



Life Cycle Management in Food and Drink SMEs: Challenges for environmental assessments based on life cycle thinking in SMEs

**Regula Keller, Niels Jungbluth
ESU-services Ltd.**

www.esu-services.ch/projects/lcafood/sense/

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Question

**How can we develop a tool
for the SMEs in the food sector
to do a simplified
life cycle assessment?**

Large, flowing green and teal swirls are positioned on the left side of the slide, partially overlapping the text.

INTRODUCTION

Context of the SENSE-project

- Seventh Framework Programme of the European Union
 - 23 Partners from 13 countries
- Aimed at SMEs in food supply chains
 - Fruit industry, aquaculture, meat & dairy industry, expendable
- End of the project was January 2015
- Further information on www.senseproject.eu

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Introduction

What is the objective of SENSE?

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

- Online tool for calculating environmental footprints
 - Cooperation over the supply chain in the tool
 - Includes social aspects
 - Regionalized approach (certain impact categories)
- Environmental Identification Document
 - Added value

Conclusion

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Introduction

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



SENSE TOOL METHODS

Data used for the assessment: KEPIs

Definition:

- KEPIs are «Key environmental performance indicators»
- 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:

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

Allocation method

Allocation cannot be avoided, should be as simple as possible

- E.g. Dairy: Different milk products and by-products (whey)

Choice: Economic allocation

- The goal is a simple tool → accept some limitations
- Other methods → difficult for the SMEs to understand
- More data has to be collected for other forms of allocation (e.g. dry mass of different milk products)

Impact assessment

A set of consistent environmental impact assessment methods and indicators

Decision: Choice of methods from the ENVIFOOD Protocol

- The protocol is based on ISO, the ILCD handbook and the PEF guide (European Commission on the Product Environmental Footprint)
- Different method to assess water use

Abiotic resource depletion, acidification, climate change, freshwater ecotoxicity, eutrophication (freshwater, marine, terrestrial), human toxicity (cancer, non-cancer), land use, water resource depletion.



THE SENSE-TOOL

Introduction Methods Tool Conclusion

RESULTS Results > pasteurised milk > 2013

User
Inventory
Results
 cull dairy cow
 pasteurised milk
 2013

pasteurised milk - 2013

Product: Get results by: Annual production Per unit

By process By impact

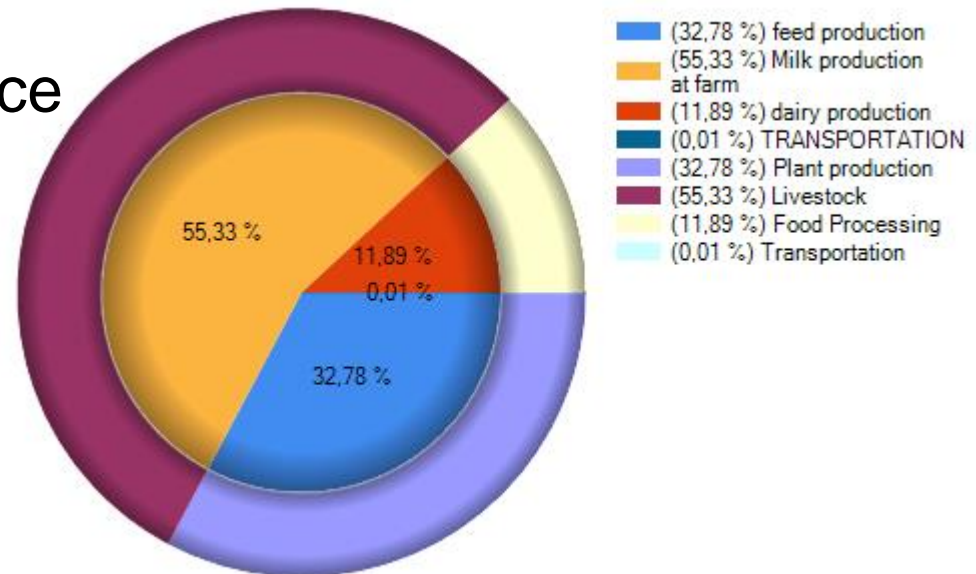
Climate change
(kg CO2 eq)

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

Example result: 1litre milk, climate change

- Entered KEPI data are analysed with chosen method
- SMEs can
 - gain insight in the share of environmental impacts of the different production steps
 - Define hotspots
 - Compare performance over the years

Milk production at farm
Feed production
Dairy production



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CONCLUSION: SMES AND THE SENSE TOOL

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
 - E.g. water use is calculated with data from chosen country

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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 SMEs
- LCIA indicators difficult to explain for non-LCA experts
- ➔ SMEs expect quick results based on small amount of data

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The SENSE-tool: Advantages for SMEs

- Less time consuming than a full LCA
- Less costs than a full LCA
- 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

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Thank you!

Regula Keller

keller@esu-services.ch



Sources

- Ramos, S. et al, Oct. 2014:
«Sense tool: Easy-to-use web-based tool to calculate food product environmental impact»,
- Public Deliverables 1.1, 1.3, 2.2 from the project can be retrieved from:
<http://www.senseproject.eu/public-deliverables>
- Contributions by ESU-services
<http://www.esu-services.ch/projects/lcafood/sense/>
- «Fakten und Zahlen über die kleinen und mittleren Unternehmen (KMU) der EU»
http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/index_de.htm 8.9.2014, 4 p.m.