

Position

Postdoctorant

Home institution

Université Evangélique en Afrique

Current/Host institution

University of Abomey-Calavi

Background

- MSc in Biostatistics, University of Abomey-Calavi, 2018
- BSc in Animal Production, Université Evangélique en Afrique (DR Congo), 2011

Research project

In species distribution modelling, ecologists are often poorly resourced to collect data in ways that minimize uncertainties such as sampling bias, imperfect detection, and spatial autocorrelation that could impair performances of statistical modelling tools. Ecologists often have only the option of using Presence-only data for which the collection procedure is unknown and are therefore likely to induce serious biases in the estimation of species distribution. The literature shows that species characteristics could induce some uncertainty in species occurrence data. Inhomogeneous Poisson Point Process Models (IPPM) accounting for such uncertainties have been proposed. However, it appears that these models have never been tested by considering species' characteristics. My current research project quantify biases in data according to species characteristics, assess the effect of sampling bias, varying detection probability and spatial autocorrelation on the models performance based on different scenarios of the species' characteristics in order to provide the highlight circumstances in which these models give accurate estimates. Based on that knowledge, we will provide a clear guideline to model species distribution based on IPPM framework. For demonstration purpose, we will model the current and future distribution of endangered primate's species in DR Congo for their better conservation.

Awards and distinctions

- RUFORUM - GTA Doctoral Regional Research Grant Award: Grant # RU/2020/GTA/DRG/036 (2020-2022)

Profiles and Curriculum

- Researchgate : https://www.researchgate.net/profile/Mugumaarhahama_Yannick
- Google scholar: <https://scholar.google.com/citations?user=VT43Y2YAAAAJ&hl=en>

Total number of publications

- Articles : 15

Publications

- Bwana Mutwedu, V., Wafula Nyongesa, A., Ciza Azine, P., Katulanya Chiregereza, D., Herman Ngoumotsop, V., **Mugumaarhahama, Y.**, & Basengere Balthazar Ayagirwe, R. (2021). Growth performance and reproductive function impairment of glyphosate-based herbicide in male guinea pig (*Cavia porcellus*). *Veterinary Medicine and Science*, 7(1):1–9. DOI: 10.1002/vms3.443
- Cokola, M. C., **Mugumaarhahama, Y.**, Noël, G., Kazamwali, L. M., Bisimwa, E. B., Mugisho, J. Z., Aganze, V. M., Lubobo, A. K., & Francis, F. (2021). Fall Armyworm *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in South Kivu, DR Congo: Understanding How Season and Environmental Conditions Influence Field Scale Infestations. *Neotropical Entomology*. DOI: 10.1007/s13744-020-00833-3
- Cokola, M. C., **Mugumaarhahama, Y.**, Noël, G., Bisimwa, E. B., Bugeme, D. M., Chuma, G. B., Ndeko, A. B., & Francis, F. (2020). Bioclimatic zonation and potential distribution of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in South Kivu Province, DR Congo. *BMC Ecology*, 20(66): 1-13. DOI: 10.1186/s12898-020-00335-1
- **Mugumaarhahama, Y.**, Bwana Mutwedu, V., Muzee Kazamwali, L., Ciza Mushagalusa, A., Kwankanaba Bantuzeko, F., Shakanye Ndjadi, S., Byamungu Ndeko, A., Cizungu Cirezi, N., Ciza Azine, P. & Basengere-Balthazar Ayagirwe, R., (2020). Typology of smallholder's pig production systems in South Kivu, Democratic Republic of Congo: Challenges and opportunities. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 121(1), 135–146. DOI:10.17170/kobra-202005281301
- Ndeko B.A., Basimine G.C., Mukengere B.E., **Mugumaarhahama Y.**, Nabintu N.B., Rehema P., Mushagalusa N.G. (2020). Comparative effect of *Rhizophagus irregularis* strain on cassava root development and Phosphorus uptake under acidic soils conditions of Walungu territory, Eastern DR Congo. *Journal of Applied Biosciences*. 48: 15167 – 15175. DOI: 10.35759/JABs.v148.1
- Ndjadi S.S., Vumilia K.R., Ahoton E.L., Saidou A, Orou B.D., **Mugumaarhahama Y.**, Kazamwali M.L., & Mushagalusa N.G. (2020). Typology and Prospects for the Improvement of Market Gardening Systems in South-Kivu, Eastern DR Congo. *Journal of Agricultural Science* 12(6): p136. DOI: 10.5539/jas.v12n6p136
- Patrick B.S., Ahadi B. B., Mutwedu B.V., **Mugumaarhahama Y.**, Munga A., Mitima B., Kamgang V.W. & Ayagirwe R.B.B. (2020). Effects of coat color pattern and sex on physiological traits and heat tolerance of indigenous goats exposed to solar radiation. *Journal of Animal Behaviour Biometeorology* 8:142-151. DOI: doi.org/10.31893/jabb.20017
- Mutwedu V.B., Buuma B.K., Mushagalusa A.C., Bisimwa N.P., Cirezi N.C., **Mugumaarhahama Y.** & Ayagirwe R.B.B. (2019). Prevalence and economic losses of calf fetal wastage in ELAKAT public slaughterhouse of Bukavu, Democratic Republic of Congo. *Veterinary World*, 12(10): 1644-1649. DOI: 10.14202/vetworld.2019.1644-1649
- Ndeko B.A., Basimine G.C., **Mugumaarhahama Y.**, Serge Ndjadi S.S., Bukomarhe C. & Zihahirwa K.P (2019). Diagnostic des systèmes de production à base du sorgho dans les

hautes et basses altitudes au Sud - Kivu à l'Est de la RDC : perspectives d'amélioration de la filière. *Afrique Science* 15(1) (2019) 37 – 49

- Ndjadi S.S., Basimine G.C., Masudi G.F., Kyalondawa A.M., **Mugumaarhahama Y.** & Vwima S.N. (2019). Déterminants de la performance des exploitations agricoles à Kabare, Sud-Kivu, est de la République Démocratique du Congo. *Agronomie Africaine* 31 (2) : 199 - 212.
- Thierry K.M., **Mugumaarhahama Y.**, Mutwedu B.V., Ayagirwe R.B.B. & Umba M.J. (2019). Production des cobayes comme animal de boucherie en zones post-conflit du Sud-Kivu, Est de la RD Congo. *Journal of Animal & Plant Sciences*, 40(1): 6554-6572
- Ayagirwe R.B.B., Meutchieye F., **Mugumaarhahama Y.**, Mutwedu V., Baenyi P. & Manjeli Y. (2019). Phenotypic variability and typology of cavy (*Cavia porcellus*) production in the Democratic Republic of Congo (DRC). *Genetics and Biodiversity Journal* 3(1):11-23
- Mutwedu V.B., Ayagirwe R.B.B., **Mugumaarhahama Y.**, Ganza B., Aksanti B., Rehema M., Bisimwa B.E., Karume K., Balezi A.Z. & Mushagalusa N.G. (2018). Effets des techniques de transformation sur la qualité du fromage blanc traditionnel « Mashanza » produit au Sud-Kivu, RD Congo. *Journal of Animal & Plant Sciences* 38(1): 6097-6111
- **Mugumaarhahama Y.**, Ayagirwe R.B.B., Mutwedu V.B., Jadiki M.J., Baenyi P., Mushagalusa C.A. & Bisimwa B.E. (2016). Caractérisation des systèmes de production de poule locale dans deux zones agro-écologiques du Sud-Kivu (République Démocratique du Congo). *Livestock Research for Rural Development* 28 (1)
- Mutwedu V.B., Ayagirwe R.B.B., Metre K.T., **Mugumaarhahama Y.**, Sadiki M.J. & Bisimwa B.E. (2015). Systèmes de production cunicole en milieu paysan au Sud-Kivu, est de la RD Congo. *Livestock Research for Rural Development* 27(10)

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