Food and Agriculture Organization of the United Nations

LIVESTOCK ENVIRONMENTAL ASSESSMENT AND PERFORMANCE (LEAP) PARTNERSHIP

OVERVIEW OF LEAP PRODUCTS

The LEAP Partnership has established ten Technical Advisory Groups (TAGs) in the following areas: animal feeds, poultry, small ruminants, large ruminants, pigs, nutrient cycling, water footprinting, soil carbon stocks and stock changes, biodiversity and feed additives.

Over 300 experts have been involved in creation of guidance documents in these areas critical to the sustainability of global food and agricultural production systems. These experts have been drawn from academia, government, industry and non-governmental organizations to ensure a broad based consensus approach.

To date, LEAP has produced a suite of background and guidance documents:

- **Background and supporting documents:** LEAP has produced to review documents in support of guideline developments. One is an overview of methodological approaches for the transition to sustainable food and agriculture. Second is a review of indicators and methods for biodiversity assessment at global scale.

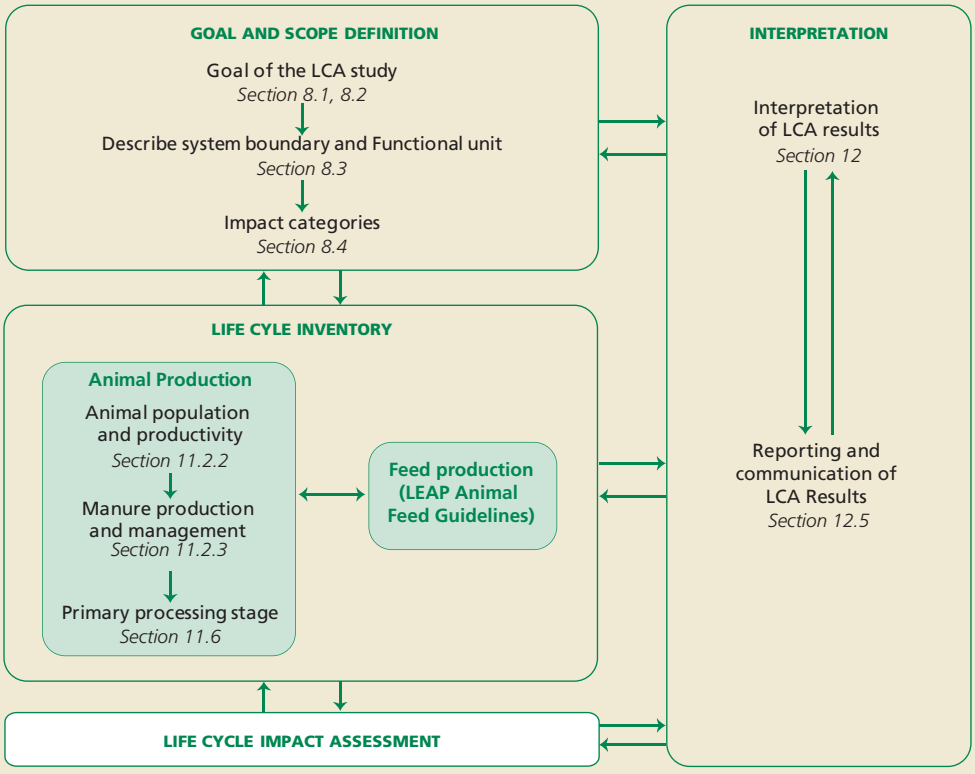
- **Published products:** LEAP has produced seven guidelines which have undergone the complete development and review process, which is described below. These include Guidelines for animal feeds, small ruminants, large ruminants, poultry, pigs, nutrients, soil carbon stocks and stock changes. In addition, LEAP has built consensus on reference principles for the assessment of livestock impact on biodiversity. LEAP has also developed a database of emissions, emission intensities and life cycle inventory for 5 main animal feed crops: maize, wheat, barley, soybean and cassava.

GUIDING PRINCIPLES

Five guiding principles support users in their application of the recommended methodologies on life cycle assessment (LCA). These principles are consistent across the guidance documents developed within the LEAP Partnership. They apply to all the steps, from goal and scope definition, data collection and lifecycle inventory modelling, through to reporting. Adhering to these principles ensures that any assessment made in accordance with the methodology is conducted in a robust and transparent manner. The principles can also guide users when making choices not specified by the guidelines.

1. Life Cycle Perspective

"LCA considers the entire life cycle of a product, from raw material extraction and acquisition, through energy and material production and manufacturing, to use and end of life treatment and final disposal. Through such a systematic overview and perspective, the shifting of a potential environmental burden between life cycle stages or individual processes can be identified and possibly avoided." (ISO 14040:2006, 4.1.2). Figure 1 presents a schematic view of the linkage of lifecycle assessment phases and livestock supply chains.



2. Relative Approach And Functional Unit

"LCA is a relative approach structured around a functional unit, which defines what is being studied" ((ISO 14040:2006, 4.1.6).

3. Data Quality

Relevance: Data, accounting methodologies and reporting shall be appropriate to the decision making needs of the intended users; Completeness: Data collection to support quantification of environmental performance shall include all environmentally relevant material/energy flows and other environmental interventions; Consistency: Data that are consistent with these guidelines shall be used throughout the inventory to allow for meaningful comparisons and reproducibility; Accuracy: Sufficient accuracy shall be achieved to enable intended users to make decisions with reasonable confidence.

4. Transparency

"Due to the inherent complexity in LCA, transparency is an important guiding principle in executing LCAs, in order to ensure a proper interpretation of the results" (ISO 14040:2006, 4.1.6).

5. Priority of scientific approach

"Decisions within an LCA are preferably based on natural science. If this is not possible, other scientific approaches (e.g. from social and economic sciences) may be used or international conventions may be referred to" (ISO 14040:2006, 4.1.8).

INTENDED USERS AND OBJECTIVES:

The methodology and guidance developed here can be used by stakeholders in all countries and across the wide range of feed and livestock production systems. In developing the guidelines, it was assumed that the primary users will be individuals or organizations with a good working knowledge of LCA. The main purpose of the guidelines is to provide a sufficient definition of calculation methods and data requirements to enable consistent application of LCA across differing poultry supply chains. This guidance is relevant to a wide range of livestock stakeholders including:

- feed and livestock producers who wish to develop inventories of their on-farm resources and assess the performance of their production systems;
- supply chain partners, such as feed producers, farmers and processors, seeking a better understanding of the environmental performance of products in their production processes; and
- policy makers interested in developing accounting and reporting specifications for livestock supply chains.

The benefits of this approach include:

- the use of a recognized, robust and transparent methodology developed to take account of the nature of livestock supply chains;
- the identification of supply chain hotspots and opportunities to improve and reduce environmental impact;
- the identification of opportunities to increase efficiency and productivity;
- the ability to benchmark performance internally or against industry standards;
- the provision of support for reporting and communication requirements; and
- awareness raising and supporting action on environmental sustainability.

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www.fao.org/partnerships/leap/en
Livestock-Partnership@fao.org

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