When a hole matters

- the story of the hole in a bread for French hotdog
LCA of bread for French hotdog

- Introduction
- Background
- Identification of hot-spots in the value chain
- Different production technologies for making the hole
- Discussions
  - Our opportunity to influence agricultural production
  - Our opportunity to influence hotdog men
  - Our opportunity to achieve environmental improvements in the bakery
Cereals - the base!

- Cerealia - an international food group with approximately 5,800 employees.
- Operates about 60 facilities in Sweden, Denmark, Norway, Finland, Germany, Poland, Latvia and Ukraine, as well as Great Britain, USA, Russia, Spain and Japan.
- Turnover approximately SEK 9,000 million.
Overall organisation

• The business takes place in five business areas within three strategic business sectors.
Background

- LCAfood project - Denmark and Sweden
- Environmental project “LCA - as a tool in the learning bakery”
Identification of hot-spots in the value chain

- **17,000 baguettes from hotdog stand**: 2.3 ton CO₂
- **18,000 frozen baguettes from bakery**: 1.3 ton CO₂
- **1.1 ton conventional wheat flour from mill**: 1.1 ton CO₂
- **1.4 ton Bread wheat, from farm**: 1.2 ton CO₂
- **Fertiliser (N)**: 0.4 ton CO₂
- **-300 kg Barley, from farm**: -0.2 ton CO₂
- **300 kg Animal feed production**: -0.2 ton CO₂
- **14 days Storage in freezer**: 0.2 ton CO₂
- **Storage in wholesale**: 0.2 ton CO₂
- **360 hours Toaster**: 0.5 ton CO₂
- **Distribution**: 0.3 ton CO₂
- **Electricity**: 1.0 ton CO₂
- **17,000 baguettes from bakery**: 1.3 ton CO₂
- **18,000 frozen baguettes from bakery**: 1.2 ton CO₂
- **1.4 ton Bread wheat, from farm**: 1.1 ton CO₂
- **Fertiliser (N)**: 0.4 ton CO₂
- **-300 kg Barley, from farm**: -0.2 ton CO₂
- **300 kg Animal feed production**: -0.2 ton CO₂
- **14 days Storage in freezer**: 0.2 ton CO₂
- **Storage in wholesale**: 0.2 ton CO₂
- **360 hours Toaster**: 0.5 ton CO₂
- **Distribution**: 0.3 ton CO₂
- **Electricity**: 1.0 ton CO₂
Different production technologies for making the hole

• Before - done by spear
• Now - done by drilling a hole (soft - still done with a spear)

• Bread waste is re-used
  – animal feed
  – dried bread crumbs
  – replacement as flour

• No holes or new development?
Different production technologies for making the hole

Table 1. Comparison of environmental impact from a change in production-technology from old production, where the hole is made. Negative bars shows that a change to the technology yields an environmental improvement.
Our opportunity to influence agricultural production

- Majority of environmental impacts
- Data from LCAfood data base in Denmark
- Use of other types of flour - more environmental friendly or organic flour?
- Use of more bread waste?
Our opportunity to influence hotdog men

- Second most important of environmental impacts
- Data not available from “real life”
- More bread and less sausage?
- Fast food and environment?
  - The trend of “less fat - more fibre”
Our opportunity to influence hotdog men

French hot dog with sausage

Analyserer 1 p design "French dog"; Metode: EDIP, LCAfood, simple / EDIP World/Dk / karakterisering

Analyserer 1 p design "French hotdog"; Metode: EDIP, LCAfood, simple / EDIP World/Dk / karakterisering

Global warming (GWP 100)

Acidification

Eutrophication

Nature occupation

Fersk standard hulbaguette

Distribution, fersk

Pork minced meat (flæskesmåkød), whole sale

Båndrister
Our opportunity to influence hotdog men

Different French hot dog with sausage

Global warming (GWP 100) Acidification Eutrophication Land use

French hotdog French hotdog, big sausage French hotdog, small sausage

Sammenligner 1 p design 'French hotdog' med 1 p design 'French hotdog, big sausage' og med 1 p design 'French hotdog, small sausage'; Metode: EDIP, LCAfood, simple / EDIP
Our opportunity to achieve environmental improvements in the bakery

- Not important environmental impacts but easiest to handle
- Data available from “real life”
- Learning groups
- Good suggestions and many savings
Identification of hot-spots in the production chain
Environmental projects Karup

**Waste**

- Blandingsbatteri til håndvask (temperatur sænkes fra 65 °C til 40 °C)
  - Gennemført?
  - Deltagere
  - Besparelse i kW h (evt. kr.)

**Water**

- Energiforbrug ovn
  - Gennemført?
  - Deltagere
  - Besparelse i kW h (evt. kr.)

**Energy**

- Projekt/opgave
  - Gennemført?
  - Deltagere
  - Besparelse i kW h (evt. kr.)

**Others**

- Projekt/opgave
  - Gennemført?
  - Deltagere
  - Besparelse i kW h (evt. kr.)
Summary

• Background
• Identification of hot-spots in the value chain
• Different production technologies for making the hole
• Discussions
  – Our opportunity to influence agricultural production
  – Our opportunity to influence hotdog men
  – Our opportunity to achieve environmental improvements in the bakery