

Ecological Footprint Assessment as a Pathway to Sustainable Higher Education in the OpenEU Alliance

ABSTRACT

The integration of sustainable practices into the daily operations and infrastructure of Higher Education Institutions (HEIs) plays a vital role in advancing the Sustainable Development Goals (SDGs) (Purcell et al., 2019; Žalėnienė & Pereira, 2021). Developing action-oriented competences within HEIs, such as collaborative sustainability governance strategies and actions, is a key in this process (Mapar & Caeiro, 2024; Saleem & Dare, 2023). As part of this effort, assessing and reducing the Ecological Footprint (EF) has become a priority in many HEIs, with EF monitoring serving as an essential decision-making tool to encourage more responsible resource use within the institution (Valls-Val & Bovea, 2021).

The OpenEU Alliance, coordinated by the Universitat Oberta de Catalunya, brings together ten European HEIs — including both Distance Teaching and face-to-face HEIs — in a joint effort to drive digital transformation in higher education and establish a pan-European, student-centred, inclusive, digital, and green Distance Teaching university. As a part of this broader initiative, a specific task has been set to reduce the Alliance EF by 5% over four years (2024–2028). To that end, the adopted tool was the University Footprint Calculator (Mancini et al., 2022), an open-access digital tool, developed under the EUSTEPS Erasmus project (EUSTEPS, n.d.), that allows HEIs to evaluate and keep records of consumption of natural resources and ecosystem services within their activities and operations. The methodology involved: (i) establishing the baseline EF for each university in Year 1, and propose a set of recommendations to reduce the EF based on the most impactful categories; and (ii) monitoring the changes over the following three years, to track the progress towards the overall OpenEU EF reduction by Year 4.

This study presents the outcomes of the first year of OpenEU Alliance EF assessment, in which key initial milestones were achieved, including the establishment of a Community of Practice in Ecological Footprint, with representatives from all partner universities. Activities comprised two introductory meetings and a training session to explain the EUSTEPS calculator and the data collection process, followed by regular meetings to share the efforts and challenges within the process. Based on that, each partner university collected its data on infrastructure and utility categories (e.g., energy use, buildings) and community-related activities (such as mobility for academic purposes or food services). The achieved results provide a solid foundation for developing the recommendations and implementing future actions.

The collaborative framework, fostered within the OpenEU Alliance and supported by its baseline assessment, not only enhances data transparency but also builds institutional capacity to implement targeted, impactful measures for reducing the EF. Through continued monitoring and shared learning, the Alliance will achieve its ultimate EF reduction target by 2028, contributing tangibly to the broader goals of the OpenEU Alliance on digital transformation, inclusivity, and green higher education.

REFERENCES (OPTIONAL)

EUSTEPS. (n.d.). Because education is key. <https://eusteps.eu>

Mancini, M.S., Galli, A., Bacelar Nicolau, P., Caeiro, S., Galanis, N., Gigliotti, M., Malandrakis, G., Mapar, M., Moreno Pires, S., Niccolucci, V., Nicolau, M., Papadopoulou, A., Patrizi, N., Pulselli, F.M., Shaffer, M., Theodossiou, N., Wambersie, L., Williams, R. (2022). EUSTEPS University Footprint Calculator – User Manual. https://www.eusteps.eu/wp-content/uploads/2022/12/EUSTEPS_Calculator_Manual_202210_EN.pdf.

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Mapar, M., & Caeiro, S. (2024). Education. In G. Ubachs (Ed.), *Green Campus Initiatives in Online and Distance Higher Education* (pp. 22–35). EADTU.

Purcell, W. M., Henriksen, H., & Spengler, J. D. (2019). Universities as the engine of transformational sustainability toward delivering the sustainable development goals: “Living labs” for sustainability. *International Journal of Sustainability in Higher Education*, 20(8), 1343–1357. <https://doi.org/10.1108/IJSHE-02-2019-0103>

Saleem, A., & Dare, P. S. (2023). Unmasking the Action-Oriented ESD Approach to Acting Environmentally Friendly. *Sustainability*, 15(2), 1675. <https://doi.org/10.3390/su15021675>

Valls-Val, K., & Bovea, M. D. (2021). Carbon footprint in Higher Education Institutions: A literature review and prospects for future research. *Clean Technologies and Environmental Policy*, 23(9), 2523–2542. <https://doi.org/10.1007/s10098-021-02180-2>

Žalėnienė, I., & Pereira, P. (2021). Higher Education For Sustainability: A Global Perspective. *Geography and Sustainability*, 2(2), 99–106. <https://doi.org/10.1016/j.geosus.2021.05.001>

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