
CURRICULUM VITAE – Elias NYANDWI, PhD

School/Centre : CGIS	POSITION TITLE: PG Coordinator
E-mail: e.nyandwi@ur.ac.rw and nyasept@gmail.com	ACADEMIC RANK: Senior Researcher/Lecturer

I. EDUCATION/TRAINING

Education (*Begin with baccalaureate or other initial professional education and include postdoctoral training.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
National University of Rwanda (NUR), Rwanda [1998-2003].	BSc	2003	Geography
International Institute for Geo-Information and Earth Observation, The Netherlands [2006-2008].	MSc.	2008	Geo-Information and Earth Observation for Environment & Natural Resource Management
University of Twente, The Netherlands [2012-2016].	PhD	2017	Spatial planning in Environmental health

. Selected short trainings

1. Completion of The Course Networking (CN) Training Webinar on Social Learning Tools and ePortfolio, October, 16th 2020
2. Participation a workshop of how to write fundable research proposals organized by NCST in collaboration with Southern African Research and Innovation Management Association (SARIMA) between 22nd and 24th July 2019, Lemigo Hotel, Kigali
3. Research Writeshop Workshop. Theme: Urban Development from 06 – 10 August 2018 at Giraffe Hotel, Mbezi Beach, Dar es Salaam, Tanzania
4. Successfully attended a one-week workshop for Lecturers on Improving Teaching and Learning at the University, 17th to 19th December 2014 Nobleza Hotel, Kigali Rwanda certificate of attendance
5. Methods for Biomass Estimation and Forest-Cover Mapping in the Tropics from Carbon Policy to Technical Training supported by PAN -TROPICAL MAPPING of FOREST COVER and ABOVE-GROUND BIOMASS PROJECT the Woods Hole Research Center, Falmouth, Massachusetts USA www.whrc.org/pantropical; Musanze, Rwanda (June, 2011).
6. Introduction to Ecological Gap Analysis techniques and Software, National University of Rwanda in collaboration with Southern Miss Univ. USA, (August 2009)
7. Use of low-cost earth observation data in environmental and climate monitoring applications: taking further the African Union - AMESD initiative” at CGIS-NUR, Huye Southern Province of Rwanda (October 2009).
8. Introduction to Remote Sensing and Spatial analysis at University of Kwazulu Natal, South Africa (November 2005)

II. Key qualifications and research interest

As spatial planning scientist Dr Elias has a strong experience in (i) Spatial analysis for Environment and sustainable development and (ii) Geographical health (spatial health/Geohealth and environmental epidemiology), such as :

- Geo-information (GIS & RS), for natural resources management: environmental system analysis and modeling, Ecosystem modeling and scenario development for environmental planning (rangelands and tropical forest
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management), Spatial Decision Support Systems (SDSS) for Natural Resource Assessment and Environmental Impact Assessment.

- Land Use Mapping, GIS for Multi-Criteria Evaluation for climate change resilient on infrastructure, remote sensing and Photo-Interpretation.
- Participatory GIS for Natural resources Management/forest management in Western Province specifically, as Principal Investigator for a Panafrican research project of three years financed by IDRC.
- Spatial modeling of natural hazard and risk management and development considering the climate change resilient in the infrastructure, road, water system, building settlement etc.
- Capacity building in Spatial analysis for water, soil, biodiversity and physical infrastructure management for the Masters students at different Colleges of University of Rwanda Science and the pioneer for the research activities on climate change resilient physical infrastructure using Geo-ICT technology;
- Spatial health modeling of disease distribution pattern in time and space with assessment of magnitude of contribution of risk factors for Malaria, Soil Transmitted Helminths, Schistosomiasis, etc.

III. Positions and Honours.

Position

March 2005 up to March 2008: **Research Assistant** at CGIS-NUR under Environmental and Natural Resources Management Research Unit (ENRM)

May 2008 – June 2012: **Head** of ENRM Research Unit

From January 2011 – June 2012 **Deputy Director** of CGIS- NUR

June 2012 up to December 2016: Researcher at CGIS – UR and Visiting Researcher as **PhD candidate** at University of Twente – Faculty of Geo-Information Science and Earth Observation, The Netherlands

December 2018 up to now: Postgraduate Programmes Coordinator in the CGIS

IV. Membership of professional bodies

- **ACNR** (Association pour la Conservation de la Nature au Rwanda), Membre since 2005
- Member of Regional Network for Conservation Educators of the Albertine Rift (**RNCEAR**), from 2008
- Member and Focal person of Albertine Rift Conservation Society (**ARCOS**), from 2008
- **EIS-Africa** (Environment Information Systems in Africa), Member since 2009
- **AARSE** (African Association of Remote Sensing of the Environment), Member since 2010
- Membership of the Steering Committee of the Climate Change Adaptation Project of formal ISAR, 2010
- Focal person of REMA/Rwanda Environmental Information Network (REIN), 2011
- Board Member of Indangaburezi College of Education, 2012
- Member of UR Task Team on Marshlands and Demonstration Farm Development, September 2017 up to now
- UR Representative member to the committee in charge of Border Demarcation and Materialization, October 2017 up to now
- Member of Research and Innovation Committee of CST College, May 2018 up to now

V. Peer-reviewed publications (in chronological order with latest dates first).

1. *Peer reviewed Papers*

1. Kagabo, J.; Kalinda, C.; Nshimiyimana, P.; Mbonigaba, J.B.; Ruberanziza, E.; **Nyandwi, E.**; Rujeni, N. Malacological Survey and Spatial Distribution of Intermediate Host Snails in Schistosomiasis Endemic Districts of Rwanda. *Trop. Med. Infect. Dis.* 2023, 8, 295. <https://doi.org/10.3390/tropicalmed8060295>
2. **Nyandwi, E.**; Veldkamp, T.; Amer, S.; Ruberanziza, E.; Rujeni, N.; Umulisa, I. Using Routinely Collected Health Records to Identify the Fine-Resolution Spatial Patterns of Soil-Transmitted Helminth Infections in Rwanda. *Trop. Med. Infect. Dis.* 2022, 7, 202. <https://doi.org/10.3390/tropicalmed7080202>
3. Ntakirutimana, A., **Nyandwi, E.**, Rujeni, N., Ingabire, C. M., Njunwa, K. J., Ntakirutimana, T., Rwanyiziri, G., Tuyishimire, J., & Ngabonziza, S. (2022). Evaluation of the control of water sanitation

- and hygiene-related disease through Community Hygiene Club Intervention in Rwanda. *Journal of Social, Behavioral, and Health Sciences*, 16(1), 195–210. <https://doi.org/10.5590/JSBHS.2022.16.1.1>
4. Sekanabo,D.; **Nyandwi, E.**; Hakizimana Khan, J.D, Thomas, V.M (2022), The Relationship Between Energy Intensity and GDP per Capita in Eastern African Countries (EAC): Evidence From Co-integration and Granger-Causality Investigation Analysis, 3rd African International Conference on Industrial Engineering and Operations Management- Sustainable Energy Theme.
 5. Sekanabo,D.; **Nyandwi, E.**; Hakizimana Khan, J.D, Thomas, V.M (2022), The Statistical Relationship between Economic Growth and Total Energy Use: Evidence from Panel Co-integration and Granger-causality Investigation of SSA Countries. *International Journal of Energy Economics and Policy*, 12(3);
 6. Nsengiyumva,J.P; Taremwa, N.K; **Nyandwi, E.**; Maridadi, E. and Nyirarwasa, A.(2021) Geospatial Analysis for Heavy Metals and Water Quality Assessment in Bugesera Agricultural Wetlands of Rwanda, *Rwanda Journal of Engineering, Science, Technology and Environment*, 4(1).
 7. Ngwijabagabo,H.;Niyonzima,T.;**Nyandwi,E.**;Hirwa,H.;Nishyirimbere,A.;Mwizerwa,F.;Hategekimana, G.;Barifashe,T.; Uwera, D.(2021), Spatial Suitability Analysis and Mapping of Agroforestry Areas. Case study of Musanze District in Northern Province of Rwanda. *Rwanda Journal of Engineering, Science, Technology and Environment*, 4(1).
 8. **Nyandwi, E.**, Osei, F.B., Veldkamp, T. and Amer, S. Modeling schistosomiasis spatial risk dynamics over time in Rwanda using zero-inflated Poisson regression. *Nature Scientific Reports* 10, 19276 (2020); <https://doi.org/10.1038/s41598-020-76288-8>.
 9. Ngwijabagabo, H., **Nyandwi, E.** and Barifashe, T. (2020). Integrating Local Community Perception and Experts’s Knowledge in Spatial Multi-Criteria Evaluation (SMCE) for Landfill Siting in Musanze Secondary City. *Rwanda Journal of Engineering, Science, Technology and Environment*, 3(1). <https://doi.org/10.4314/rjeste.v3i1.8S>.
 10. Ndoricyimpaye, E.L., Tuyishimire, J., Vanwambeke, S., Mutesa, L., **Nyandwi, E.**, Rujeni, N. and Coutelier J.P. (2020) L'épidémie de SARS-CoV-2 en Afrique Sub-Saharienne, questions, craintes et espoir. In *Louvain Médical*, 2020, 139 (05-06) 330-336. <http://hdl.handle.net/2078.1/231641>.
 11. Bernhard, K., Smith, T.E.L, Sabuhoro, E., **Nyandwi, E.** and Munanura, I. (2020) Effects of integrated conservation-development projects on unauthorized resource use in Volcanoes National Park, Rwanda: a mixed-methods spatio-temporal approach. *Oryx*. ISSN 0030-6053, <https://doi.org/10.1017/S0030605319000735>.
 12. Rujeni N, Mazimpaka A, Tumusiime M, **Nyandwi E**, Rutayisire G, Kayiranga P, Umulisa I, Ruberanziza E. , Osier F. and Mutapi, F. Pre-school aged children are exposed to Schistosoma through Lake Kivu in Rwanda, *AAS Open Research* 2019,2 (7). (<https://doi.org/10.12688/aasopenres.12930.1>).
 13. **Nyandwi, E.**, Veldkamp, A., Amer, S., Karema, C., & Umulisa, I. (2017). Schistosomiasis mansoni incidence data in Rwanda can improve prevalence assessments, by providing high-resolution hotspot and risk factors identification. *BMC Public Health*, 17(1), 845. [doi:10.1186/s12889-017-4816-4](https://doi.org/10.1186/s12889-017-4816-4).
 14. **Nyandwi, E.**, Veldkamp, A., Osei, F. B., & Amer, S. (2017). Spatio-temporal dynamics of schistosomiasis in Rwanda between 2001 and 2012: impact of the national Neglected Tropical Disease control programme. *Geospatial health*, 2017 May 8;12(1):514. [doi: 10.4081/gh.2017.514](https://doi.org/10.4081/gh.2017.514). [PMID: 28555470](https://pubmed.ncbi.nlm.nih.gov/28555470/).
 15. **Nyandwi, E.**, Veldkamp, T., & Amer, S. (2016). Regional climate sensitivity of wetland environments in Rwanda: the need for a location-specific approach. *Regional Environmental Change*, 16(6), 1635-1647. [doi:10.1007/s10113-015-0905-z](https://doi.org/10.1007/s10113-015-0905-z).
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16. Nyandwi E., GIS, and RS for Modelling Landform Controls on the Distribution of Forest Canopy Vascular Epiphyte, 2009, International Journal of Ecology & Development, Volume 16, Issue# S10, 2010.

2. Scientific and Professional Publications

17. Nduwamungu J., Nyandwi, E, Mazimpaka J.D, Mugiraneza T., Mukashema A., Uwayezu E., Rwanyiziri G. and Nzabanita V. (2012) Rwanda Forest Cover Mapping using high-resolution aerial photographs, GSDI Newsletter.
18. Nyandwi, E and MUKASHEMA A. (2011) Excessive Deforestation of Gishwati Mountainous Forest and Biodiversity changes, e-bulletin of Enda Lead Africa ict4d Research Program in March 2011.
19. Nyandwi E., Veldkamp T. and Amer S. (2015), Delineating Rwandan Wetland using topographic and Climatic parameters, GeoTech Rwanda 2015 – Kigali, 18-20 November 2015
20. Callixte Gatali, Dr. Léonidas Mbanzamihigo, Valentine Uwamariya et Elias Nyandwi, Perspectives d'utilisation des différentes sources Naturelles de minéraux en alimentation animal: cas de la source saline de Kunyu et la roche de Uwinka » Paper published and presented for first time at National Conference on Agricultural Research Outputs, Kigali January 29th – 1st February 2007.
21. SHILLING, M., Lasry, F., Nyandwi, E., Kayijamahe, E., Rulinda, C. and Bizimana, J.P. Connecting Rwanda through Space - Geoinformation and Web-Based Decision Support Systems for Poverty Reduction and Sustainable Development, Paper presented at AfricaGIS Conference at Pretoria /South Africa October 31st to November 4th, 2005.

VI. Research Support.

1. Selected completed projects

1. Current situation of schistosomiasis in Lake Muhazi and the socio-ecological factors influencing its transmission, **2018** in a multi-disciplinary team from UR –CHMS in collaboration with a team from Ministry of Environment and Ministry of health –RBC; in which I was working as *co-investigator for Spatial aspects*
 2. Landscape and spatial analysis to Support the Preparation of the Full Project Document for a GEF-7 Project 'Ecosystems/Landscape Approach to Climate Proof the Rural Settlement Program of Rwanda', UNDP-RWANDA & REMA, Kigali, April 2020, *Leading Expert*
 3. Rwanyiziri G., Nyandwi E., Tuyishimire J., Mugabowindekwe M., Kagoyire C. & Mulinga N. (2019a). Review of Policies and Strategies related to Ecosystem Management and Climate Resilient Agricultural System towards Environmental Sustainability Requirements in Rwanda. Kigali: Wildlife Conservation Society – Rwanda Country Program. As *Spatial planning expert and deputy team leader*;
 4. Rwanyiziri G., Nyandwi E., Tuyishimire J., Mugabowindekwe M., Kagoyire C. & Mulinga N. (2019b). Vital Signs Data Analysis for Ecosystem Management and Climate Resilient Agricultural System towards Environmental Sustainability Requirements in Rwanda. Kigali: Wildlife Conservation Society – Rwanda Country Program. As *Spatial planning expert and deputy team leader*;
 5. Rwanyiziri G., Nyandwi E., Mugabowindekwe M., Tuyishimire J. & Kagoyire C. (2019c). Rwanda Atlas. Environment, Agriculture & Livelihood Options. Kigali: Wildlife Conservation Society – Rwanda Country Program. As *Spatial planning expert and deputy team leader*.
 6. Maccioni, L., Gian, M.A, Nyandwi, E., Naramambuye, XF., Plançon. C., (2019). Technical Assistance to Enhance the Government of Rwanda's Capacities in the Agriculture Sector for the Sustainable Use of Land and Water Resources, Value Creation and Nutrition Security. Guideline for Rwanda Agriculture Spatial Planning., Technical Report MINAGRI –TECAN-EU. Kigali. As *GIS Expert*
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7. Nyandwi, E., Mukashema, A., Nduwamungu, J., Kayijamahe, E., Kagoyire, C., Nahimana, Y et Ford, R. Le rôle des SIG –P dans l’élaboration de modèles communautaires de gestion de Ressources forestières au Rwanda. Cas de la Province de l’Ouest; Research project proposed and accepted by Enda Lead Africa to IDRC Canada: Participatory Geographic Information Systems (PGIS) for a sustainable management of natural resources and food security Case studies: Benin, Kenya, Malawi, Rwanda, Senegal, Tunisia, April 2010- 2012., *As Project Coordinator*
8. Nyandwi, E., Mukashema, A., Gakwavu R.J. and SANO. J., Strategic Environmental Assessment for an Integrated Project of Development of Grouped Settlement in Rural Area of Rwanda “Imidugudu Project” for MINALOC/Settlement task force. EIA Concept, 2010, *as Team Leader*
9. Nyandwi, E., Akagera Basin-Transboundary Agro-ecosystem Management Methodology definition for Baseline data collection for FAO/MINAGRI, 2005
ftp://ftp.fao.org/agl/agll/kageradocs/04milestones_events/participants_development_assessment_methods.doc

2. Selected ongoing project

10. Sustainable Health Transformations in Theory and Practice (Transform): Improving the control of WASH related diseases and ill health conditions in Rwanda, two years’ project (Nov. 2019 to Oct. 2021). *Principal investigator.*
11. Analysis and Management of Patients with distinct clinical presentations of Malaria; Capacity building Research project co-developed and being implemented by UR and UCL Belgium with funds from ARES (2019 to 2024); *Appointed as Local Coordinator and PhD Students supervisor*
12. Enhancing Food Security in African Agricultural Systems (AfriCulTures) with the support of Remote Sensing. An EU Funded project (EU H2020 / SFS-43-2017) with 17 Partners from Europe and Africa (Nov. 2017 to Oct. 2021) *Appointed as co-principal investigator*
13. Remapping Schistosomiasis and Soil-Transmitted Helminthiasis in Rwanda, 2020. RBC Project funded by The END Fund in which I am contributing, through an MoU between UR and RBC, *as Spatial analyst and environmental epidemiologist.*
14. Using Ecological Integrity Assessment to Guide Wetlands Management in Rwanda, a two years’(2019-2020) research project lead by Albertine Rift Conservation Society (ARCOS) in collaboration with researchers from UR (CoEB, CGIS), IUCN, University of Bonn and University of Oxford; *Working as Spatial analyst and leading mapping team*
15. Completion of the Technical assistance in environmental and natural resource management rendered to REMA by UR through CoEB, 2020, Appointed as *Team Leader (Spatial planning specialist)*
16. Supervision of MSc students under projects in which UR – CoEB is collaborating with REMA namely LAFREC Projects on Gishwati –Mukura Landscape restoration (Sylvion Muramira) and Eba project on wetland conservation (Soda Bizimana),
17. Dr Felicia AKINYEMI, Dr Robert Ford, Elias Nyandwi, JP Bizimana and Vivien MUNYABURANGA; Health, environmental change and adaptive capacity: mapping, examining and anticipating future risks of water-related vector-borne diseases (Malaria, Rift Valley Fever and Schistos in eastern Africa, 2010. EU FP7 Project- *Associated researcher and Project Coordinator for the first year of implantation*

VII. Teaching.

1. Modules course material development

Several curriculum design, teaching material development and review wherever Geo-Information Sciences and applications are taught at different UR schools in all colleges and others High Learning Institutions for undergraduate and post-graduate programs.

a. In addition to the long term and deep development of curriculum of

1. **Elias NYANDWI** and Adrie MUKASHEMA, Principles of Remote Sensing and Photo-Interpretation. Teaching material development: Syllabus and Practical Exercises Protocol.
2. **Elias NYANDWI**, GIS for Environmental Management, course material design and development. Syllabus, lecturer and practical exercises protocol for Specialization Module in 3rd year Geography/Environmental Management.
3. **Elias NYANDWI** and Eugene KAYIJAMAHE, GIS for Multi Criteria Evaluation Techniques a course material design and development. Syllabus, lecturer and practical exercises protocol. Module though in PGD Program.
4. **Elias NYANDWI**, Eugene KAYIJAMAHE, Environmental Modeling with GIS and RS. Course material design and development. Syllabus, lecturer and practical exercises protocol for Specialization Module in 3rd year Geography/Environmental Management and for PGD Program in Geo-Sciences.

b. Recently, I have worked with CST, CAVM and CMHS in curriculum development and/or review and course delivery for the following post graduate programs:

5. **Elias NYANDWI**, Joseph NSENGIMANA and Dieudonné; current program reviews, with my particular contribution for reviewing the module entitled Spatial analysis in Conservation Science, November 2020.
6. Théoneste MUHIZI, **Elias NYANDWI** and Stanislas MUHINYUZA; Spatial statistics and GIS Course material design and development for a new master in Environmental chemistry and currently delivered to the first intake; since Avril 2019
7. **Elias NYANDWI**, Prof Sankaranarayanan and Dr Deepak Das; Components of GIS for Soil and Water applications and for Topography survey in the module of Research Methodology (SWE 6224). The course was developed and delivered since June 2018 to different intake of students in MSc Agricultural Engineering.
8. **Elias NYANDWI** and Prof F.X NARAMABUYE, curriculum design and delivery for the module entitled ASM6322 Erosion, Soil and Water Conservation, with special contribution on Erosion modeling and soil conservation, since 2018 for MSc in Agroforestry and Soil Management;
9. Manasé NZAYIRAMBAHO, Judith MUKAMURIGO and **Elias NYANDWI**, IT and GIS in Health System Information and Management, course material (Syllabus, slides and protocols for practical exercises) development and delivery since 2018;
10. **Elias NYANDWI**, Introduction to Spatial statistics for MSc in Geo-information for Environment and Sustainable Development, content review

2. Program Review

Entire MSc program design and/or review contribution

11. MSc program review: INES Ruhengeri - Review of a new MSc program as a requirement from HEC. The MSc in GIS for Natural Resources Management; 2020
12. UR- CGIS: Contribution to the design of new MSc in Land Administration to be hosted by CGIS – UR/CST, since 2017.

3. Module coordination and co-teaching/ Professional training Trainer

I am involved in different education/teaching activities at the University of Rwanda for undergraduate and post-graduate programs since 2006 up to now.

The recent and main teaching related activities are summarized in the table below.

#	Courses/Modules	Department/ Institutions	References person
Formal education			
1	Advanced Geological Survey with GIS & RS	Mining and Geology, 3 rd year since 2018	Dr Digne RWABUHUNGU, Dean SMG – CST
2	Principles of Remote Sensing and Photo-Interpretation	2 nd Year, Geography department, since 2008 up to now	Dr Jean Pierre BIZIMANA, Head of Department, SABE –CST
3	GIS for Environmental Modelling	3 rd year student of Geography department since 2008 up to	Dr Jean Pierre BIZIMANA, Head of Department, SABE –CST

		now	
4	GIS for Health	1 st year MSc. Students of MPH & EPI	Prof Aline UMUBYEYI, Dean SPH- CMHS
5	Geo-Information Sciences for Environmental Management (GI-EM) and Spatial Multi-Criteria Evaluation (SMCE)	2 nd year MSc Students in GI-ESD, Geography department	Dr Théophile NIYONZIMA, Program Coordinator, SABE – CST
6	Introduction to Spatial Statistics	1 st year MSc Students in GI-ESD, Geography department	Dr Théophile NIYONZIMA, Program Coordinator, SABE – CST
7	GIS for Soil, Water and Topographic survey	1 st year of MSc in Agricultural Engineering	Dr Rose NIYONKURU, Program Coordinator, CAVM
8	GIS for Soil and water Conservation	2 nd year of MSc Student in Agroforestry and Soil Conservation	Prof Dr FX Naramabuye, Module Leader, CAVM
9	Spatial analysis in Conservation Science	2 nd Master students in Biodiversity Conservation	Dr Joseph NSENGIMANA, Program Coordinator, CST
Selected Taylor made training			
10	Introduction to GIS for district professionals	Nyamasheke, Rubavu and Nyanza, 24 th -28 th June 2019, GIS Lab KIST 1 Building	Dr Gaspard Rwanyiziri, Director of CGIS
11	Capacity Assessment for Institutions in Rwanda – Baseline data collection Training workshop	We supported RCMRD Staff under request from RLMUA 28-29 June 2017; 20-22 May 2019 & 29/07 to 2/08 / 2019	Mr RUTAGENGWA Alexis, HoD-RLMUA
12	GIS and RS for Hydrological applications to 15 peoples	Nile Basin Initiative (NBI)	Prof Dr Gashagaza J.B/ National Coordinator NBI
13	Geo-Information for Geology 10 peoples, 2010	Office des Géologie et Mines du Rwanda (OGMR)	MUKAZITONI Sofia, GIS Officer/OGMR
14	GIS & Image Processing and Photo Interpretation for Rwanda Air force Members of Staff	Huye August, 8 th to September, 9 th 2011	Dr Gaspard Rwanyiziri, Director of CGIS

4. Post graduate Research Supervision

a. PhD Researchers with my co-supervision

Currently I am co-supervising/mentoring four PhD students with emphasis on the concept and application of spatial analysis in their research topics:

- 1) Joseph KAGABO, Quantification and Mapping of Water Contaminants and their Association with Infectious Diseases in Rwanda from UR- CHMS – School of Health sciences. *Co-supervised since 2019*,
- 2) Aline UWIMANA, Analysis and management of Nutrition/Immunity patients with Severe Malaria and asymptomatic case. *Co-supervised since 2020*;
- 3) Joseph TUYISHIMIRE, the spatial variation of immune response to malaria, schistosomiasis, soil transmitted helminths (STH) and microorganisms in Rwanda, *Co-supervised since 2019*
- 4) Désiré SEKANABO, Evaluating the contribution of Renewable Energy on economic growth of Sub-Saharan Africa (SSA). A case of 15 countries, since 2017. *Co-supervised since 2018*.

b. MSc students supervised

The list of student supervised and/or co-supervised is very long, to recall some, are summarized in the table below:

#	Student Name	Title/topic and year of completion	Comments
1	Theogene NDAYAMBAJE	Gishwati National Park land cover analysis from 2003 to 2015, Master's degree in Biodiversity Conservation and Natural Resources Management, 2017	As Main supervisor and co-supervised with Prof Donat NSABIMANA, very well defended
2	Alexis RUTAGENGWA	Analysis of Change of the Marshland Value in Rwanda: Case Study of Muvumba P8 irrigation scheme, Nyagatare District, Master of Science in Geo-Information Science for Environment and Sustainable Development, 2018	Co-supervised with Prof TWARABAMENYE Emmanuel, very well defended and later presented in Annual Agriculture Research Forum
3	Erasme MBAZAMIHIGO	Spatial trade-offs, synergies and traps between crops production and soil erosion. The Case of Western Province of Rwanda between the years 2000 and 201, Master of Science in Geo-Information Science for Environment and Sustainable Development, 2018	Co-supervised with Dr JP BIZIMANA, very well defended
4	Katie BERNHARD	Are integrated conservation-development investments spatially correlated with demand for protected area resources? <i>Mixed-methods spatiotemporal analysis of unauthorized resource use relative to tourism revenue sharing distribution and community development interventions in Rwanda's Volcanoes National Park</i> ; MSc in Environment And Development, The London School of Economics and Political Science, 2018	Co-supervised with Dr Thomas Smith. very well defended and published a paper out of the thesis
5	Daniel NTAWUMENYA	Spatial-temporal land- cover dynamics and environmental impact assessment in the former area of Akagera National Park, Master of Science in Geo-Information Science for Environment and Sustainable Development, 2019	As Main supervisor with co-supervision from Dr Gatari Callixte; Very well defended and currently with an advanced manuscript for publication
5	Jean Baptiste RWIGEMA	Investigation and Mapping of Soil Erosion, and guide for erosion control at micro-catchement of cyajongo; secoko subcatchment upper nyabarongo catchment of Ngororero District, Rwanda, Master in Soil and Water Engineering, 2020	Co-supervised with Prof FX NARAMABUYE, very well defended and a paper was submitted for publication out of the thesis
6	Gilbert MICOMYIZA	Assessment of the Spatial Distribution of Banana Xanthomonas Wilt (BXW) Disease Incidence in Rwanda, Master of Science in Geo-Information Science for Environment and Sustainable Development, 2020	Research project was selected and awarded a financial support from International Institute of Tropical Agriculture (IITA _Rwanda) and was co-supervised by Dr Hamoud Rukangantambara and Dr Julis Adewopo

#	Student Name	Title/topic and year of completion	Comments
7	Hyacinthe NGWIJABAGABO	Integrating local community perception and expert's knowledge in spatial multi-criteria evaluation (SMCE) for landfill siting. case study of Musanze city; Master of Science in Geo-Information Science for Environment and Sustainable Development, 2020	As Main supervisor with co-supervision from Mr Theodomir BARIFASHE, Very well defended and a paper is already published out of it.
8	Sylion MURAMIRA	Spatio-temporal evaluation of mine site rehabilitation using Geo-information techniques in the Mukura forest of the Gishwati-Mukura National Park (GMNP), Master of Science in Geo-Information Science for Environment and Sustainable Development, 2020	As main supervisor, research project was selected and awarded a financial support from REMA –LAFREC Project and was co-supervised by Prof Wali Umaru G. and Dr Brigitte Mukambangutsa, a manuscript is submitted for publication
9	Tharcisse TWIZEYIMANA	Design of appropriate hydraulic structures for sustainable runoff control in Nyabugogo catchment, with focus on Kinamba sub catchment, Master in Soil and Water Engineering, 2020	co-supervision with Prof. M Sankaranarayanan and Mr. Suresh Pande
10	Cedric TUYISHIME	Studies on the effect of rainfall, land and soil properties on landslides occurrence in the Gishwati and Mukura Landscape, Rwanda; Master in Soil and Water Engineering, 2020	co-supervision with Prof. M Sankaranarayanan and Mr. Suresh Pande and Prof. DUROTIMI John
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5. Honours or achievements in the field of teaching

- Curriculum development short course, Huye 2005 – certificate of attendance
- Successfully attended a one-week workshop for Lecturers on Improving Teaching and Learning at the University, 17th to 19th December 2014 Nobleza Hotel, Kigali Rwanda certificate of attendance
- Completion of The Course Networking (CN) Training Webinar on Social Learning Tools and ePortfolio, October, 16th 2020
- Participation a workshop of how to write fundable research proposals organized by NCST in collaboration with Southern African Research and Innovation Management Association (SARIMA) between 22nd and 24th July 2019, Lemigo Hotel, Kigali
- Research Writeshop Workshop. Theme: Urban Development from 06 – 10 August 2018 at Giraffe Hotel, Mbezi Beach, Dar es Salaam, Tanzania

VIII. Languages

- Kinyarwanda (native)
- English & French (speak fluently, read/write with high proficiency)

- Swahili (basic knowledge: speak, read and write)

IX. Certification

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience.

Elias Nyandwi, PhD

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