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ARE ENVIRONMENTAL DECLARATIONS OF PRODUCTS AND  
ORGANISATIONS THE WAY TO HARMONISE LCAS?

# **What are the observations and expectations of the research? - Focus on database in the agri-food sector**

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With contributions of Jens Lansche,  
Peter Koch and Gérard Gaillard



# Agenda

1. Context of the LCA research of Agroscope
2. Requirements for LCI databases
3. Suitability of PEF-Guide and ENVIFOOD protocol for EPD (Environmental Product Declaration)
4. Recommendations towards harmonisation



# Context of Agroscope LCA research

1. Meets the needs of ***public and private decision makers in the agri-food sector*** on a national and international level
  - LCI Databases (DBs) need to be accepted and of high quality (e.g.ecoinvent data quality; ILCD entry-level)
  - ... and need to serve diverse scopes and goals
2. Follows a scientific approach  
**subject → method → tool**
  - Projects structure with Advisory Board and reviewed Guidelines
  - Scientific and practice-oriented publications
  - **Different** methods and tools are used/ developed depending on different scope and goal of research subjects → **LCA, Ecodesign, EPD**



# Requirements for LCI databases

## Observation during the last two decades

- Ten to twenty years ago LCI databases had been mainly used for LCAs; ISO as a standard was sufficient
- Since some years LCI databases serve specific applications such as Ecodesign and EPDs
- The number of methodological standard and LCI databases is increasing

# Methodological standards

non exhaustive list, from general to specific

1. ISO (14040/ 44/ 25/ 67)
2. ILCD Handbook (ILCD DN: full compliance and entry-level)  
Shonan Guidance Principles  
ecoinvent data quality guidelines

3. PEF Guide

4. Envifood protocol  
BPX 30-323-0  
PEFCRs

## EPD

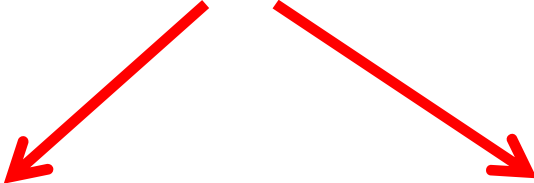
- per kg product
- descriptive

→ EPDs need specific guidelines; other LCAs need «flexible» guidelines (decision-related vs. accounting; micro-level vs. macro-level; interactions with other systems vs. without interact.)

# **Categorising LCI databases in the agri-food sector (proposal)**

- The various LCI databases and LCA methods might be confusing for database developers as well as for users
- A structure to categorise LCI databases might look as follows:

Source: Lansche *et al.*, 2014



Criteria	General database	Specific database
Geographical specification	Global, multi-national	National, regional
Application addressed	Ecodesign <u>and</u> Environmental product declaration (EPD)	Ecodesign <u>or</u> Environmental product declaration (EPD)
Sectorial specification	Agriculture <u>and</u> food industry	Agriculture <u>or</u> food industry



# Example

e.g. **WFLDB**  
(World Food LCA  
Database)

e.g. **ACYVIA** (Analyse de  
Cycle de Vie dans les  
Industries Agro-alimentaires)

	<b>WFLDB</b> General database	<b>ACYVIA</b> Specific database
<b>Geographical specification</b>	Global	National
<b>Application addressed</b>	Ecodesign and EPD	EPD
<b>Sectorial specification</b>	Agriculture and food industry	Food industry
<b>Guidelines (order of importance)</b>	<ol style="list-style-type: none"><li>1. ISO 14040/ 44</li><li>2. ILCD handbook</li><li>3. ENVIFOOD</li><li>4. Others</li></ol>	<ol style="list-style-type: none"><li>1. BPX 30-323-0</li><li>2. ILCD entry-level</li><li>3. ISO 14040/ 44</li><li>4. Others</li></ol>

→ For different food databases, different hierarchies of relevant standards apply.



# Suitability of PEF-Guide and ENVIFOOD protocol for EPD in the agri-food sector

Agroscope study 2014

- Initiator: Swiss Federal office for the environment
- available at [www.agroscope.ch](http://www.agroscope.ch) end of Sept.2014
- Approach
  - Comparative literature analysis; PEF was compared with ENVIFOOD protocol; ISO Standard 14044; the Shonan Global Guidance Principles; and the PEF-CR Guide.
  - 423 issues were compared and documented regarding:
    - Differences, inconsistencies, requirements influencing EPD results significantly, gaps





# Suitability of PEF-Guide and ENVIFOOD protocol for EPD

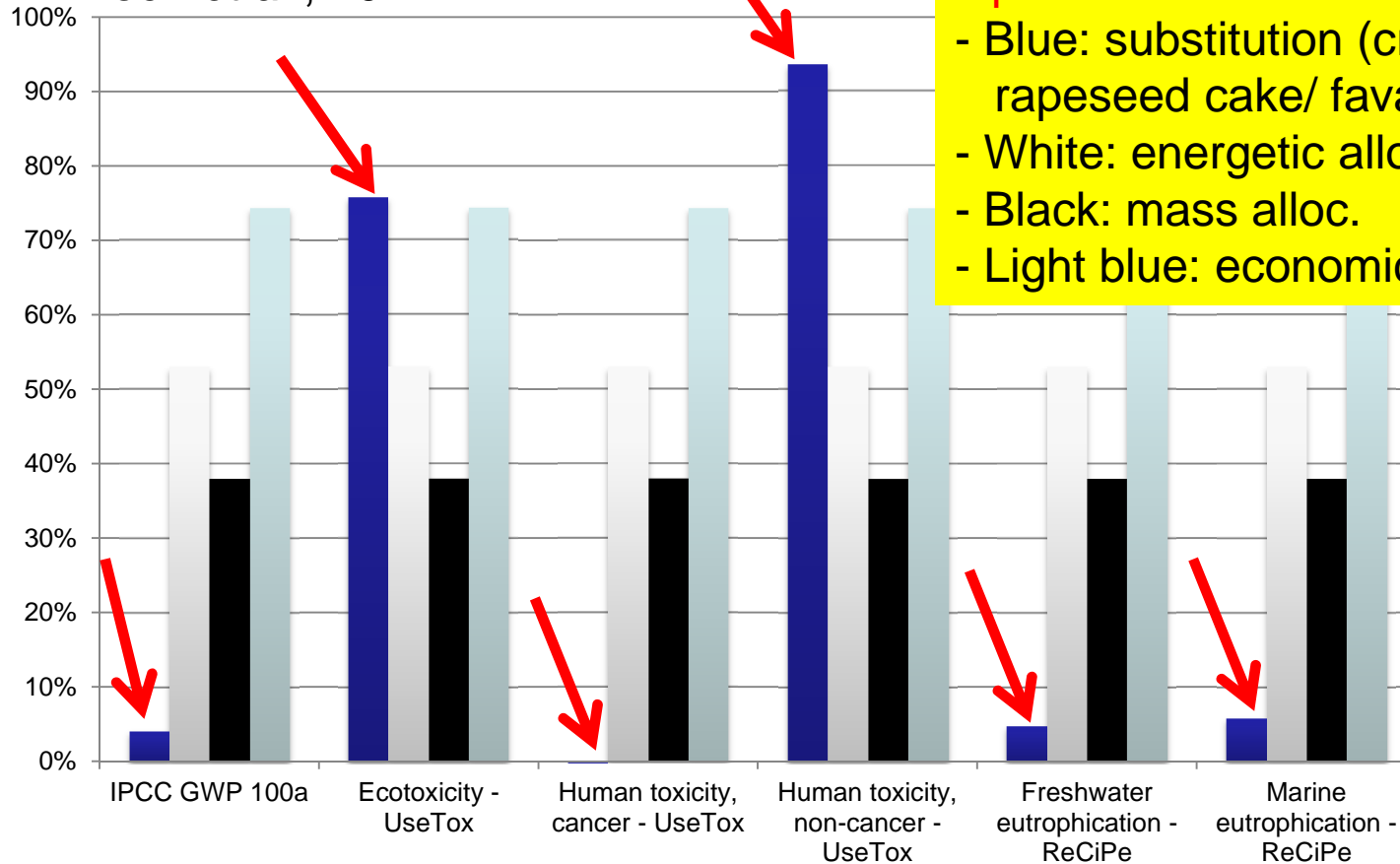
Main outcome of the study:

- the documents make a valuable contribution to the harmonisation (limited options compared to ISO)
- however, it is no guarantee that comparable results will be achieved for the same product. Various options still remain for:
  - allocation, data quality, biodiversity and soil quality, the weighting of impacts, governance and terminology  
→ we have proposed improvements towards harmonisation



# Ex.: Rapeseed oil/ cake allocation

Koch *et al.*, 2014



Options in PEF/Envifood:

- Blue: substitution (credits) rapeseed cake/ fava beans
- White: energetic alloc.
- Black: mass alloc.
- Light blue: economic alloc.

→ For EPDs the allocation method and impact methods should be fixed in PEFCR.

Research's position: focus on database | Patrik Mouron



# Ex.: Impact assessment – normalisation and weighting

PEF/ Envifood:

- Normalisation is a recommended step in impact assessment, weighting is an optional step.
- We recommend refraining from normalisation and from performing a subjective weighting of impacts when developing product-category rules.
- Agroscope LCA research:
  - Selection of impact categories representing the agricultural production system; communication of results at midpoint-level
    - Machinery → GWP
    - Fertilisers → Eutrophication
    - Pesticides → Ecotoxicity

# Position from a researcher's perspective

1. The initiatives are a good approach for harmonising EPDs; but still some work needs to be done.
2. EPDs need **specific** databases (data quality); tools tailored for specific goals and scopes can insure that the according principles of the standards will be taken into practice.
3. Beside EPDs diverse other goal and scope for LCAs exist → methodological **flexibility** as given by ISO meet the researcher's expectations.

# Observation

**It is strange that methodological guidelines and standards are published and afterwards the researchers need to proof them.**

Better collaboration between research and public/ private stakeholders is needed. Researcher's role can be in:

- Consultation
- Development
- Approval
- Expertise



# Questions?

Thank you for your attention

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Research's position: focus on database | Patrik Mouron