WORLD FOOD LCA DATABASE

PROVIDING RELIABLE AND UP-TO-DATE DATA FOR MORE ACCURATE FOOD AND BEVERAGES LIFE CYCLE ASSESSMENTS (LCA), DECISIONS AND COMMUNICATION

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Background
Global challenge

Need to better understand and assess the environmental impacts, risks and opportunities of food production and consumption.

- Global food demand to increase by 70%
- Demand to double in developing countries
- Food preferences changing
- Increase demand for products such as milk and meat
- Increasing environmental awareness
- Increase demand in environmental information
- A full life cycle approach is needed (supply chain, use phase, end-of-life)
- Carbon assessment is not sufficient, a multicriteria approach is needed
- Qualitative criteria are not sufficient, quantitative data are needed

9 billion people in 2050
Why a food LCA database?

- Life Cycle Assessment (LCA) increasingly used in the food and beverage industry for “ecodesign”, hotspot analysis but also for communication and labelling

- An efficient sustainable strategy is a credible strategy
  - Credibility means good, reliable and transparent data to base decisions and communication on
  - **There’s a lack of inventory data** on food products and processes in major transparent LCA databases
  - Having better information means:
    - Being able to anticipate
    - Increase likeliness to take good and right decisions
    - Strengthen the communication
The example of a pizza LCA

- Olive
  - Rape oil
    - ... at mill
- Tomato
- Tomato paste
  - ... processing grade, at field
- Wheat flour
  - ... at farm
- Pork
- Cheese

It also addresses the lack of differentiation of management practices (intensive, free range, greenhouse, open field, etc.)

World Food LCA Database completes gaps
- Ingredients
- Manufacturing processes
The World Food LCA Database (WFLDB) project
What is the World Food LCA Database?

Co-founders

Partners

Project

Bringing together experts from all stakeholders of the food chain to develop a comprehensive and up-to-date inventory of food LCA datasets

- Information from farm to manufacturing and end-of-life
- Geographical data to reach regionalised datasets

Outcome

Comprehensive and international database for accurate and precise food life cycle assessments
Modelling
Scientific modelling guidelines

- Based on existent guidelines
- As first basis ecoinvent and ISO 14040/44 compliant
  - ILCD, TSC

- Agricultural specific modelling
  - Different guidelines
  - Most up to date, complexity, data availability
Scientific modelling guidelines

General modelling principles: ecoinvent

– Naming of the processes
– Documentation
– System boundaries
– Allocation (following the four principles)
  • In Simapro at first the default, economic with carbon correction
– End of life (recycling)
  • Same as ILCD
– Water consumption
Scientific modelling guidelines

Agricultural specific modelling, e.g.,
- Direct emissions of N and P → SALCA
  - Model from Agroscope
  - Previous version is also used in ecoinvent
- Direct/indirect land use, transformation (deforestation)
  - Based on PAS 2050
- Emissions from land transformation
Deliverables: format

- Different formats for different softwares
- The WFLDB processes:
  - CSV format (SimaPro)
  - ecospold 1 (eco-editor/any other software)
  - ecospold 2 (eco-editor/any other software)
  - Quantis SUITE
  - ILCD
Outlook
The World Food LCA Database

- Significant improvements to perform environmental assessment of food products
  - More complete assessment
    - Including deforestation
  - High quality data
    - Consistent
    - Up-to-date
  - Multi-indicators, including water
  - Transparent and defensible

- Consider environmental inventory data in food and food related products & processes design