



# **Content of presentation**

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- > What's the relevance?
- Tools
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- Conclusion

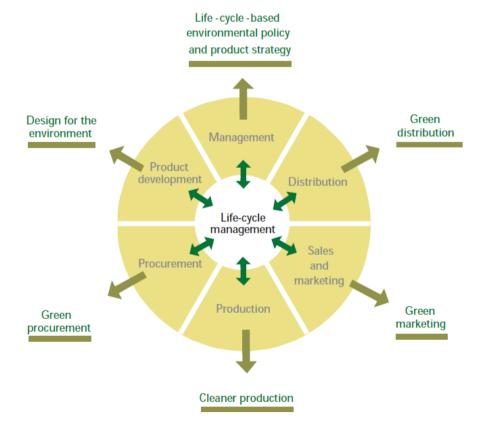




# What is ecodesign?

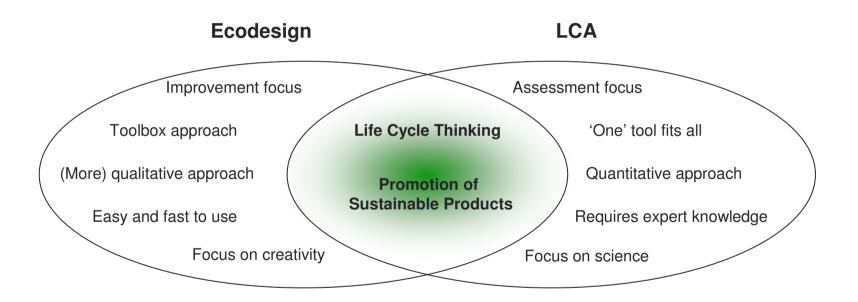
Ecodesign (= design for the environment) is the integration of environmental considerations in product development

Should obviously not be isolated to 'just' product development



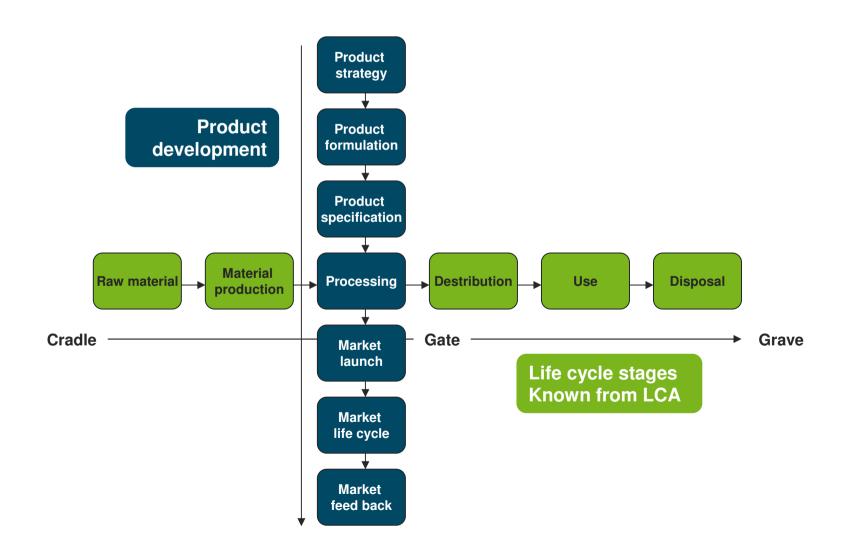


# Similarities and differences to LCA



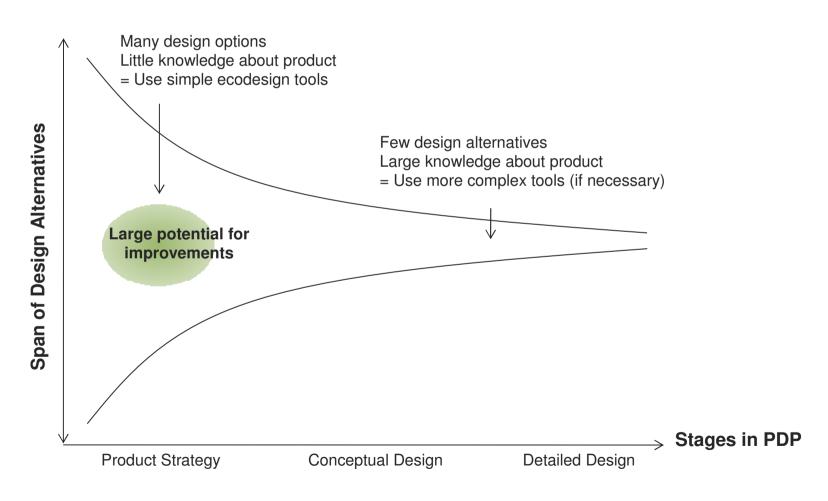


# LCA versus Ecodesign





# The product development process



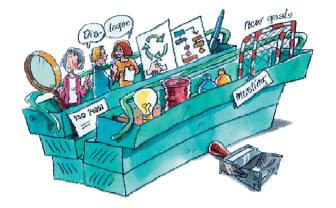


# Relevance of Ecodesign in the Food Sector

- > Historically too much focus on single issues
- Ecodesign has broader appeal (than LCA)
- More improvement oriented (than LCA)
- LCA and Ecodesign are supplementations (LCA can be used to develop ecodesign tools and trade-off situations)
- Innovation and product of pment ALSO takes place in the food sector (not or electronics etc.)
- > New ISO standar ecodesign: 14006 and 14062







More sophisticated tools

Assessment
Simple tools

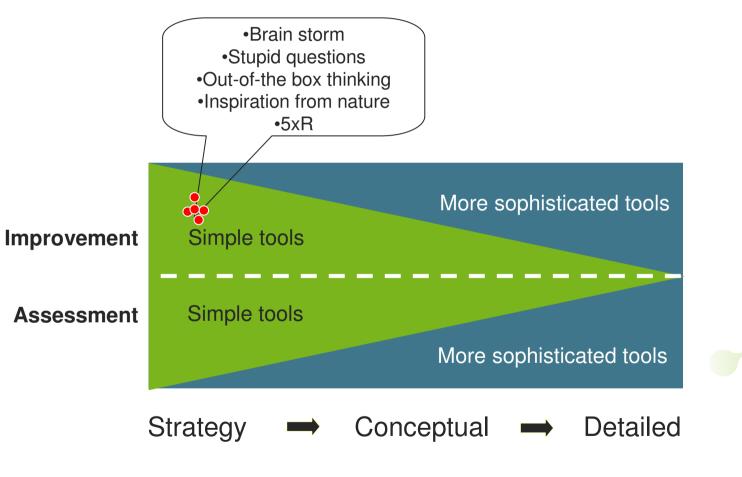
More sophisticated tools

More sophisticated tools

Strategy → Conceptual → Detailed

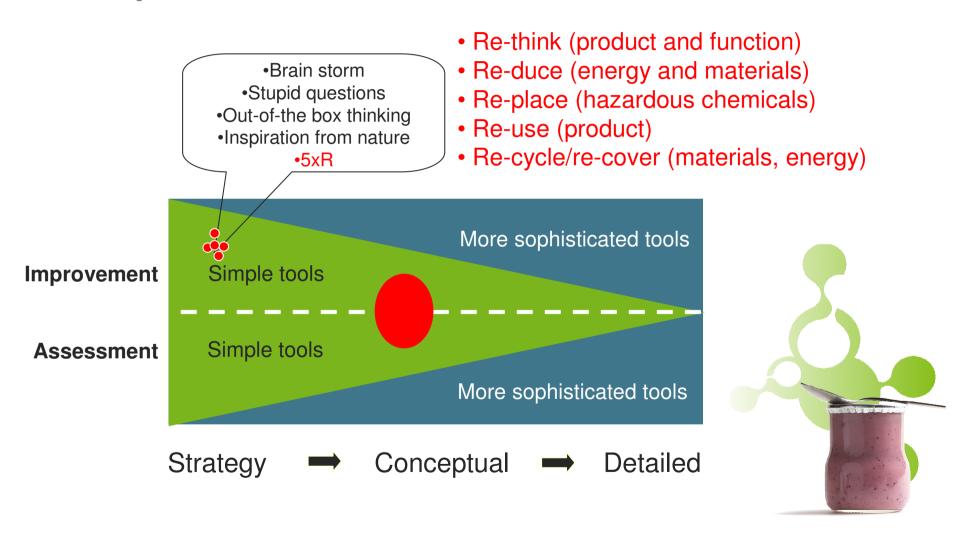












# **Example of tools (spider-web)**



### 0) Re-think the product and its functions

Think of the product as a service or function Identify more environmental friendly ways to provide the service Expand the scope of functions provided by the product/-s Improve the quality of the product/-s Identify possibilities for system innovation Ask studid questions and be imaginative

### 7) Optimisation of end-of-life stage

Make the product recyclable
Provide incentives to reuse or recycle packaging and waste
Provide information on best disposal options

Provide information about importance of correct disposal

### 6) Environmentally sound use of product

Reduce the need for cold storing (increase durability)
Reduce requirement for heating during preparation
Inform about env. friendly & healthy consumer habits
(e.g. use the bike for shopping, reduce food spillage)
Provide environmental friendly recipes

### 5) Effective and green distribution

Energy efficient modes of transport
Efficient and low emission engines / technologies
Logistics that ensures high load factors
Logistics that reduces the number of empty returns
Logistics that ensures shortest distances
Optimal protection of product quality in distribution
Promote eco-driving

# 1) Healthy and environmental friendly raw materials & ingredients Use healthy raw materials & ingredients with a high nutritional value Use raw materials & ingredients with a low Carbon Footprint\* Use raw materials & ingredients with a low impact from land use\* (\*other aspects may be very important as well) Use plant based raw materials & ingredients instead of animal based Use of otherwise wasted raw materials & ingredients Use of environmentally certified raw materials & ingredients 2) Effecient use of raw materials Use raw materials and other ingrediencs efficiently Efficient use of all waste and by-products Minimize waste throughout the life cycle

### 3) Promotion of cleaner production processes

Enhance good housekeeping practises
Promote reuse and recycling (of materials, chemicals, water and energy)
Promote cleaner/renewable energy sources
Use fewer (and sounder) secondary materials / chemicals
Use continuous production if possible
Reduce the frequency of cleaning processes e.g. by production planning

Encourage innovation and cutting-edge production technologies

4) Optimisation of packaging

Use environmental friendly materials (e.g. recycled)
Make the packaging easy to reuse/recycle
Reduce the amount of unnecessary packaging
Use packaging that delivers high protection of the products quality
Increase the durability / shelf life of the food product
Use packaging that is easy to empty
Use packaging that is convenient and reduce food spillage
Make packaging sizes that match different consumer needs
Use packaging shapes that enable high density storing/transport
Use packaging to convey environmental messages

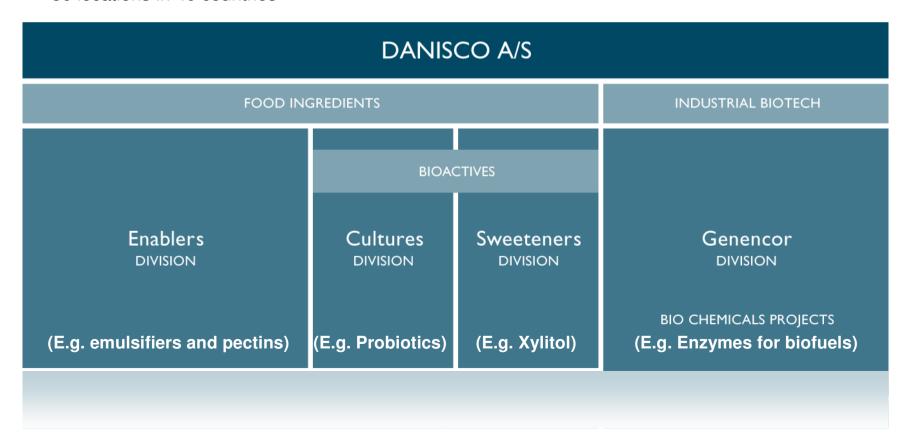


# Ecodesign at Danisco



### **Facts about Danisco**

- > World leader in food ingredients, enzymes and bio-based solutions.
- > Head quarter in Copenhagen, Denmark
- > 6,800 employees
- > 80 locations in 40 countries





# **Examples from Danisco**

- Function innovation: Development of double concentrated culture (has significant impact!) – continued development
- Raw materials and cleaner production: Promotion of Xylitol from pulp and paper mill (industrial symbiosis) – very low Carbon Footprint

### And a lot of other things:

> Materials: Sustainable palm oil and soy and more natural ingredients

Efficient use of materials: Pectin from 'waste' citrus peels (returne animal feed)

Cleaner production: Significant reductions in energy use!

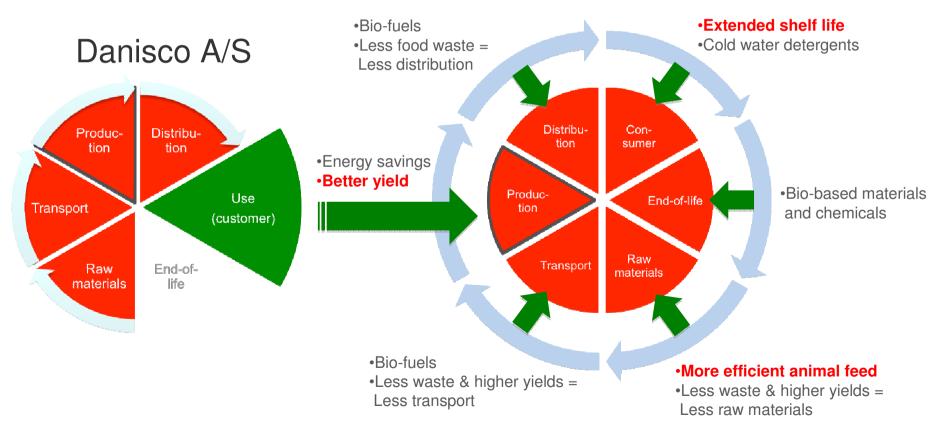
> **Use and end-of-life:** Clearly the biggest potential (next slide)



# The application of our products



## Customer





# LCA and Ecodesign strategy at Danisco

- > Strong focus on LCA/ecodesign, with the following goals:
  - LCA on all main product categories in 3 years
  - Both attributional and consequential modeling
  - Advanced IO modeling org level,
  - Implementation of ecodesign / LCM



# Conclusion

- > Ecodesign is 'also' relevant applicable to food
- Ecodesign guidelines should be simple and product specific
- > Improvements should NOT focus on one thing in isolation (e.g. packaging)
- Ecodesign and LCA goes hand in hand

Mail: mikkel.thrane@danisco.com









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This item is in: Food Science > Environmental technology and management

Environmental assessment and management in the food industry: Life cycle assessment and related approaches

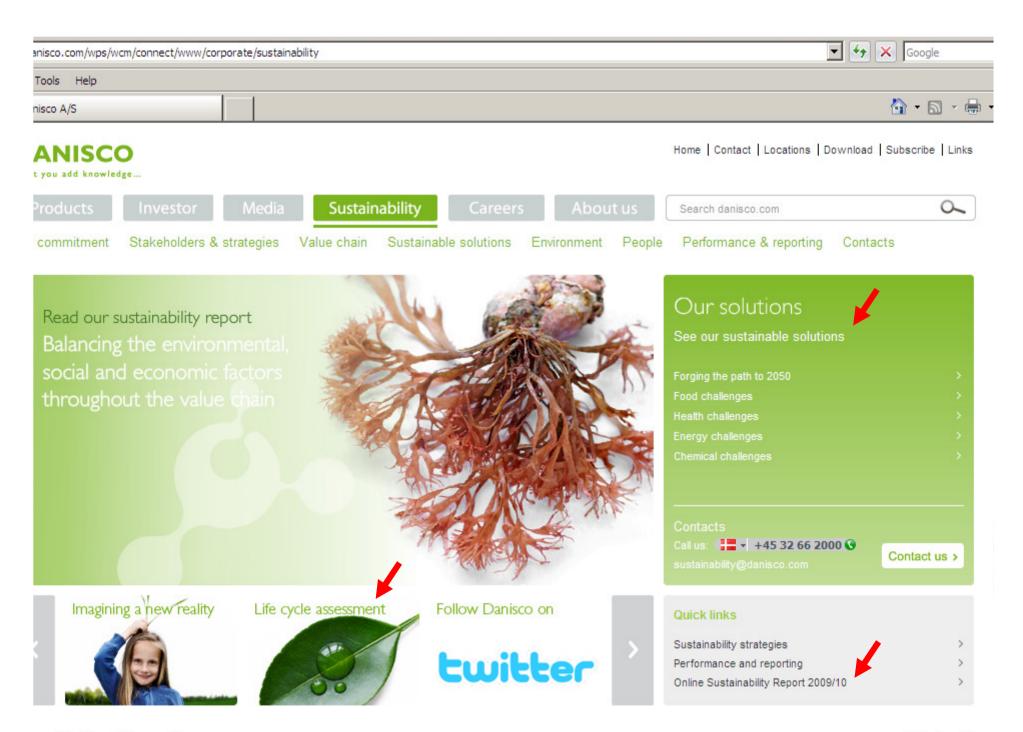
Edited by U Sonesson, J Berlin and F Ziegler, SIK, Sweden

Woodhead Food Series No. 194

Life cycle assessment (LCA) of production and processing in the food industry is an important tool for improving sustainability. Environmental assessment and management in the food industry reviews the advantages, challenges and different applications of LCA and related methods for environmental assessment, as well as key aspects of environmental management in this industry sector.

Part one discusses the environmental impact of food production and processing, addressing issues such as nutrient management and water efficiency in agriculture. Chapters in Part two cover LCA methodology and challenges, with chapters focusing on different food industry sectors such as crop production, livestock and aquaculture. Part three addresses the applications of LCA and related approaches in the food industry, with chapters covering combining LCA with economic tools, ecodesign of food products and footprinting methods of assessment, among other topics. The final part of the book concentrates on environmental management in the food industry, including contributions on training, eco-labelling and establishing management systems.





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# Danisco A/S

- > Emulsifiers (oil and water)
- > Textural ingredients (e.g. pectins)
- > Sweeteners (e.g. xylitol)
- > Cultures (e.g. for yoghurt)
- > Bio-preservation (e.g. probiotics)
- > Food enzymes (e.g. to maintain freshness of bread)
- > Animal nutrition (e.g. more efficient animal feed)
- Functional systems (mix of the above)

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+ Technical enzymes (mainly biofuel)





