THE SENSE-PROJECT

Application of the ENVIFOOD protocol to SMEs

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

5th NorLCA Symposium 2014

Session 4: LCA in food sector: methodology and application

October 2nd, 2014 in Reykjavík, Iceland

Question

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

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SENSE

INTRODUCTION
SENSE TOOL METHODS
THE SENSE TOOL
CONCLUSION: SMES & SENSE

INTRODUCTION

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

Context of the project

- Seventh Framework Programme of the European Union
- 23 Partners from 13 countries
  - RTD: Universities, Institutes
  - European Food & Drink SMEs & Food Associations
  - Specialists, i.e. experts in LCA (e.g. ESU-services), sustainability, software company
- Aimed at SMEs in food supply chains
  - Calculate the environmental burden of their products taking into account the whole supply chain

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

Focus on which food sectors?

Focus in the project is on these main sectors

- Fruit industry: Fruit juice
- Aquaculture: Salmonids ➔ **next presentation**
- Meat and dairy industry: Beef & Dairy ➔ **this presentation**

Expendable

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

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sense

SENSE TOOL METHODS

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
- SMEs 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
- In compliance with the following LCIA methodologies & developments, i.e.
  - ENVIFOOD
  - European Commission on the Product Environmental Footprint

➡ Based on ENVIFOOD recommendations

Data used for the assessment: KEPIs

What are KEPI's?

- «Key environmental performance indicators»
- 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
  → Pesticides: kg active ingredient per ha

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

➔More about KEPI's in the next presentation

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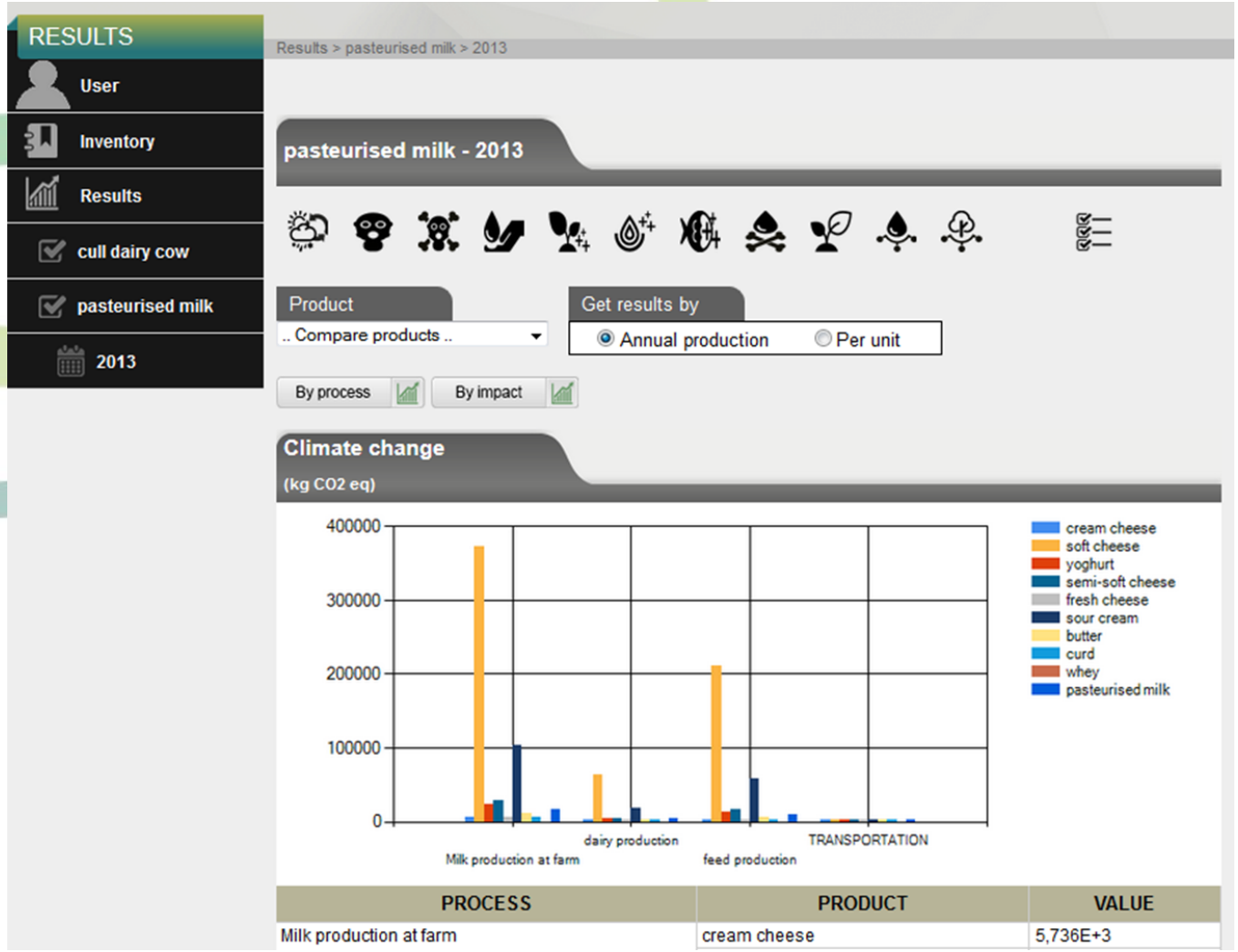
THE SENSE TOOL

How is the SENSE tool used?

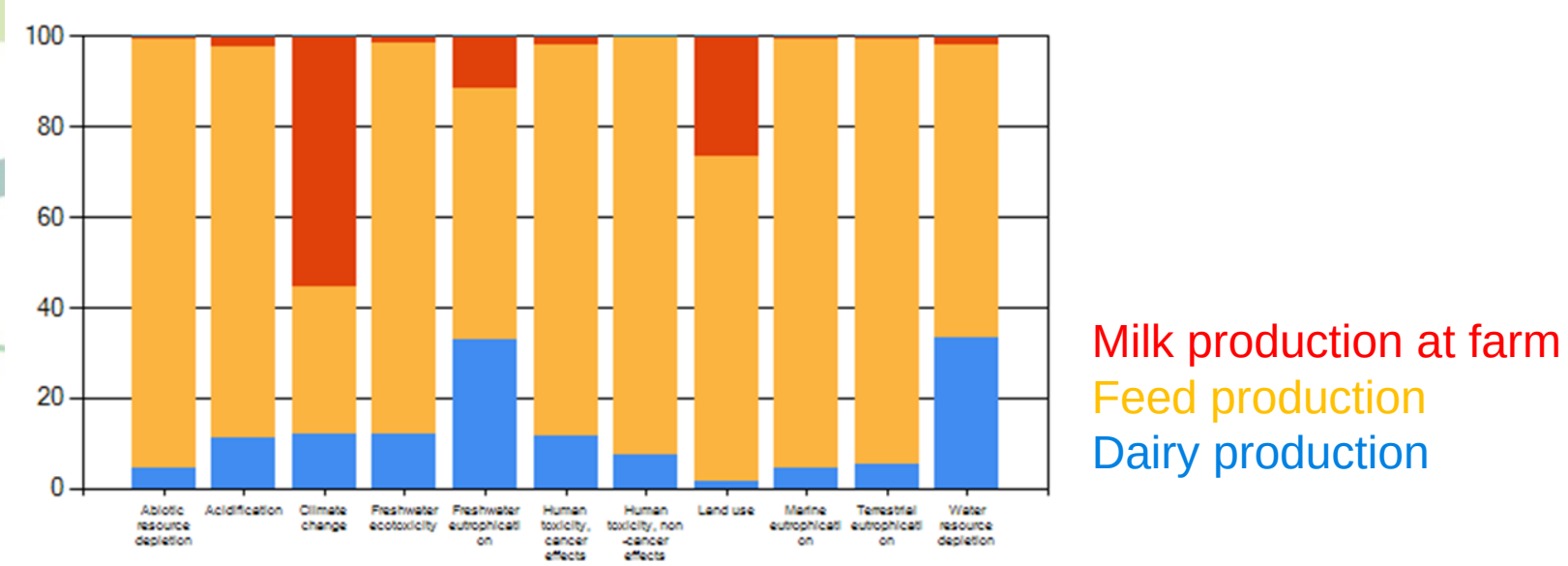
1. Insert General Information on the dairy
2. Create process line (modular)
3. Enter KEPI data for own process (Optionally invite supplier)
4. **Analyse results**
   - Choose environmental impact categories
   - Analyse per kg product or per production year
   - Compare with the average

Result presentation



Example result: 1litre milk, all categories

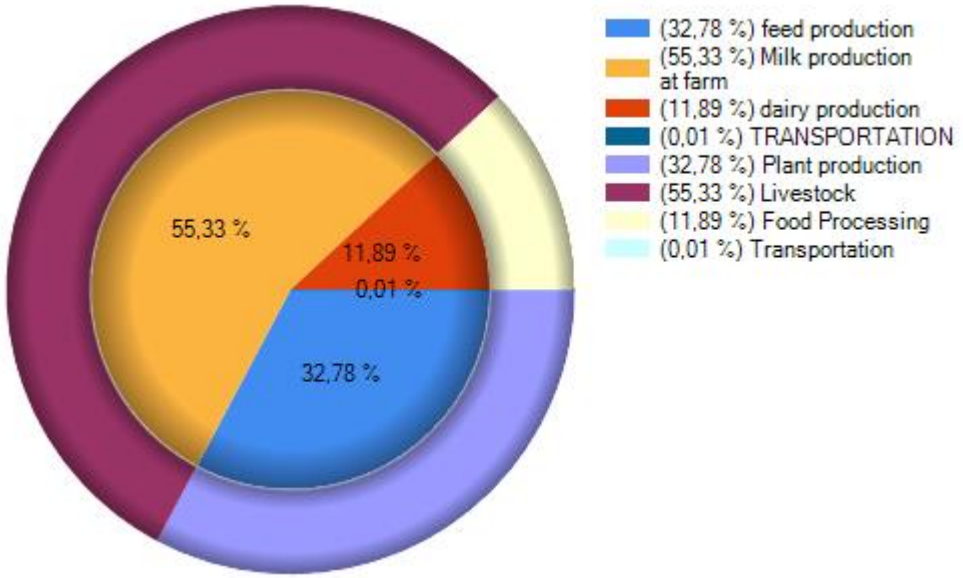
Analyse the environmental impact in all impact categories:
Abiotic resource depletion, acidification, climate change, ecotoxicity, eutrophication (freshwater, marine, terrestrial), human toxicity (cancer & non-cancer), land use, water resource depletion.



Example result: 1litre milk, climate change

- Gain insight in the share of environmental impacts of all processes
- Define hotspots

Milk production at farm
Feed production
Dairy production



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

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

The SENSE tool: Advantages for SMEs

- Less time consuming than a full LCA
- Free of costs during test phase
- 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

Project development

- Methods for environmental impact assessment selected
- Tool implemented and tested with data from partners of 3 food chains
- SMEs are testing the tool

  ➔ **SMEs are still welcome to take part in the testing!**

  (SMEs of fruit, fish and meat & dairy industry)

  Contact us: keller(at)esu-services.ch
- End of the project is January 2015
- Further information on www.senseproject.eu

Thank you!

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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.