists Society (RGS)**, a professional organization that brings together individuals who are interested in and work in the field of geosciences in Rwanda. RGS encompasses a broad range of scientific disciplines, including geology, geophysics, hydrology, meteorology, and environmental science.

June 2018, **Founder and Chair, the Center for Earth and Natural Resource Sciences (CENRS)**, a comprehensive and multi-disciplinary research center engaged in fundamental and applied research on the environment, understanding earth processes and natural hazards, resource science, and innovative technologies and instruments for the control and remediation of water, soil, air, and solid waste pollution

June 2012, **Founder, the Institution of Engineers Rwanda (IER)**, a professional organization that represents and supports engineers, with the aim of promoting excellence, professionalism, and innovation in engineering in Rwanda.

RESEARCH INTERESTS

Primary interests: Environmental science, Soil and water remediation, Ecology, Protistology

Additional interests: Global change, Climate change, Microbial biogeochemistry, Restoration ecology, Natural and anthropogenic hazards

PUBLICATIONS

Scholarly articles

Ndayishimiye JC, Mazei Y, Babeshko K, Tsyganov AN, Bobrov A, Mazei N, Smirnov A, Ren K, Abdullah Al M, Chen H, Wang W, Saldaev D, Ivanovskii A, Nyirabuhoro P, Yang J. 2022. Stochastic and deterministic processes shaping the testate amoeba communities across different biotopes of urban parks in Moscow and Xiamen cities. *Urban Ecosystems*. DOI: [10.1007/s11252-022-01306-8](https://doi.org/10.1007/s11252-022-01306-8)

Gao X[#], Wang W[#], **Ndayishimiye JC[#]**, Govaert L, Chen H, Jeppesen E, Xue Y, Yu X, Yang J. 2022. Invasive and toxic cyanobacteria regulate allochthonous resource use and community niche width of reservoir zooplankton. *Freshwater Biology*. 67:1344–1356. DOI: [10.1111/fwb.13921](https://doi.org/10.1111/fwb.13921)

Ndayishimiye JC, Nyirabuhoro P, Lin T, Zhang G, Zhang W, Mazei Y, Ganjidoust H, Yang J. 2020. Decade-scale change in testate amoebae community primarily driven by anthropogenic disturbance than natural change in a large subtropical reservoir. *Science of the Total Environment*. 78:fiab036. DOI: [10.1016/j.scitotenv.2021.147026](https://doi.org/10.1016/j.scitotenv.2021.147026)

Ndayishimiye JC[#], Nyirabuhoro P[#], Wang W, Mazei Y, Yang J. 2020. Morphology of testate amoeba *Diffugia australis* (Playfair, 1918) Gautier-Lièvre et Thomas, 1958 from a subtropical reservoir (southeast China). *Zootaxa*. 4890:097–108. DOI: [10.11646/zootaxa.4890.1.5](https://doi.org/10.11646/zootaxa.4890.1.5)

Ndayishimiye JC, Nyirabuhoro P, Wang Q, Yang X, Yang J. 2020. Effects of natural and anthropogenic changes on testate amoebae communities in an alpine lake over the past 2500 years. *Science of the Total Environment*. 721:137684. DOI: [10.1016/j.scitotenv.2020.137684](https://doi.org/10.1016/j.scitotenv.2020.137684)

Ndayishimiye JC, Ju L, Li H, Yang X, Liu Z, Yang J*. 2019. Temperature transfer functions based on freshwater testate amoebae from China. *European Journal of Protistology*. 69:152–164. DOI: [10.1016/j.ejop.2019.03.003](https://doi.org/10.1016/j.ejop.2019.03.003)

Zhong Y, Ivanovskii A, **Ndayishimiye JC**, Tsyganov AN, Babeshko K, Saldaev D, Mazei Y. 2022. Distribution of soil microbes in urban parks: an effect of under-tree crown and hillside position on testate amoeba assemblages in subtropics (Shenzhen, China). *Land*. 11:2250. DOI: [10.3390/land11122250](https://doi.org/10.3390/land11122250)

Munganyinka JP, Habinshuti JB, **Ndayishimiye JC**, Mweene L, Ofori-Sarpong G, Mishra B, Adetunji AR, Tanvar H. 2022. Potential uses of artisanal gold mine tailings, with an emphasis on the role of centrifugal separation technique. *Sustainability*. 14:8130. DOI: [10.3390/su14138130](https://doi.org/10.3390/su14138130)

Habumugisha T, Zhang Z, **Ndayishimiye JC**, Nkinahamira F, Kayiranga A, Cyubahiro E, Rehman A, Yan C, Zhang X. 2022. Evaluation and optimization of the influence of silver cluster ions on the MALDI-TOF-MS analysis of polystyrene nanoplastic polymers. *Analytical Methods*. 14:763–772. DOI: [10.1039/D1AY02219A](https://doi.org/10.1039/D1AY02219A)

- Wang W, Gao X, **Ndayishimiye JC**, Lara E, Lahr DJ, Qian H, Ren K, Chen H, Yang J. 2022. Population and molecular responses to warming in *Netzelia tuberspinifera*—An endemic and sensitive protist from East Asia. **Science of The Total Environment**. 806:150897. DOI: [10.1016/j.scitotenv.2021.150897](https://doi.org/10.1016/j.scitotenv.2021.150897)
- Cyubahiro E, Luo Z, Kayiranga A, Habumugisha T, Nkinahamira F, **Ndayishimiye JC**, Yan C, Guo J, Wang Z. 2022. Thallium removal by the montmorillonite biochar composite: insights and environmental implications. **Desalination and Water Treatment**. 253:177–193. DOI: [10.5004/dwt.2022.28301](https://doi.org/10.5004/dwt.2022.28301)
- Yang Y, Chen H, Al MA, **Ndayishimiye JC**, Yang JR, Isabwe A, Luo A, Yang J. 2022. Urbanization reduces resource use efficiency of phytoplankton community by altering the environment and decreasing biodiversity. **Journal of Environmental Sciences**. 112:140–151. DOI: [10.1016/j.jes.2021.05.001](https://doi.org/10.1016/j.jes.2021.05.001)
- Kayiranga A, Luo Z, **Ndayishimiye JC**, Nkinahamira F, Cyubahiro E, Habumugisha T, Yan C, Guo J, Zhen Z, Tuyishimire A, Izabayo HD. 2021. Insights into thallium adsorption onto the soil, bambo-derived biochar, and biochar amended soil in Pomelo orchard. **Biochar**. 3:315–328. DOI: [10.1007/s42773-021-00095-1](https://doi.org/10.1007/s42773-021-00095-1)
- Nyirabuhoro P, Gao XF, **Ndayishimiye JC**, Xiao P, Mo YY, Ganjidoust H, Yang J. 2021. Responses of abundant and rare bacterioplankton to temporal change in a subtropical urban reservoir. **FEMS Microbiology Ecology**. fiab036. DOI: [10.1093/femsec/fiab036](https://doi.org/10.1093/femsec/fiab036)
- Simbi CH, Lin J, Yang D, **Ndayishimiye JC**, Liu Y, Li H, Xu L, Ma W. 2020. Decomposition and decoupling analysis of carbon dioxide emissions in African countries during 1984–2014. **Journal of Environmental Sciences**. 102:85–98. DOI: [10.1016/j.jes.2020.09.006](https://doi.org/10.1016/j.jes.2020.09.006)
- Ndayishimiye JC**, Nyirabuhoro P. 2015. A study on interdependent and asymmetrical behaviours associated with land use and land cover at Ruhande, Huye, Rwanda. **International Journal of Innovative Research and Development**. 4: 217–222
- Ndayishimiye JC**, Nyirabuhoro P. 2015. Concepts of Umutara and Imigongo colour-based design in the traditional arts of Rwandans and their applications in interior and fashion technologies. **International Journal of Innovative Research and Development**. 4: 334–341
- Nyirabuhoro P, Mugerwa T, Ndikubwimana JD, Munyangyinka JP, **Ndayishimiye JC**, Uwamungu P. 2015. A study on sediments depositional mechanism at Nayakankuppam coast, Tamilnadu, India. **International Journal of Engineering Research and General Science**, 3: 478–492
- Conference abstract**
- Ndayishimiye JC**, Mazei Y, Babeshko K, Tsyganov AN, Bobrov A, Mazei N, Saldaev D, Ivanovskii A, Nyirabuhoro P, Ren K, Abdullah Al M, Chen H, Wang W, Yang J. (2021). Multi-habitat testate amoeba in temperate and subtropical urban parks. In: Mitchell E.A.D. (Ed.), *2021 International Symposium on Testate Amoebae – ISTA 9 ¾* (pp. 24). [Program & book of abstracts, University of Neuchâtel](#)
- Scholarly article for scientific development**
- Ndayishimiye JC**. 2023. *Diffugia australis* (Playfair, 1917) Gauthier-Lièvre et Thomas, 1958. Encyclopedia. <https://encyclopedia.pub/image/detail/23>

DISTINGUISHED LECTURESHIPS

- August 2022, **Guest lecturer**, *An Introduction to Effective Data Analysis Techniques Using Open-Source Tools*, University of Rwanda, Kigali, Rwanda
- July 2021, **Guest lecturer**, *Open Source GIS Applications and Best Practices*, The Center for Earth and Natural Resource Sciences, Kigali, Rwanda
- December 2020, **Guest lecturer**, *R Programming for Ecological Data Analysis: An Introduction to Statistical Analysis and Visualization*, The Center for Earth and Natural Resource Sciences, Kigali, Rwanda

AWARDS, GRANTS, AND FELLOWSHIPS

January 2023–December 2023, **Research grant**, *Prevalence of Testate Amoebae in the Urban Environment: Do Distinct Ecological Niches Exert Similar Pressure on the Microbial Community?* National Natural Science Foundation of China, Grant number: 32250410317, Total amount: 200,000 RMB

September 2015–August 2018, **University of Chinese Academy of Sciences Scholarship**, a fully funded scholarship for a doctorate program awarded by the University of Chinese Academy of Sciences

September 2012–August 2014, **Rwanda Education Board Scholarship**, a fully funded scholarship for postgraduate studies awarded by the Ministry of Education of Rwanda

January 2006–November 2010, **Student Financing Agency Scholarship**, a fully funded scholarship for undergraduate studies awarded by the Ministry of Education of Rwanda

September 2020, **2020 Excellent International Student**, an award given to outstanding international students who have excelled academically and contributed to the community by the University of Chinese Academy of Sciences

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

April 2023, **Peer reviewer**, Land

March 2023, **Peer reviewer**, Minerals

March 2023, **Peer reviewer**, Remote Sensing

February 2023, **Peer reviewer**, Sustainability

January 2023, **Peer reviewer**, Life

December 2022, **Peer reviewer**, Sustainability

December 2022, **Organizing and Scientific Committee**, First Joint Workshop, Peatland ecology, carbon cycle and climate change

November 2022, **Peer reviewer**, Remote Sensing

October 2022, **Peer reviewer**, Sustainability

October 2022, **Organizing and Scientific Committee**, Second Joint Workshop, Urban microbiome: structure, function, management

September 2022, **Peer reviewer**, Minerals

September 2022, **Peer reviewer**, Sustainability

August 2022–Present, **Member**, Rwanda Geoscientists Society

January 2018–Present, **Member**, International Society of Testate Amoeba Researchers

June 2012–Present, **Member**, The Institution of Engineers Rwanda

TEACHING AND MENTORING

September 2022–Present, **Thesis advisor**, *Testate Amoeba Community Structured by Trace Elements and Silt Related to Urbanization and Headwater Dispersal in A Subtropical Flood Mitigation Reservoir*, Postgraduate student Hu Xiaoying from Shenzhen MSU-BIT University

September 2022–Present, **Thesis advisor**, *Temporal Dynamics and Assembly Mechanisms of Microbial Communities in Subtropical Ponds*, Postgraduate student Geng Zihan from Shenzhen MSU-BIT University

September 2022–Present, **Thesis advisor**, *Assembly Mechanisms and Co-occurrence Patterns of Testate Amoeba Communities Within Dry and Vegetated Periods of a Subtropical Flood Mitigation Reservoir and Its Watershed*, Postgraduate student Zhu Guangcan from Shenzhen MSU-BIT University

September 2022–December 2022, **Course instructor**, *Ecology of Novel Ecosystems*, Postgraduate students from Shenzhen MSU-BIT University

September 2022–December 2022, **Course instructor**, *Biology of Testate Amoebae*, Postgraduate students from Shenzhen MSU-BIT University

September 2021–Present, **Thesis co-advisor**, *Determinants of Bacterial Community Composition in a Subtropical Endorheic Urban Pond*, Postgraduate student Cao Lixi from Shenzhen MSU-BIT University

September 2021–Present, **Thesis advisor**, *Ecology of Testate Amoebae (Arcellinida, Euglyphida) In Subtropical Urban Ponds*, Shenzhen, Postgraduate student Cheng Xinyun from Shenzhen MSU-BIT University

September 2021–Present, **Thesis advisor**, *Artificial Intelligence-Based Morphological Identification and Analysis of Testate Amoebae*, Postgraduate student Zhao Qing from Shenzhen MSU-BIT University

December 2022, **Invited speaker**, *My UCAS-IUE Experience Before and After Graduation*, Institute of Urban Environment, Chinese Academy of Sciences

April 2022–July 2022, **Course instructor**, *Practical Biology*, Postgraduate students from Shenzhen MSU-BIT University

April 2021–July 2022, **Thesis co-advisor**, *Microspatial Distribution of Soil Testate Amoebae in Shenzhen Urban Parks*, Postgraduate student Zhong Yuantan from Shenzhen MSU-BIT University

PRACTICAL AND TECHNICAL SKILLS

Practical scientific procedures and techniques: Strong interpersonal skills, including the ability to do field work independently or in a team, and experimental techniques covering sampling and identification of testate amoebae

Programming languages and mathematical packages: Languages for statistical computing and graphics (R); C ++

Computer aided design (CAD) and graphics: AutoCAD; ArchiCAD; Artlantis; Adobe Illustrator; Photoshop; Image J; Photo Instrument

Other: QGIS; DIVA-GIS; IBM SPSS; OriginLab; PAST; PRIMER; CANOCO; Ecosim Professional; Gephi

LANGUAGES

English: native proficiency

French: native proficiency

Kinyarwanda: native

Mandarin Chinese: Basic level

VOLUNTEER EXPERIENCE

January 2004–Present, **Economic development initiatives**, Active participant in the Umuganda community service initiative in Rwanda, contributing to the improvement of the community through monthly clean-up activities, infrastructure development projects, and other community initiatives. Demonstrated strong teamwork, communication, and leadership skills in coordinating with fellow community members to complete projects

January 2012–July 2012, **Fundraising activities**, Active participant in fundraising activities for the Agaciro Development Fund, contributing to the economic development of Rwanda by supporting initiatives aimed at improving the lives of citizens. Utilized excellent communication and fundraising skills to engage potential donors and drive contributions to the fund

September 2016, **Rescue and Environmental restoration initiatives**, Volunteered in cleaning Xiamen, China, after the devastation of super typhoon Meranti, providing assistance with debris removal, relief goods distribution, and support for affected families. Collaborated with a team of volunteers to help restore infrastructure and clear public areas, demonstrating a strong commitment to community service and leadership skills

December 2021, **Fundraising activities**, Volunteered for a corporate social responsibility campaign by the Development Bank of Rwanda aimed at contributing to the Government of Rwanda's goal of connecting all households to electricity by 2024. Assisted in the organization

of fundraising events to support the project. Collaborated with other volunteers to develop and implement strategies to achieve project goals

REFERENCES

David M Wilkinson, Professor

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Brayford Pool, Lincoln LN6 7TS-UK, E-mail: dwilkinson@lincoln.ac.uk

Jun Yang, Ph.D., Professor

Institute of Urban Environment, Chinese Academy of Sciences
Xiamen 361021, China, Phone: +86-592-6190775, E-mail: jyang@iue.ac.cn

Yuri A Mazei, Ph.D., Vice-rector for international affairs and professor

Department of General Ecology and Hydrobiology, M V. Lomonosov Moscow State University
Leninskie Gory 1, 119991, Moscow, Russia, E-mail: yurimazei@mail.ru