

Life Cycle Assessment

Scientific publications

Empirical perspectives on approaches to teach life cycle assessment in higher education

A comprehensive understanding of ecological impacts is paramount for preparing a generation of informed and environmentally conscious problem-solvers.

Higher education institutions recognize their role as **contributors to environmental literacy and competencies necessary for prompting a sustainable clean environment**. Life cycle assessments (LCA) provide one channel for students to understand and quantify the consequences of production and consumption. This study explores the **current teaching approaches** together with learning objectives and disciplinary contexts of LCA courses taught at universities, highlighting their **global expansion and interdisciplinary relevance**.

Employing a mixed-methods approach, including a systematic literature review, curriculum analysis of the current course landscape at European universities, and a global survey among lecturers, the research identifies **key trends in LCA education**.

Particular attention is paid to how LCA education is conducted and whether students are confronted with the same challenges as practitioners.

Findings from empirical data emphasize the growing adoption of active learning methods, such as **case studies and project-based collaborations**, alongside traditional lectures. It has become apparent that instructors are already striving to enhance the LCA methodology with practical engagement.

Despite notable progress, **challenges persist**, including the **need for standardization and alignment with industry expectations**.

Moreover, this study provides a foundation for advancing LCA didactics through more effective approaches.

Global evolution of research on LCA : A data-driven visualization of collaboration, frontier identification, and future trend

This study presents a systematic bibliometric analysis of 10,430 publications with "Life Cycle Assessment" or "LCA" in their titles, retrieved from the Web of Science database covering 2000-2024. Results reveal that LCA research has expanded at a near-exponential pace, with annual outputs growing from 35 papers in 2000 to 1882 in 2024—corresponding to a **compound annual growth rate of 18 %**. By 2024, China had become the leading contributor (10.61 % of publications), while the Netherlands recorded the highest citation impact (Citations Per Publication, CPP = 63.65). Keyword co-occurrence analysis identified **four dominant thematic domains**:

- environmental impact metrics,
- uncertainty assessment,
- renewable energy systems,
- and circular economy.

Temporal trend analysis of 8904 terms highlighted surging interest in "sustainability assessment," "residential buildings," and "food waste," alongside declining attention to "allocation" and first-generation biofuels (e.g., bioethanol, biodiesel).

These shifts mirror **persistent methodological challenges**, particularly in **data quality, standardization, and uncertainty handling**.

Together, the findings illustrate LCA's transformation into a dynamic platform at the intersection of environmental modeling and decision support, offering strategic potential to advance integrated sustainability research, innovation, and governance.

« Use of biomass
and ICV of bio-based materials »
call for tender attributed
to the consortium

Newsletter

Life Cycle Assessment

Call for contributions

Special Issue: Prospective LCA - Recent Advancements and Future Directions

The International Journal of Life Cycle Assessment (IJLCA) invites submissions for its Special Issue on **Prospective LCA : Advances and Future Pathways**.

This issue aims to enhance prospective LCA knowledge and practice by tackling key challenges. The IJLCA welcomes research articles, short original communications, reviews, and case studies exploring innovative methods, tools, and applications for prospective LCA. **Contributions can focus on methodological advancements, practical case studies, comprehensive reviews, or critical viewpoints** to shape the future of LCA.

Deadline of submission: **30 November 2025**.

Call for applications

Nature credits roadmap of European Commission:

- What are **nature credits**?
- How could nature credits work in practice?
- What would be the **benefits to companies** (and financial institutions) of using nature credits?
- Why are nature credits beneficial for farmers, foresters and other actors? Will it create **additional administrative burden** or negatively **affect food security**?
- How will you ensure the **involvement** of land managers and local communities?
- How much **financing** could nature credits raise in Europe?
- Are there already **examples** of working nature credit schemes?
- What is the **added value of EU work on nature credits**, on top of individual projects?
- What is the **difference between carbon credits and nature credits**? Will nature credits overlap with the carbon credit markets?
- What is the **difference between certificates and credits**?
- Are you looking at a timeline to develop nature credit markets?

If you are interested to participate to the expert group: [Register to Commission expert groups and other similar entities](#).

Upcoming dates

Follow up of PEP recommendations update :

The following PEF (Product Environmental Footprint) TAB (Technical Advisory Board) meetings have been added by DG ENV according to the updated following calendar:

- **6 & 7 October:** review of EF impact assessment methods + harmonization of carbon accounting,
- **10 November:** overview of revised EF Recommendation v1,
- **20 November:** backup meeting,
- **15 December:** overview of revised recommendation v2, next steps.

The overall goal of these additional meetings is to generate a first draft of an updated "PEF recommendation". The key outcomes which will support the Digital Product Passports of products.

Upcoming events

9-12 sept

[LCM 2025](#)
(Palermo, Italia)

30 sept -
2 Oct 2025

[From less bad to good enough](#)
(Helsingor, Denmark)

18-19 Nov
2025

Second edition
of [MCV](#)
(Bordeaux)

19 March 2026

SCORE LCA
seminar
(PARIS)

17 - 21 May
2026

[SETAC Europe 36th Annual Meeting](#)
(Maastricht, Netherlands)