Technical Helpdesk for National LCA Databases

Training on Data Acquisition and Dataset Development – Part 1 – Relationship of data to (national) databases and LCA software

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Relationship of data to (national) databases and LCA software

(Life Cycle Assessment)

ISO 14040, 2006
Relationship of data to (national) databases and LCA software

Data → Datasets → Databases → (LCA) Software

Acquisition and modeling
Embedding and storage
Exporting and exchange
Relationship of data to (national) databases and LCA software:

datasets in a supply chain

- Datasets may be kept discrete in the database (preferable),
- Or may be grouped with certain related processes that may be linked to more than one downstream process chain
Relationship of data to (national) databases and LCA software:

Datasets

Each dataset in the database should be complete (inputs and outputs) and balanced (material and energy)
Relationship of data to (national) databases and LCA software:

- Databases are storage locations for data
- Traditional databases store data in one of two ways –
  - Flat file – all information, including metadata, about a database object is contained in one place, termed a “record”, or
  - Relational – individual attributes are grouped into tables and “related” through a common parameter such as a process name.
- Newer approaches are called “data repositories, curated collections of files that can be downloaded by users.

The most convenient databases from a user perspective are web-based.
Relationship of data to (national) databases and LCA software:

LCA / LCI database characteristics

• Comprehensive input/output flows for datasets
• Consistent modeling approach and flow nomenclature
• Complete and consistent dataset documentation
• Often, capability beyond storing data, e.g. data collection and submittal support, review, aggregated process creation, …
Relationship of data to (national) databases and LCA software:

LCA / LCI database characteristics

- Comprehensive input/output flows for datasets
- Consistent modeling approach and flow nomenclature
- Complete and consistent dataset documentation
- Often, capability beyond storing data, e.g. data collection and submittal support, review, aggregated process creation, …
- **National database**: (often) contains reference datasets, representative for a country
Relationship of data to (national) databases and LCA software:

LCA software

data → model → “result” → decision

Relationship of data to (national) databases and LCA software:

**LCA software**

- LCA Software works with databases, and makes the database much more useful for modeling and decision support and application.
- There are many different LCA software packages; four are mainly important:
  - SimaPro
  - GaBi
  - openLCA
  - (Umberto)
- When developing a database, always consider its use in software!
Relationship of data to (national) databases and LCA software:

LCA software

- LCA Software works with databases, and makes the database much more useful for modeling and decision support and application
  - Identify the main drivers along the supply chain
  - Make comparisons
  - Perform sensitivity analyses
  - Create and add user-specific datasets
  - …
Relationship of data to (national) databases and LCA software:

LCA software

• Rice production India, ecoinvent 3.3.cut-off, ReCiPe LCA method, human health – human toxicity
Relationship of data to (national) databases and LCA software:

LCA software

- When developing a database, consider how it would be used in software!
- Ideally, not only one but several broadly used LCA software systems should be considered
For helpdesk assistance –

• Become a Helpdesk member:
  – To access the Helpdesk exchange space (or any other Clearinghouse area), you will need to create an account in the Clearinghouse (www.scpclearinghouse.org):
  – Toward the bottom of the homepage you will see a button labeled ‘Join the Community now’. Click on this link and open a form to allow you to create a login and profile.
  – Once logged in, you can modify or update your profile or explore the various SCP topic areas.
  – Go to ‘About’ and then to ‘Exchange Spaces’ where you will see Lifecycle Approaches in the drop down menu and one menu level below that is the Technical Helpdesk.
  – The Technical Helpdesk space will be available to any visitor, logged in or not. Without being logged in and joining the helpdesk space, any visitor can look at the various sections of the helpdesk space, but cannot contribute any content.
  – In order to become a member of the helpdesk space, on the homepage under the summary, is “Request space membership”. Click here, you will automatically be given rights of a members to contribute content, since it is a public group.
  – For your next login, you go directly to http://spaces.scpclearinghouse.org/ and then choose the Technical Helpdesk space in the dropdown list.

• Helpdesk Manager - Bruce Vigon, Consultant to SETAC,
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