



THE SENSE-PROJECT

Application of the ENVIFOOD protocol to SMEs

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

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What is the objective of SENSE?

Develop a harmonised system for environmental impact assessment of the food and drink industry

- Internet tool for calculating environmental footprints
 - Fitted to SMEs
 - Cooperation over the supply chain in the tool
 - Includes social aspects
 - Regionalized approach for certain impact categories
- Environmental Identification Document & certification scheme:
 - Added value
 - ➔ 23 Partners from 13 countries

Importance of SMEs for Europe

European Union

- 99% of all enterprises in the private economy
- 2 of 3 jobs
- 9 of 10 SMEs: less than 10 personnel

Switzerland

- Same numbers

Focus on which food sectors?

Focus in the project is on these main sectors

- Fruit industry: Orange Juice
- Fish industry: Salmon
- Meat and dairy industry: Beef & Dairy

Expendable:

- Includes main stages that can be valid for all products
- Software is designed in a modular way

Allocation method

- Allocation cannot be avoided, should be as simple as possible
 - Dairy: Different milk products and by-products (whey)
 - Aquaculture: By-products (guts)
 - Beef: Slaughter by-products allocated to beef
- Economic allocation
 - The goal is a simple tool → some limitations have to be accepted
 - Other methods are difficult for the SMEs to understand
 - SME would need to collect more data for other forms of allocation (e.g. dry mass of different milk products)

Impact assessment

Selection a set of consistent environmental impact assessment methods and indicators

- Literature review
- Starting point: ILCD handbook
- Evaluation of current LCIA methodologies & developments, i.e.
 - ENVIFOOD
 - European Commission on the Product Environmental Footprint
- ➔ Using a choice of ENVIFOOD recommendations

Key environmental performance indicators

What are KEPI's?

- Indicators chosen for each production step
- Linked to key environmental challenges
- Simple to measure & easy to understand
- Built on accessible production data
→ e.g. litre diesel use per kg feed produced

Evaluation of the KEPI's:

On average, **95%** of the total environmental impact can be assessed with the selected indicators compared to a full LCA

KEPIs identified for each production step

Plant production (food & feed)
 Fisheries / Aquaculture / Livestock
 Food and feed processing
 Transports

➔ Example: KEPI's for Livestock

KEPI	Unit
Raw milk production	kg raw milk/dairy cow
Feed efficiency	kg feed/kg live weight
Buildings	m ² /kg product
Electricity use milking	kWh/kg raw milk
Water use milking	m ³ /kg raw milk

THE SENSE TOOL

How is the **SENSE** tool used?

- 1. Insert General Information on the dairy**
- 2. Create process line (modular)**
- 3. Enter KEPI data for own process (Optionally invite supplier)**
- 4. Analyse results**


The SENSE tool: Process line


New processing line


Processing line

Year

Description

 Orange cultivation

 TRANSPORTATION

 Orange pressing

SENSE tool: Results I

1. General Information on the dairy
2. Create process line (modular)
3. Enter data (Optionally invite supplier)
4. **Analyse results**
 - Choose environmental impact categories
 - Analyse per kg product or per production year
 - Compare with the average

SENSE tool: Results II - Analysis

RESULTS

User

Inventory

Results

cull dairy cow

pasteurised milk

2013

Results > pasteurised milk > 2013

pasteurised milk - 2013

Product

.. Compare products ..

Get results by

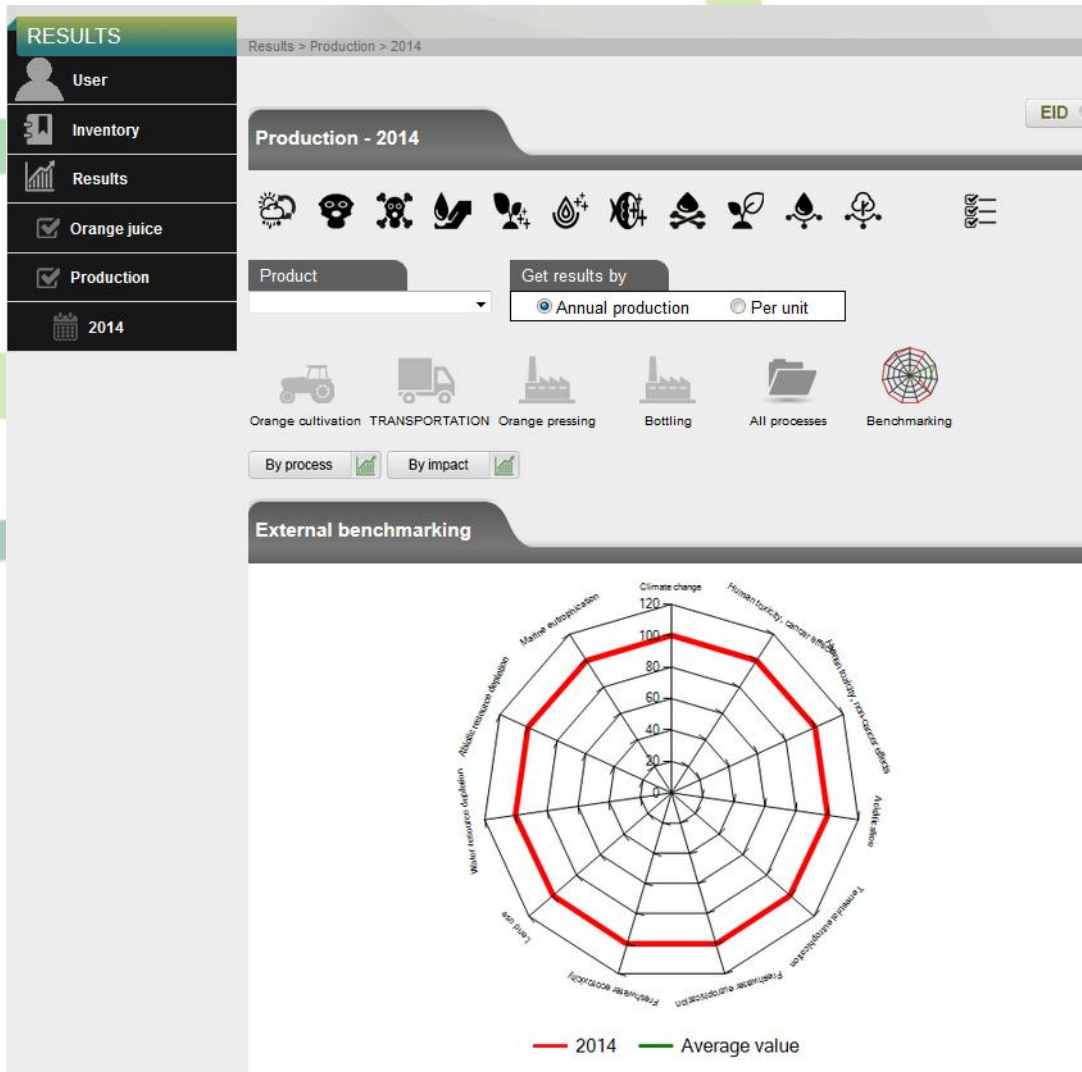
Annual production Per unit

By process By impact

Climate change
(kg CO2 eq)

PROCESS	PRODUCT	VALUE
Milk production at farm	cream cheese	5,736E+3

SENSE tool: Results III - Benchmarking



The **SENSE** tool – designed for SMEs

- Online tool
 - No installation of new software
 - Easy accessible, also for suppliers
- Intuitive, user friendly design
 - Food chain is visualized with symbols
- Regionalized data is automatically included
 - eg. water use of plant uses data from chosen country

The **SENSE** tool: Difficulties for SMEs

- SMEs need valuable time to collect data
 - No full LCA, only key data asked
 - Step-by-step description & short film
- Dairy SMEs feel uneasy asking suppliers (farmers)
 - Confidential
 - Direct entry of data possible (Guest)
- EID not well known yet, Advantage not visible for SME
- LCIA indicators difficult to explain for non-LCA experts
- ➔ SMEs expect quick results based on small amount of data

The **SENSE** tool: Advantages for SMEs

- Less time consuming than a full LCA
- Free of costs
- Overview over impacts of different processes
→ define hot-spots
- Comparison between different years
- Benchmarking
- Added value with the Environmental Identification Document (EID) that summarizes main impacts
→ brand differentiation

SENSE tool and harmonization

- Tool follows as much as possible current recommendations (e.g. ISO 14040, PEF, ENVIFOOD)
- Tool has to be more simple than current harmonization approaches
 - Allocation
 - Cut-off with KEPIs
 - LCIA indicators (regionalization, reduction of numbers)
- No replacement of full LCA due to the necessary simplification
- Food chains are complex, many agents involved
 - ➔ Harmonisation difficult

Project development

- Methods for environmental impact assessment
- Tool implemented and tested with data from 3 food chains
- SMEs are contacted to test the tool
- End of the project is January 2015
- Further information on www.senseproject.eu

THANK YOU!



Sources

- Ramos, S. et al, Oct. 2014:
«Sense tool: Easy-to-use web-based tool to calculate food product environmental impact»,
<http://lcafood2014.org/papers/120.pdf>
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<http://www.senseproject.eu/public-deliverables>
- «Fakten und Zahlen über die kleinen und mittleren Unternehmen (KMU) der EU»
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