Integration of LCI and EPDs with decision making

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LCA and decision making

MCDM – approach, e.g. ToSIA
- An attempt to reduce decision-making dimensions or
- Visualisation of the problem
- ...

LCIA methods
- RECIPE
- EPD….
- Methods are already decision-making tools.
- Problem is how to make use of those
  - In business
  - Policy making
  - Daily life

Both OK, here I’m worried about EPDs, how to get the business making use of those, to communicate!
LCA and decision making

• LCA is a scientific and applied research method
• How to make use of LCA in decision making?

• The issue is embedded into standard LCA phases, but:
  – Experts are needed to manage professional applications (costly)
  – Reasonable level of accuracy can be time consuming

• Thus, results not necessarily:
  – contribute to actual decision making parameters (cost, profit, material choices)
  – enter into actual decision making situation (timing)
Some history

**Metla**
- EPDs needed for efficient env communication, but
- The system has to be a low entry level, in cost and comfort.
- **PEnA** – a Platform for Env Assessment
  - Open Access LCA data sets with ILCD compatibility
  - Simplified tailored tools to manage datasets, create EPDs and communication on env properties.
  - Emphasis in building products
  - Material independent approach

January 2015 these two groups where merged within Luke

**MTT – AgriFood**
- Long time experience with food value chain LCA modelling
- An extended set of primary data stored uncoordinated – how to make use of it in decision making with low cost?
- **EcoModules**
  - Confidentiality and quality issues
  - Emphasis on primary production
"Original” EcoModules

• Developed by MTT (currently merged with Metla as Luke)
• Management system for those who prefer to produce reliable LCA easily
• Original target was to organize & simplify LCA over the food chain.
  – Means for the end users for gathering, analysing and delivering information

• Confidentiality of business data should be honoured.
  – Connects partners who are willing to share LCA results
  – Impact data is shared, but
  – shared data should be based on primary data.
• Elements: shared scientific calculation rules and verified data and tailored applications.
• Applications may support other business needs (e.g. cost accounting)
EcoModules

- Partners share the same datasets, but can’t access primary data on processes.
- Verified primary data is stored and verified on the same server.
- LCA experts are needed to weed out information needs for the applications
  - eg. ”warm boot” for each case or simulation.

- The business model has passed the evaluation
- A meta-model, implementation issues not yet considered in detail.
  - Currently a partner company is investigating implementation of EcoModules.
Ecomodules for ModWood?

Key differences

• Forestry “primary production technologies” are more common than “farm technologies”.
  – Number of species, forest types and management options are more limited.
  – A reasonable level of accuracy of forest management options can be reached using publicly produced data.
  – No need to go to the forest owner or plot level.

• Sparse and long network of low volume partners.
  – Tailoring at product category level
  – Harder to ensure integrity of EPD chains
Forest technology companies
Forestry agencies or owners
Primary & further manufacturing
Construction, wholesale or retail
End users

- Primary data generation
- Compiled EPDs

Simplified LCA tailored applications

Source information - User needs
LCA results
Results of emission calculation - Impact data

Calculation services
Data distribution

Supportive database
Methodological guidelines
EN15804, PCRs
Platform for Environmental Assessment, PEnA

PEnA-Db
Construction Open Environmental database
(GNU General Public License, GPL)
- EN15804 compatibility
- national construction material nomenclatures

• Reporting
• Independent applications e.g.
  – cost accounting
  – building design
  – green building certification

Forest datasets
Wood products
-EU Life Cycle Data Network
-EPD databases e.g. okobau.dat

ILCD Compliance

Excel
SQL
XML

IFC
SQL
PEnA-Db & Calculator

- Experimental application
- Okobau.dat
  - A German construction material LCA database

Evaluates environmental impacts of building elements or houses.

Technical notes
- See http://www.metla.fi/pena/
  - PHP & MySQL
  - Works but not user friendly
  - Security concerns
  - Maintenance too complicated
Kiitos!
Thank you