

# Tool for Monitoring Environmental Sustainability through LCA

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## Introduction to Good Practice

The Good Practice concerns the development and implementation of a tool for monitoring environmental sustainability through Life Cycle Assessment (LCA) in broiler chicken farms. The initiative falls within the area of environmental sustainability, with a particular focus on improving carbon emissions reporting, addressing the growing need of the poultry sector to measure, monitor, and reliably communicate its environmental performance.



## Background & challenges

The Good Practice was developed as a pilot project to create a new environmental sustainability monitoring tool applicable to different broiler production systems, both intensive and extensive. The objective is to simultaneously address the needs of farmers, vertically integrated supply chains, and certification bodies, in view of future environmental certifications.

The tool was jointly developed by the University of Padua and the University of Tuscia within the framework of the National AgriTech Center project, and specifically as part of the activities of the SOLSTICE living lab network, established within Spoke 5 (Task 5.3.8 – Living labs for assessing the overall sustainability of livestock systems through Life Cycle Assessment). The tool is currently being tested within one of the main fully integrated poultry supply chains in Italy. The main challenge addressed is the structured and standardized collection of environmental data, while ensuring ease of use and reliability of the results.

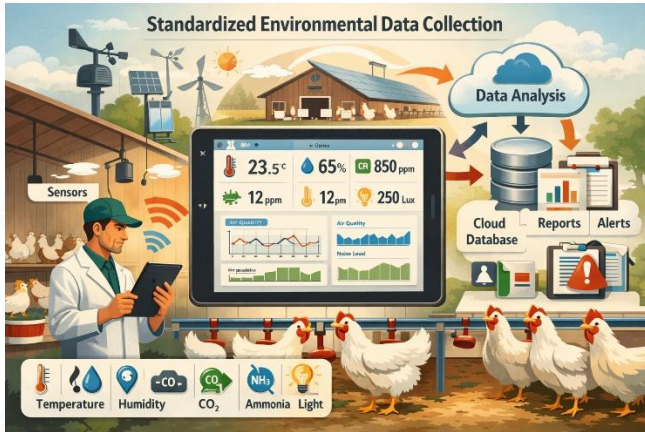


Fig. 1 – Standardised environmental data collection (AI-generated image)



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## Additional information

The Good Practice is applicable to a wide range of farming

systems, including:

- conventional large- and small-scale farms;
- free-range systems, organic farms, and slow-growing systems;
- Label Rouge or similarly labeled systems.

Currently, adoption is limited to a small number of farms on a voluntary basis. The tool is expected to reach Technology Readiness Level (TRL) 7 by February 2026. In a subsequent phase, the development of a dedicated app may be considered, replacing the current spreadsheet-based calculator, in order to improve usability for field technicians.



Fig. 2 – Broiler farming

## Benefits

The implementation of the Good Practice requires minimal effort for data entry, promoting greater awareness among farmers and supply chain operators regarding emissions and on-farm environmental performance.

The main benefits for farmers and producers include:

- increased profitability, also through financial incentives awarded by the integrator for good productive performance (ADG and FCR);
- improved compliance with regulations and supply chain requirements;
- strengthening of company- and sector-level reputation.

No additional costs were identified (audits, permits, or regulatory compliance adjustments). A potential risk is the possible obsolescence of the tool if it is not periodically updated.

## Additional information

The implementation of this good practice is characterized by very low costs and high accessibility. The proposed tool will be free and open access and requires limited effort, estimated at around one working day per farm per year (€129.6/year), with no need for significant investments or additional costs related to audits, permits, or regulatory compliance. The practice could also offer opportunities for additional income linked to the certification of carbon removals, carbon farming and carbon storage initiatives, as well as the production and sale of renewable energy. A further element of value is represented by the indirect benefits this good practice can provide, particularly in supporting improved bird health management, in addition to contributing to environmental sustainability objectives.



FAO (2018): Environmental Performance of Poultry Supply Chains: Guidelines for Assessment.

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