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Expanding the coverage of ecosystem services in life cycle assessment: an interdisciplinary venture

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Citation

Migoni Alexandre, E. (2023, October 5). *Expanding the coverage of ecosystem services in life cycle assessment: an interdisciplinary venture*. Retrieved from <https://hdl.handle.net/1887/3643103>

Version: Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

Acknowledgements

The decision to pursue an academic degree of at least four years would not have been easy if it weren't for the unwavering support of my family, friends, and colleagues. In particular, I am grateful to my supervisors, Peter van Bodegom and Jeroen Guinée, whose guidance and support have helped me improve as a researcher, as well for their endless patience in reading through the mountains of pages for which they always took the time to provide ample feedback. Your commitment to supervising and supporting my MSc thesis project, and later on my PhD trajectory, has been a privilege for which I will be forever grateful.

Going all the way back to my years as an MSc student at the Industrial Ecology program, I would like to thank my friends Isha, Diana, Leon, Brenda, Franco, Davide, Michelle, Niels, Aldo, Sydney and Thijs, who made the beginning of that journey a happy memory despite all the losses faced in those years. I would like to thank the friends who, in recent years, have become family, Jara, Nicky, Roël, Ilonka, as well as my friends from Mexico, Raquel and Karla Mariana, who are always with me in heart, no matter where in the world we are. Special thanks to my pal, Carlos Felipe, aka "Papyrus". Thank you for the laughs, the music, the whisky, and all the encouragement.

I would also like to express my gratitude to the scientific and support staff of the Institute of Environmental Sciences (CML) for creating a working environment that always felt as welcoming as home. To my colleagues, Glen, Bertram, Zhongxiao, as well as everyone that joined and supported the PhD committee, thank you for making the office hours inspiring as well as entertaining. A dedicated shout-out goes to the manager and crew of the Coffeecompany in Delft, for their endless supply of caffeine and good vibes.

I want to thank my partner in crime and cosmic twin flame, Maikel, for always finding a way to make me smile, laugh and providing the immense support I needed during the last stages of writing some of these chapters. Lastly, this thesis is dedicated to my family, starting with my mother, Amelia, who taught me that dreams can be achieved, to my sister Jackeline, for supporting those dreams, even if they meant a significant distance between us, to my younger sister Marissa and all the teachings of my father. I carry all of you in my heart.

List of publications

Alejandro, E. M., Scherer, L., Guinée, J. B., Aizen, M. A., Albrecht, M., Balzan, M. V., Bartomeus, I., Bevk, D., Burkle, L. A., Clough, Y., Cole, L. J., Delphia, C. M., Dicks, L. V., Garratt, M. P. D., Kleijn, D., Kovács-Hostyánszki, A., Mandelik, Y., Paxton, R. J., Petanidou, T., Potts, S., Sárospataki, M., Schulp, C.J.E., Stavrínides, M., Stein, K., Stout, J.C., Szentgyörgyi, H., Varnava, A.I., Woodcock, B.A., van Bodegom, P. M. (2023). Characterization Factors to Assess Land Use Impacts on Pollinator Abundance in Life Cycle Assessment. *Environmental Science and Technology*, 57(8), 3445–3454. <https://doi.org/10.1021/acs.est.2c05311>

Alejandro, E. M., Guinée, J. B., & van Bodegom, P. M. (2022). Assessing the use of land system archetypes to increase regional variability representation in country-specific characterization factors: a soil erosion case study. *International Journal of Life Cycle Assessment*, 27(3), 409–418. <https://doi.org/10.1007/s11367-022-02037-w>

Alejandro, E. M., Potts, S. G., Guinée, J. B., & van Bodegom, P. M. (2022). Characterisation model approach for LCA to estimate land use impacts on pollinator abundance and illustrative characterisation factors. *Journal of Cleaner Production*, 346(February), e131043. <https://doi.org/10.1016/j.jclepro.2022.131043>

Scherer, L., De Laurentiis, V., Marques, A., Michelsen, O., **Alejandro, E. M.**, Pfister, S., Rosa, F., & Rugani, B. (2021). Linking land use inventories to biodiversity impact assessment methods. *International Journal of Life Cycle Assessment*, 26(12), 2315–2320. <https://doi.org/10.1007/s11367-021-02003-y>

Alejandro, E. M., van Bodegom, P. M., & Guinée, J. B. (2019). Towards an optimal coverage of ecosystem services in LCA. *Journal of Cleaner Production*, 231, 714–722. <https://doi.org/10.1016/j.jclepro.2019.05.284>

Curriculum Vitae

Elizabeth Migoni Alejandre was born in 1991 and grew up in the coastal city of Ensenada, Baja California, Mexico. In 2007 she moved for a year to the city of Arlon, in the south of Belgium, as part of the 'World Exchange Program', completing a year of secondary education at the Athénée Royal d'Arlon. In 2014, she obtained her bachelor's degree in Biology at the Autonomous University of Baja California. During her first years of bachelors, she specialized on molecular biology at the department of Biotechnology & Immunology, where she worked as a research intern on the development of genetically modified microalgae for the production of vaccines and biofuels, and later on, on the development of a fast H1N1 Flu test with llama antibodies. Her studies were complemented by extensive volunteer work in multidisciplinary fields, where after a summer onboard of a Physical Oceanographic research cruise led by CICESE research center, her interests radically shifted towards environmental studies.

In 2014, she obtained a National Science and Engineering Scholarship awarded by the Mexican government for graduate studies abroad and moved in 2015 to The Netherlands, to pursue a M.Sc. degree in Industrial Ecology at the Institute of Environmental Sciences (CML) of Leiden University. In her master thesis she explored the comparison of alternative baselines for the characterization of land use impacts on ecosystem services for Life Cycle Assessment (LCA). Once graduated, she started her PhD studies on further exploring the potential of assessing ecosystem service impacts in LCA studies, focusing on the challenges of impact assessment characterization and spatial differentiation. Throughout the period 2017-2022, Elizabeth also worked part-time as environmental consultant for companies such as GoodFuels and The Ocean Cleanup, and as project lead at the Urban Energy Institute at the Delft University of Technology (TU Delft). Aiming at a never-ending challenge of exploring new fields and working at the interface of multiple disciplines, Elizabeth has worked since 2022 as researcher at TU Delft, assessing the environmental implications of biomaterials and their application in the built environment.

Between a pile of fiction novels and acrylic paint, Elizabeth enjoys sketching characters living in surreal planetary landscapes, listening to music, and constantly seeking for the hidden delights of everyday life.