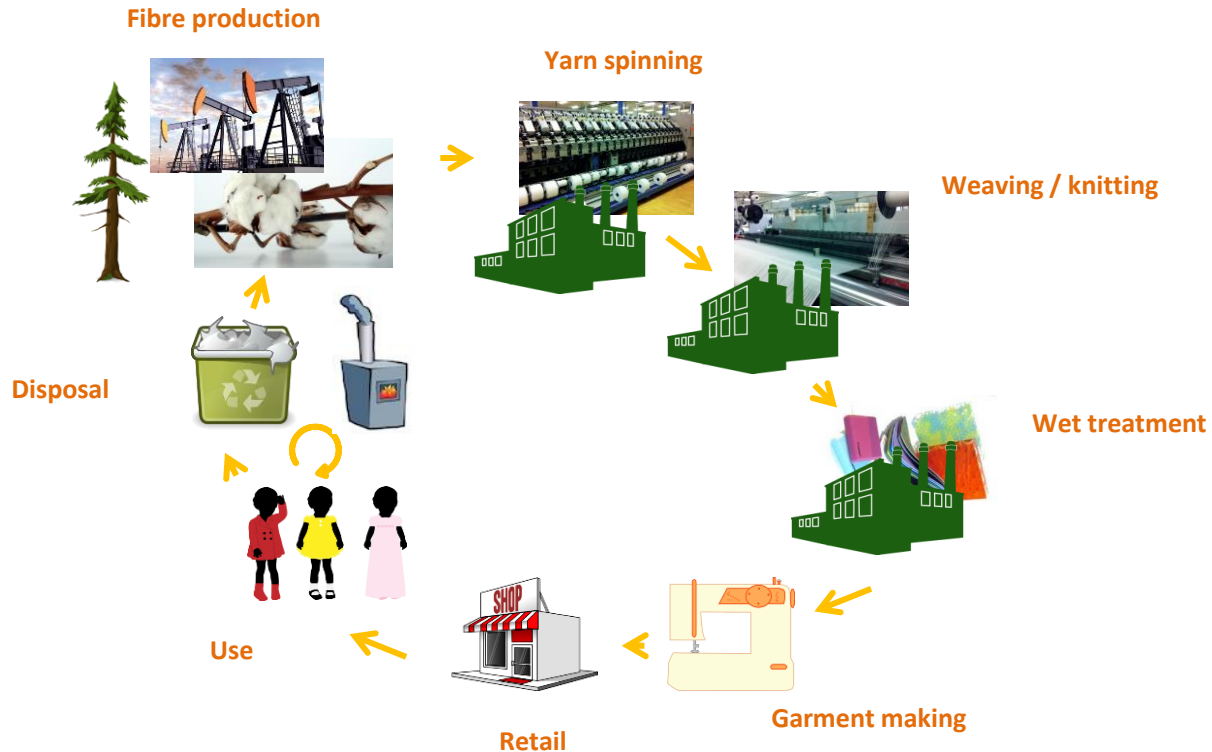


Livslängd **- Ur ett hållbarhetsperspektiv**

14 september 2020

Mikael Larsson

Environmental impact from textiles in a life cycle perspective



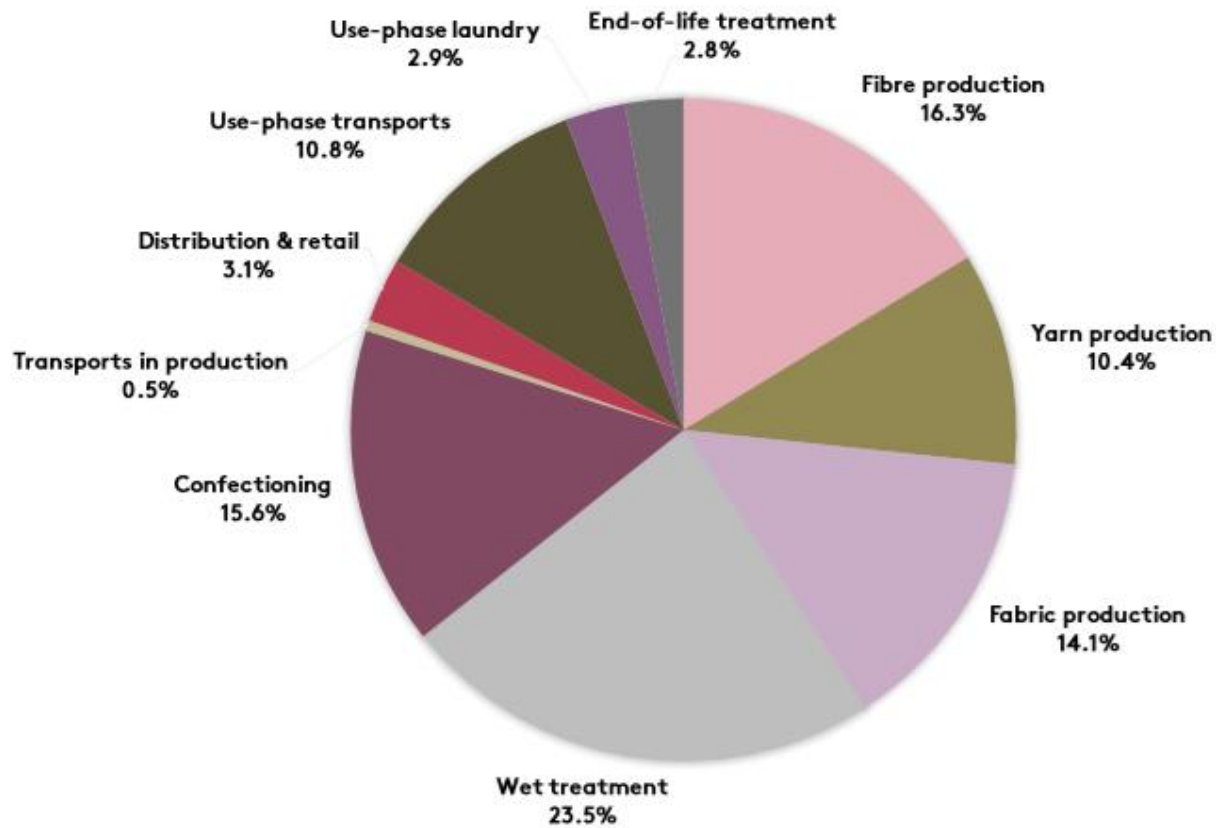
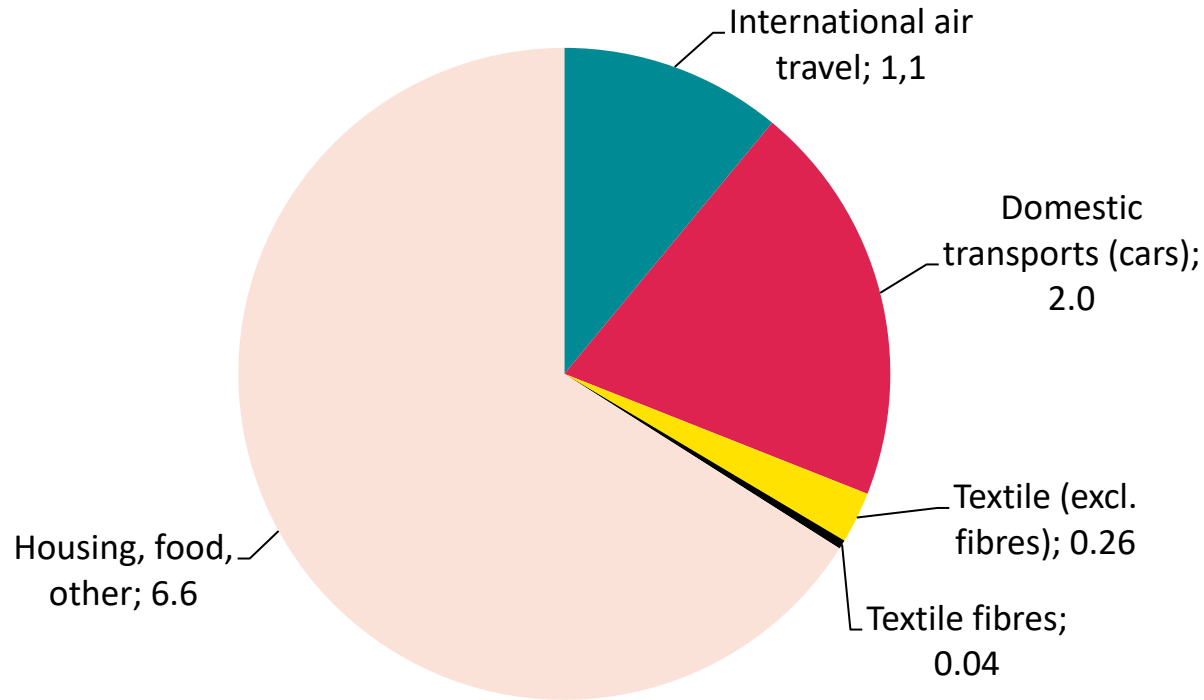


figure 2: Climate impact of Swedish clothing consumption, contribution of life-cycle phases. Figure from Sandin et al. (2019).

Climate change contribution per year and Swede: 11 tonnes CO₂

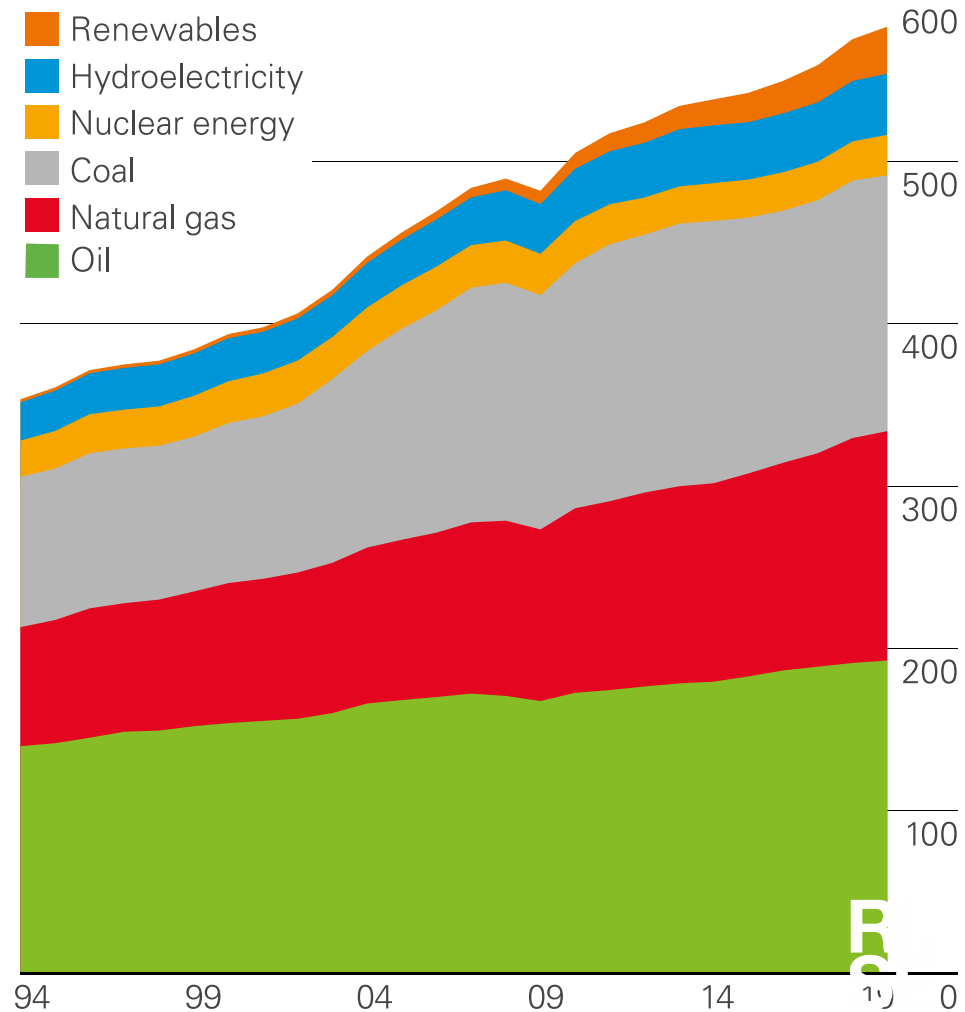


0.04 tonnes CO₂ ~ 16 litres of petrol

**We need to get climate neutral
- and ~90% of climate impact is caused by fossil fuels...**

350 million tonnes oil & gas to materials
(textiles ~50 million tonnes)

References: BP, Plastics Europe and Oerlikon





in total, seven kg fossil fuel per kg non-fossil material



The “fossil-free” cotton t-shirt

- In total SEVEN kg fossil fuel per kg non-fossil material

The Aral sea disaster..

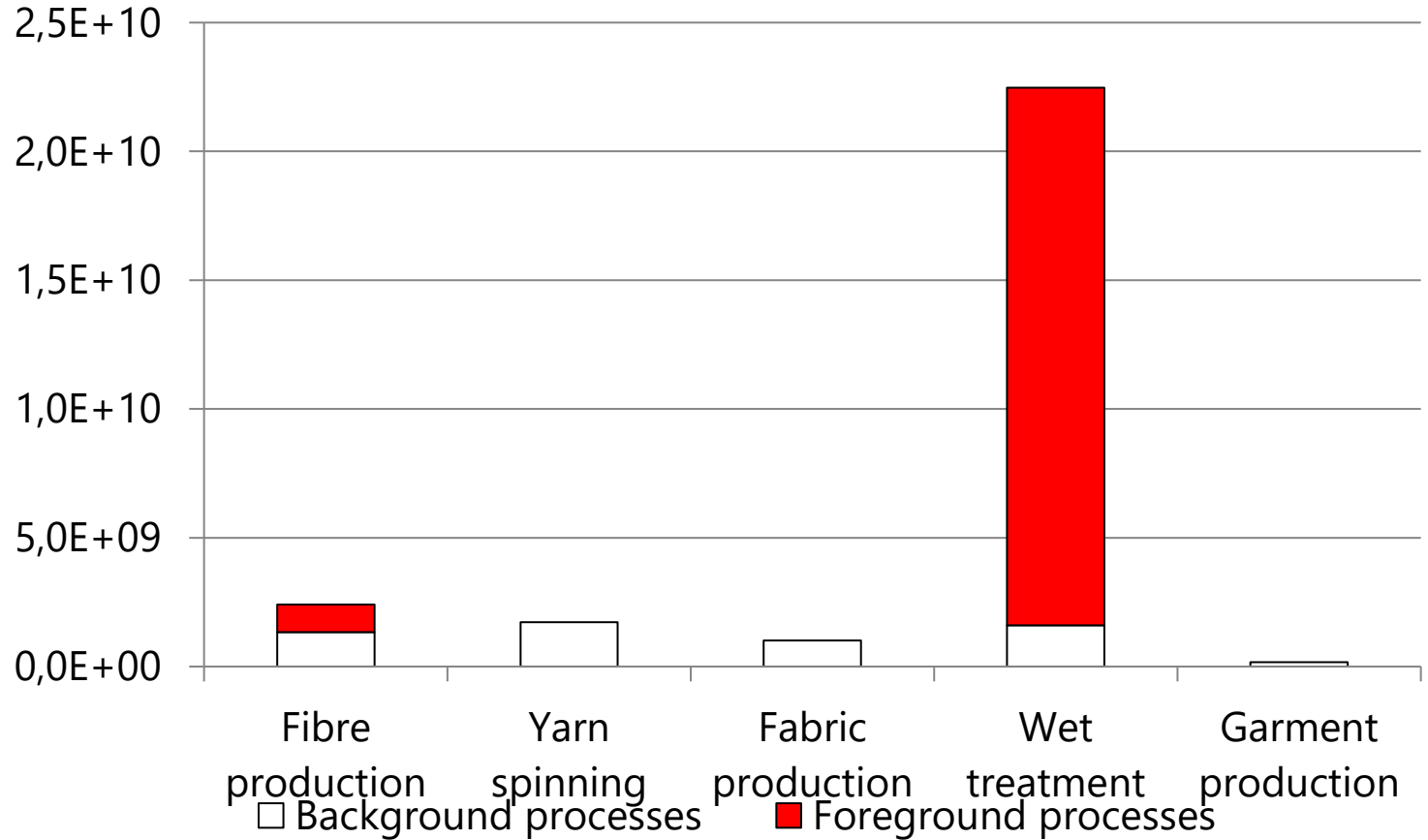
But, the sea's depth increased from 30 meters in 2003 to 42 meters in 2008.



The Kok-Aral Dam was built in 2005



Freshwater ecotoxicity impacts from the Swedish apparel sector over one year (cradle to gate)



Solve the function more effectively!

$$\text{Total environmental impact} = \frac{\text{Environmental impact}}{\text{Product}} \times \frac{\text{Number of products}}{\text{Person}} \times \text{Amount of people}$$

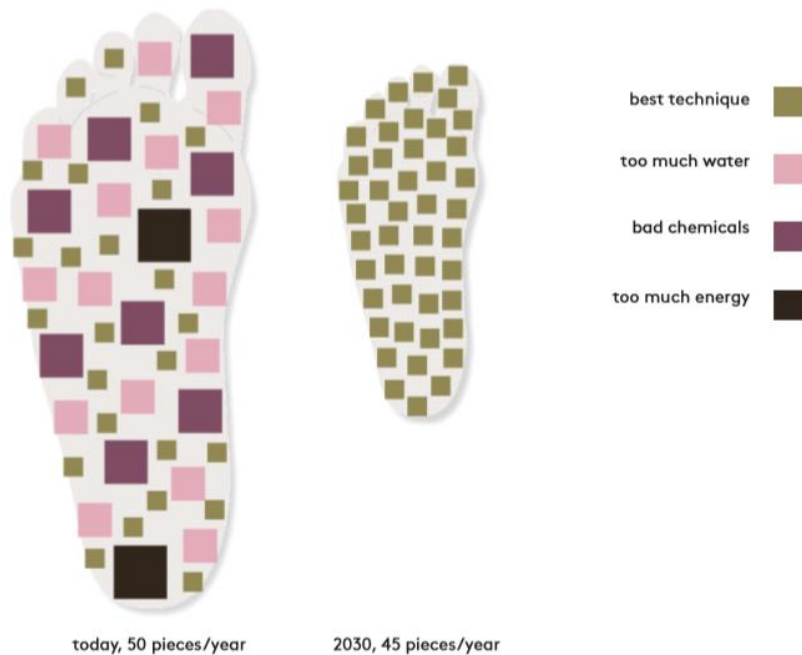
(Commoner, 1972; Ehrlich and Holdren, 1972)

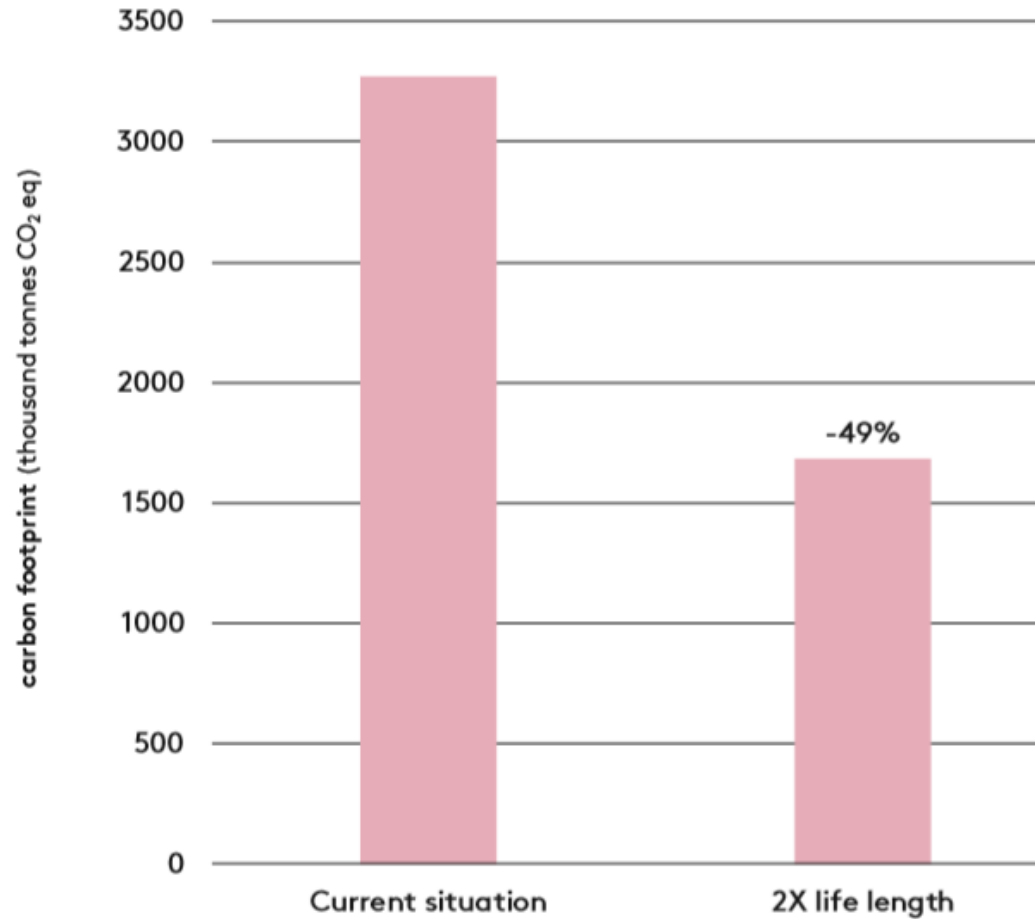
'Ecodesign' means the integration of environmental aspects into product design with the aim of improving the environmental performance of the product **throughout its whole life cycle**.

(Ecodesign Directive (2009/125/EC))

Back casting approach

- Environmental impact per product
 - Complicated many different actions needed
- Number of products per person
 - Increase life length

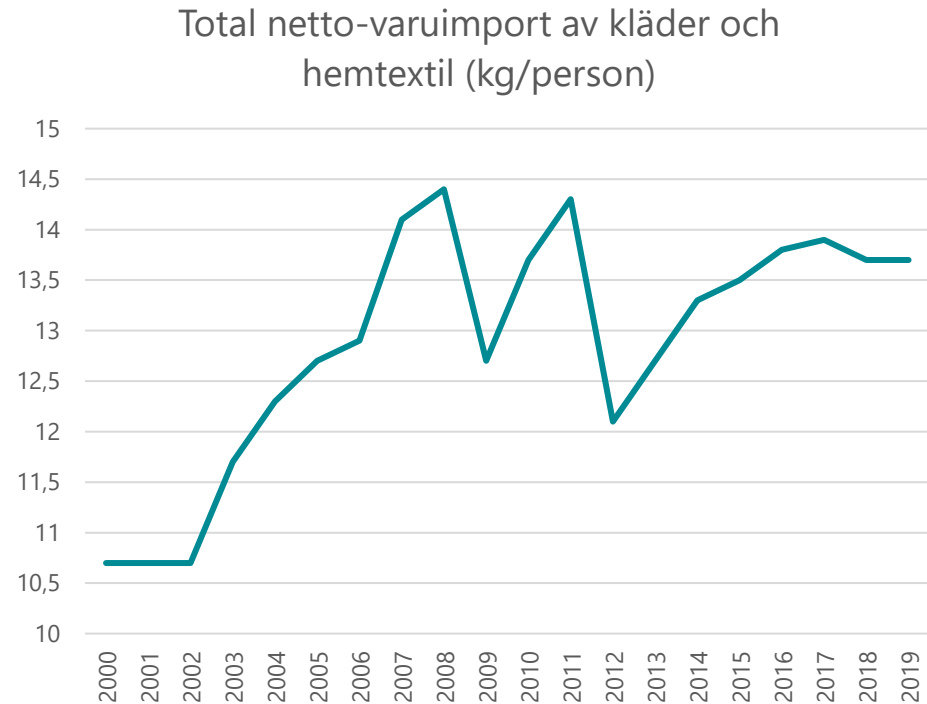




Hur går det?

- Konsumtionen har ökat med ca 30 % de senaste 20 åren.

Källa:
www.naturvardsverket.se



Läs mer:

- <http://mistrafuturefashion.com/sv/publikationer/>
 - Environmental assessment of Swedish clothing consumption - six garments, sustainable futures
 - Supply chain guidelines: vision and ecodesign action list
- <https://www.naturvardsverket.se/Sa-mar-miljon/Statistik-A-O/Textil/>
- <https://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Konsumtion-och-produktion/Hallbara-textilier/>

Tack!