LCA Metadata: Challenges and Opportunities

Melissa Lohrey, Metadata Librarian
LAC Group, USDA-National Agricultural Library
Melissa.Lohrey@ars.usda.gov

Finding Data
- Provide information such as a descriptive title for your data; names of data generators, owners, and documenters; dates; geographic granularity; and keywords to help users find your data in LCI databases.
- Assign a DOI – a Digital Object Identifier – or other persistent identifier to your data to ensure long-term digital access.
- Include your data’s DOI in any publications you author that reference the data.
- Register an ORCID – Open Researcher and Contributor ID – to connect your name with your research.

Connecting Data
- Store data in open, machine-readable formats (e.g., XML, JSON, CSV).
- Document data using existing LCA metadata standards (EcoSpold, ILCD).
- Create metadata with dedicated LCI software (openLCA, SimaPro, ecoinvent, ILCD editor, etc.).
- Name unit processes, flows, units, etc. according to established naming conventions.
- Submit data to an LCI database or network (LCA Commons, openLCA Nexus, ILCD Network, ecoinvent), or a general research database (Dryad, institutional repositories, etc.).

Understanding Data
- Describe why the data was collected; the issue it is trying to address, and its intended applications.
- Create a data dictionary that explains information such as variable names, data types, and nomenclature.
- Detail methods and processes such as sampling procedures, data collection protocols, modeling constants, LCI methods, and more to allow users to assess the data’s integrity and applicability.
- Link to an associated publication for complete information about the data.

Using Data
- Provide researchers with a citation statement for your data.
- Assign a license to your data, e.g., Creative Commons, that describes what users are legally permitted to do with it.
- Provide a statement outlining what the data should NOT be used for or guard against improper use.
- Provide the name and contact information of the dataset owner for questions about permissible use.
- Describe the software used to generate your data, your data’s file format(s), and other technical information to allow users to access your data in the future.

Trusting Data
- Indicate whether the data were peer-reviewed.
- Describe data quality measures.
- Include descriptions of parameters, formulas, and methods to increase transparency.
- Provide your affiliation, source of funding, and disclose any conflicts of interest.

Impact
- Better analysis of & access to publications that reference the data.
- More usable data.
- Increased research funding.
- Increased citations / impact factor.
- Connections with potential collaborators.
- Greater data visibility.
- More consistent, shareable data.
- Faster and more accurate data retrieval.

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References