

LIFE CYCLE MANAGEMENT ALONG THE FOOD INDUSTRY – OVERVIEW OF SENSE PROJECT

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INTRODUCTION: An overview of environmental challenges in life cycle stages of food supply chains was gained by reviewing LCA (Life Cycle Assessment) studies on beef and dairy, orange juice and aquaculture [1, 2, 3]

AIM: To provide a **common background** to support the development of the SENSE tool, a simplified and harmonized environmental assessment tool aimed for use by SME's in food supply chains.

RESULTS: The main environmental impacts identified in all supply chains were contributed by defined **Key Environmental Performance Indicators (KEPIs)**

- Data gathering to perform a simplified life cycle environmental impact assessment (LCIA) using the web based SENSE tool can be facilitated by using only the identified KEPIs as input data to calculate products' life cycle environmental impacts.
- Social impacts are also included to motivate a more holistic sustainability thinking in SMEs. This is considered in the SENSE tool by questions on the performance of the enterprises including **working conditions** and **employee rights**.

MAIN CONCLUSIONS

Main environmental impacts identified in food chains:

- Climate change
- Eutrophication*
- Acidification*
- Human toxicity
- Ecotoxicity
- Land use
- Abiotic resource depletion
- Water depletion*

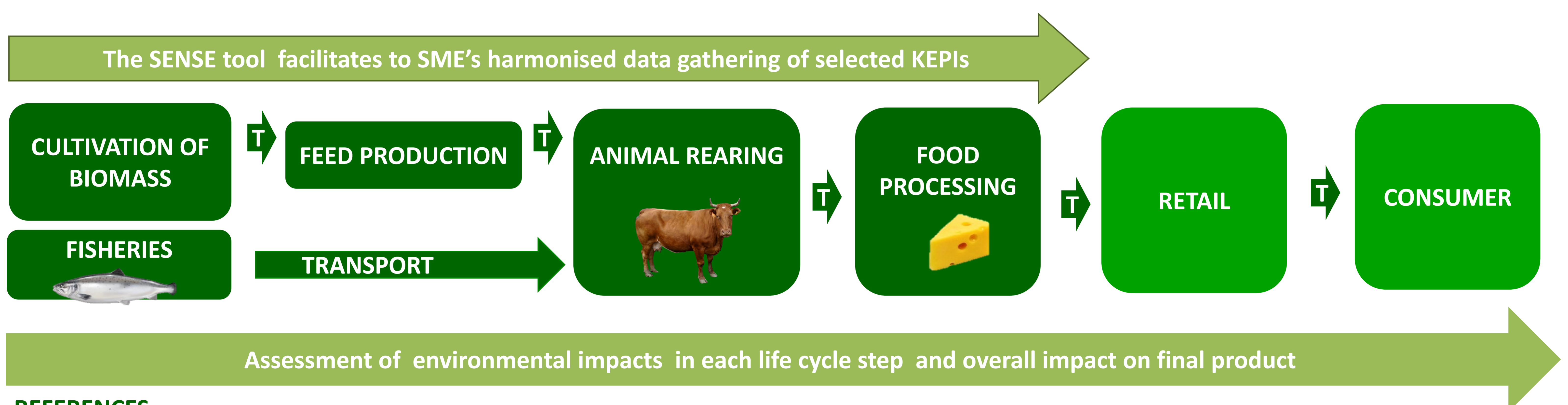
* regionalised on a country scale

Environmental challenges identified in food chains:

- Energy production and use
- Feed production and use
- Fertilizer production and use
- Fertilizer production and use
- Water use
- Land use
- Abiotic resource use
- Waste disposal
- Wastewater

LCA methodology and the chosen KEPIs in the SENSE project do not cover environmental challenges like

- Animal welfare
- Escapes
- Use of medication
- Impact in Biodiversity
- Land use change & indirect land use change (LUC; ILUC)
- Carbon sequestration
- Soil erosion
- Impacts of harvesting methods



REFERENCES

- [1] Aronsson A, (2013) Key environmental challenges for food groups and regions representing the variation within the EU (Eds, Landquist *et al*). Chapter 1: Beef and dairy supply chain, SENSE – project Deliverable D 1.1 SIK, Gothenburg, Sweden
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