The Development from 1st to 4th LCA-Food Conferences:

Methodological Gains and Improvements in Inventory

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Conference history

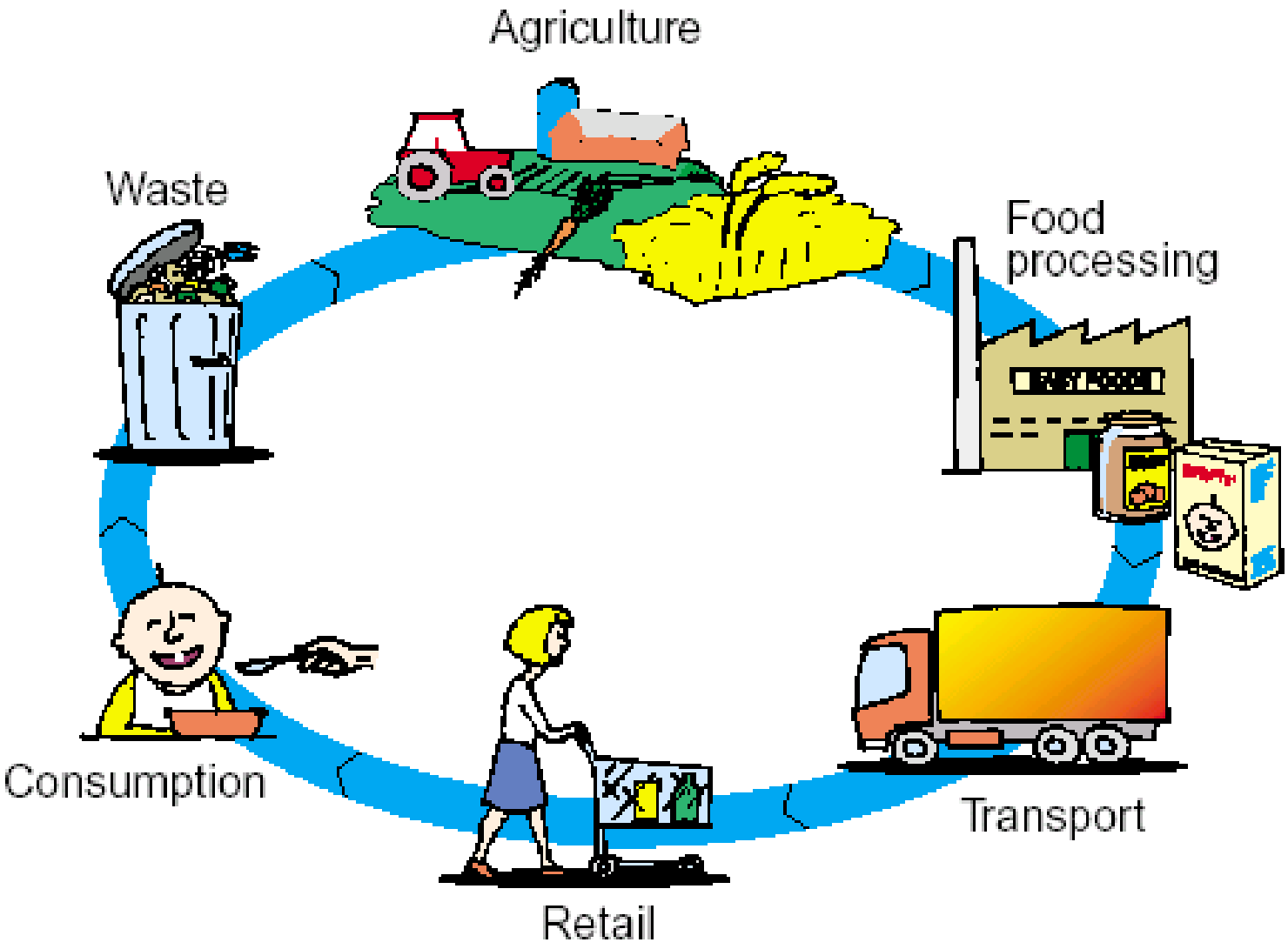
1996: Application of LCA in Agriculture, Food and Non-Food Agro-Industry and Forestry. Brussels, Belgium

1998: LCA in Agriculture, Agro-Industry and Forestry. Brussels, Belgium

2001: LCA in Foods. Gothenburg, Sweden

2003: LCA in the Agri-food Sector. Horsens, Denmark

LCA for identification of the environmental impact of the product from raw material to waste



Characteristics of case studies presented at the conferences

- If the life cycle is complete, often **single impact categories**, like energy or GWP are included.

- If there is a good coverage of impact categories, often the study is focusing on **one phase of the product life cycle**, in most cases agricultural production.

Improvements in inventory

- LCA studies presented in 1996 were pioneering the area of LCA of foods, which meant that access to data was limited.
- Useful data has now been published for fertiliser production, tractor emissions and other relevant areas.
- Databases and statistics are more widely used.

Data quality assurance

- The need to assess **data quality and relevance** is as important as ever.
- More LCA studies have been published by now, so it is more easy to check if the results of an LCA are of a **reasonable magnitude** or not.
- However, **true validation** of the LCA models will never be possible.

Methodological development

- Functional unit
- System boundaries
- Allocation/systems expansion
- Environmental impacts especially relevant for LCA of food products

Functional unit

- Often defined as one **unit of mass**,
  e.g. 1 kg of a product

- For agricultural production the **production area**,
  e.g. 1 hectare is also used

- Protein content or other **nutritional parameters**
  have also been suggested

System boundaries

Examples of choices that have to be made:

- **Soil**, no “natural” boundary between the technical system and the environment.
- **Capital goods**, sometimes included in agricultural production.
- **Crop rotations** rather than **single crops**.

Allocation/systems expansion

- It is more common that systems expansion is advocated today, however in LCA studies it is often a mix of both.

- The most relevant choice
  “Depends on the goal and scope of the study”

Environmental impact especially relevant for foods

- **Land use**, lots of proposed methods but still lack of consensus.
- **Direct ecosystem effects**, e.g. impact on fish stocks.
- **More site-specific** impact assessment, e.g. **eutrophication and acidification**.
- Characterisation of **pesticides and other toxic compounds**

Future outlook

- More papers about the utilisation and benefits of LCA-studies!
- Environmental Systems Analysis rather than LCAs?
- From LCA to Sustainability Impact Assessment?
- Important to be careful about what you wish for:
  More complete means more complex and time consuming and more difficult to communicate.

Thank you for your attention!