# Reshaping the Fashion System

- summary of research results from Mistra Future Fashion

**Sigrid Barnekow**
Program Director

mistra future fashion


superdry


mistra
future
fashion
vision: enabling a systemic change
of fashion industry & society
funded by
MISTRA
The Swedish Foundation for
Strategic Environmental Research
hosted by
RI.
SE
11,5 million EUR
2011-2019

this is MFF

# this is MFF

- **system** analysis
- **behavioral** science
- **textile** material science
- strategic **design** thinking
- **waste** management processes
- **policy** assessment and recommendations
- **chemical** and **biological** engineering
- **consumer** communication
- **cellulosic** fiber processing
- **life-cycle assessements**
- **business models**
- textile **recycling**

RI.SE

swerea | IVF

Stockholms universitet

CBS COPENHAGEN BUSINESS SCHOOL HANDELSHØJSKOLEN

CHALMERS

BOKU

STOCKHOLM SCHOOL OF ECONOMICS

iiiee THE INTERNATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENTAL ECONOMICS

KTH VETENSKAP OCH KONST

THE SWEDISH SCHOOL OF TEXTILES UNIVERSITY OF BORÅS

ivl SVENSKA MILJÖINSTITUTET

PlanMiljø

ual: university of the arts london

re:newcell

MoRe Research

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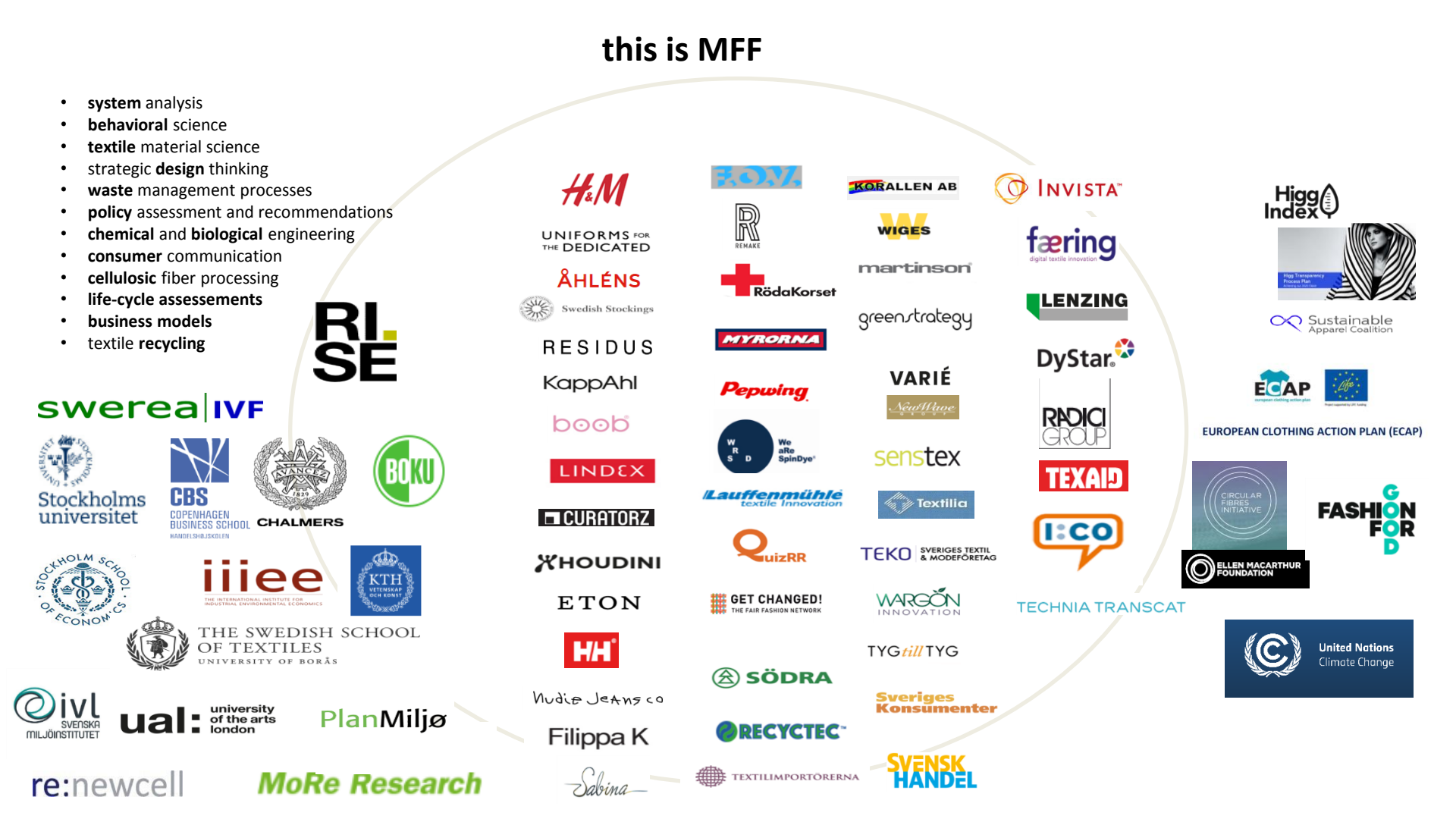
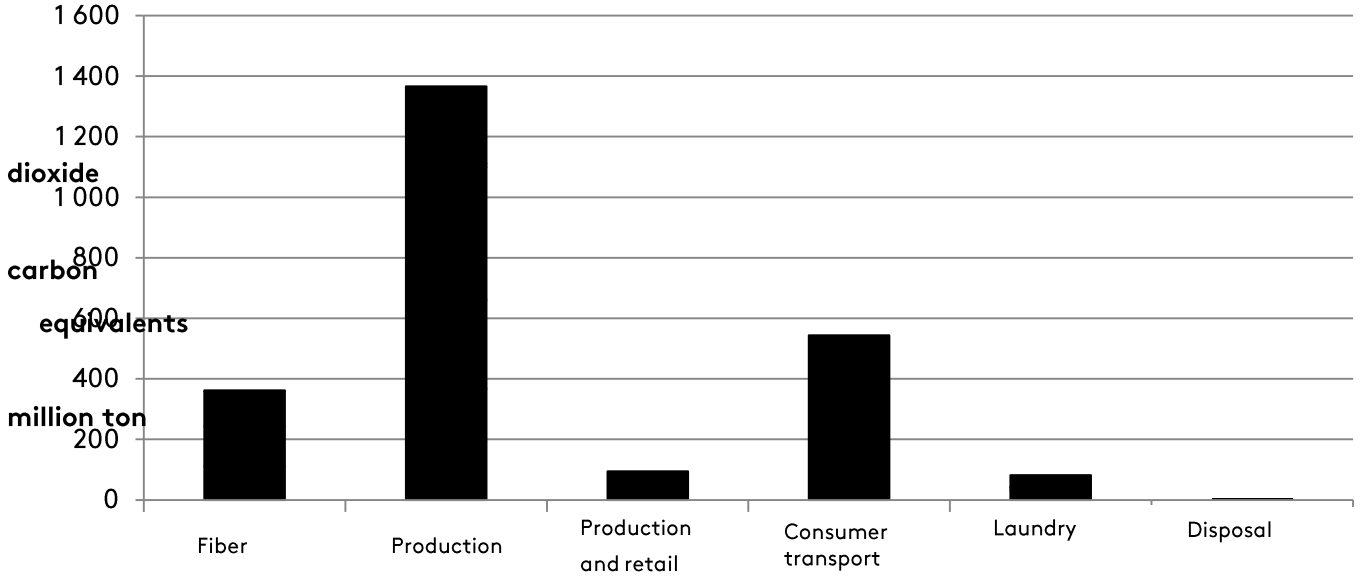


# what is sustainable?



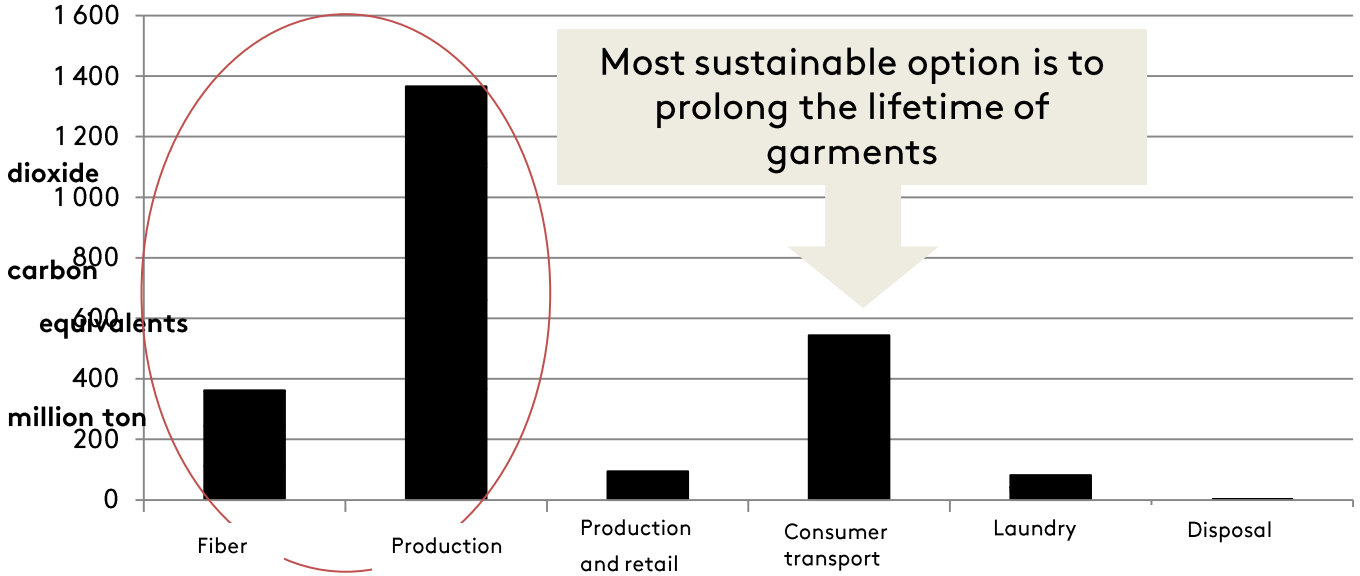

Dr Sandra Roos

mistra future fashion

Environmental assessment of Swedish fashion consumption: five garments – sustainable futures.
Roos, Sandin, Zamani, Peters, 2015. A Mistra Future Fashion report.

swerea

# what is sustainable?

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mistra future fashion

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-68%
3 times
longer
mistra
future
fashion

# 1 design

We explore and evaluate the environmental potential of the design and user potential of short-life vs long-life garments, and the full spectrum in between, to find the most suitable choices for a circular textile economy for different types of garments and uses. Expected outputs will be recommendations, guidelines and tools for how to design for resource circularity.

# 2 supply

We identify the necessary actions in textile and garment supply chains to enable circular economy guidelines for governance on how to transition to and sustain a circular textile supply-chain.

# 3 user

We make recommendations on how to encourage sustainable consumer behavior and to increase user engagement in sustainable consumption. Specifically, we develop recommendations for increasing services for extending the life of garments, reuse, and second-hand consumption.

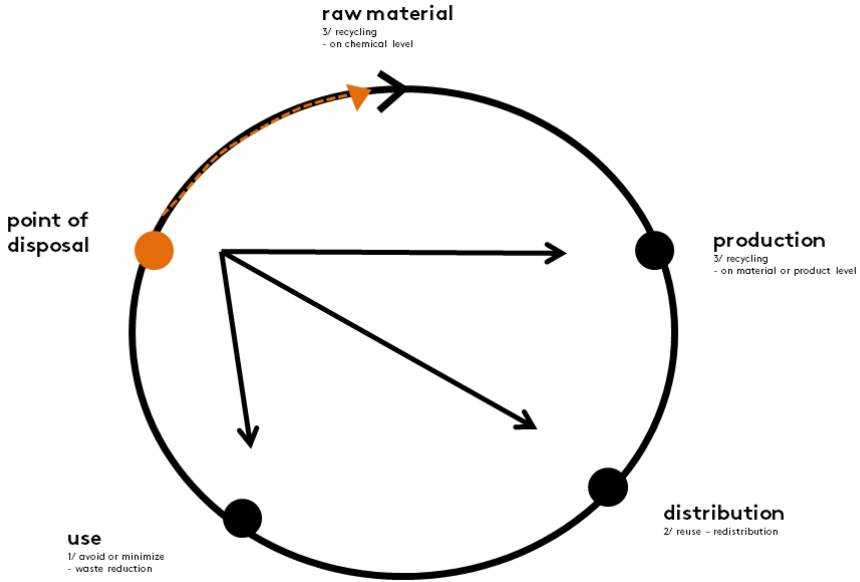
# 4 recycling

We develop knowledge and new processes in recycling methods and the impact of post-consumer textiles in order to provide guidance on necessary steps to enable sustainable textile recycling.

# strategic design

consider **speeds & material cycles**

plan for **optimum use & recycling**






Dr Kate Goldsworthy


Professor Rebecca Earley

ual: university of the arts london

# CIRCULAR DESIGN SPEED

**Material Longevity** ⟷ **Product Longevity**

**short-life**
**multiple loops**

**long-life**
**extended loop**

**'Products are fleeting,**
**only materials can last forever'**
*(Chapman, 2016)*

# SPEEDS

design 1

Designing to change
**material systems**

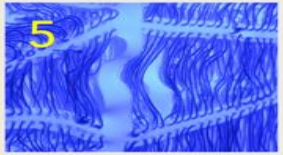
FAST


SEAMSDRESS

Dr. Kate Goldsworthy and David Telfer


A.S.A.P. (PAPER CLOTH)

Prof. Kay Politowicz and Dr. Kate Goldsworthy in collaboration with Dr. Hjalmar Granberg, Sandy MacLennan and David Telfer




DENATURE

Miriam Ribul in collaboration with Dr. Hanna de la Motte

## Transforming Industry

Designing within current industrial and economic systems. The circular economy. Improving and intervening with materials and production processes. Recycling, upcycling, low toxicity, closed loop

Designing to change
**social models**

SLOW


SMÖRGÅSBOARD

Melanie Bowles and Kathy Round


SWEAVER

Josefin Landälv


FAST REFASHION

Prof Becky Earley

## New Business Models

Designing for new business models and social systems (fashion libraries, collaborative consumption, ethical production, local communities)

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*Textile Toolbox, Earley & Goldsworthy, UAL (2014)*

ual: university of the arts london

# design 1

Paper / nonwoven

Industrial composting & recycling models

LCA

Design

Hjalmar Granberg

Tatjana Karbenja

RI. SE

swerea | IVF

Dr Sandra Roos

Dr Greg Peters

CHALMERS

Kay Politowicz

Dr Kate Goldsworthy

ual: university of the arts london

Professor Rebecca Earley

# CIRCULAR DESIGN SPEEDS

## Pilot Project

ual: university of the arts london

Filippa K

NOVEMBER 2018

Design Researchers in Residence at Filippa K

to test and develop the principles of the Mistra Future Fashion Design Theme.

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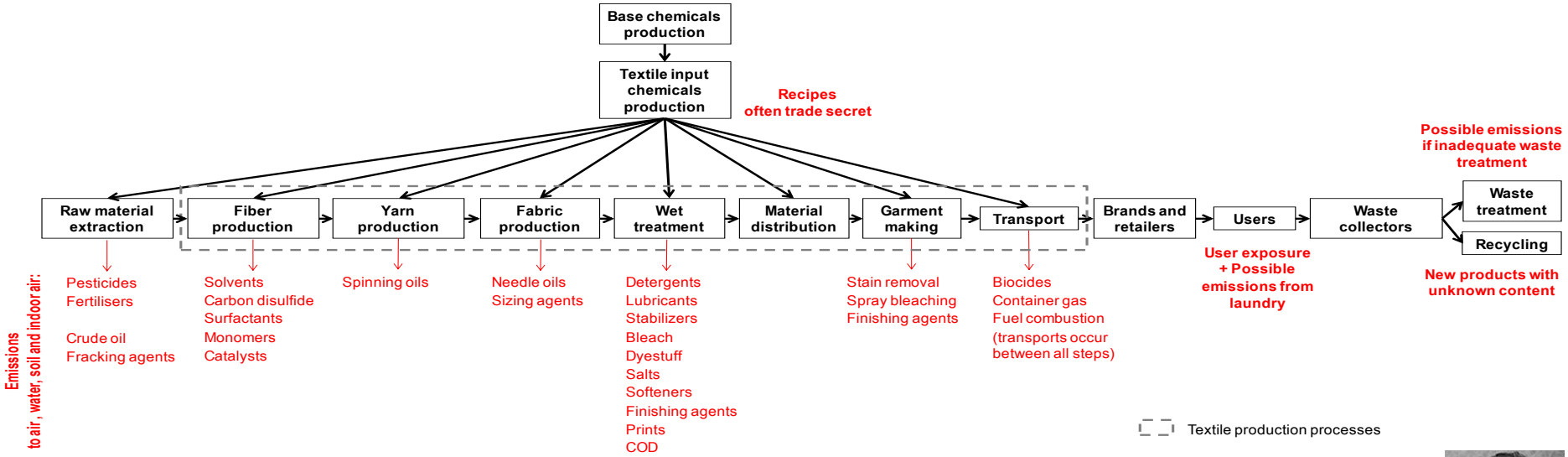
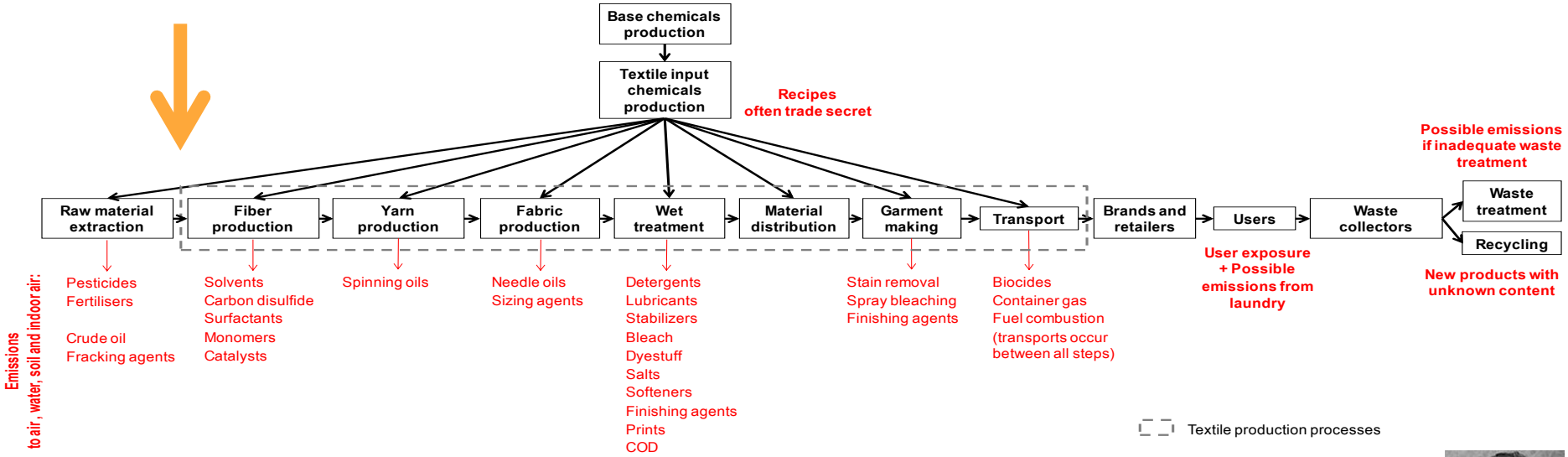



Advancing life cycle assessment of textile products to include textile chemicals. Roos, S, 2016. http://publications.lib.chalmers.se/publication/246361

Dr Sandra Roos

swerea IVF

# search for substitutes to Cotton

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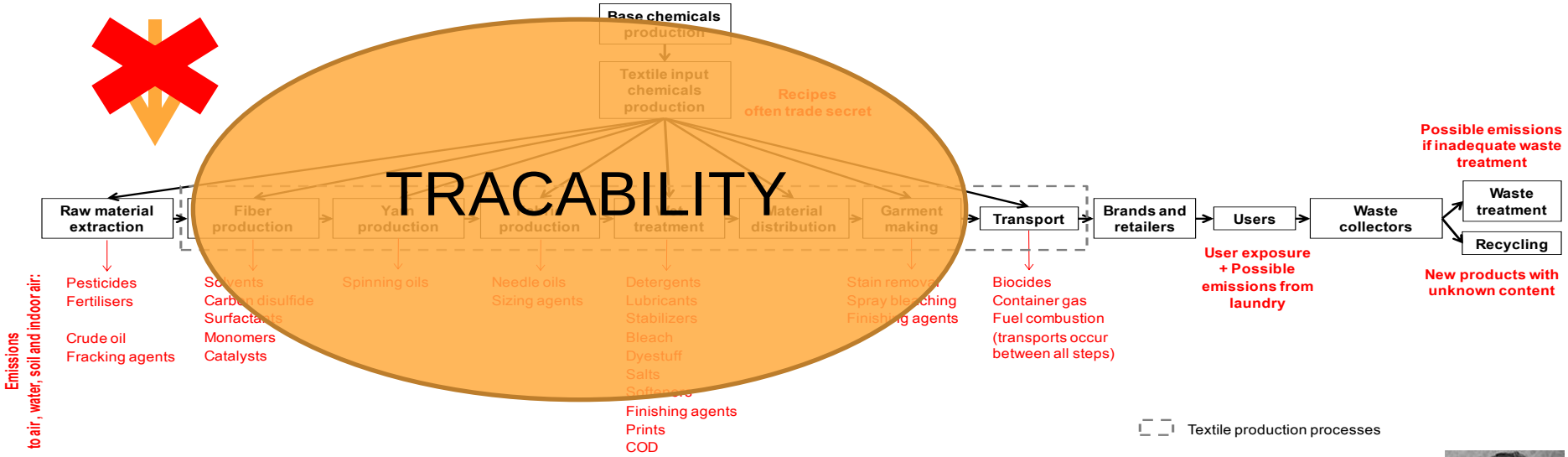
supply 2

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Dr Sandra Roos

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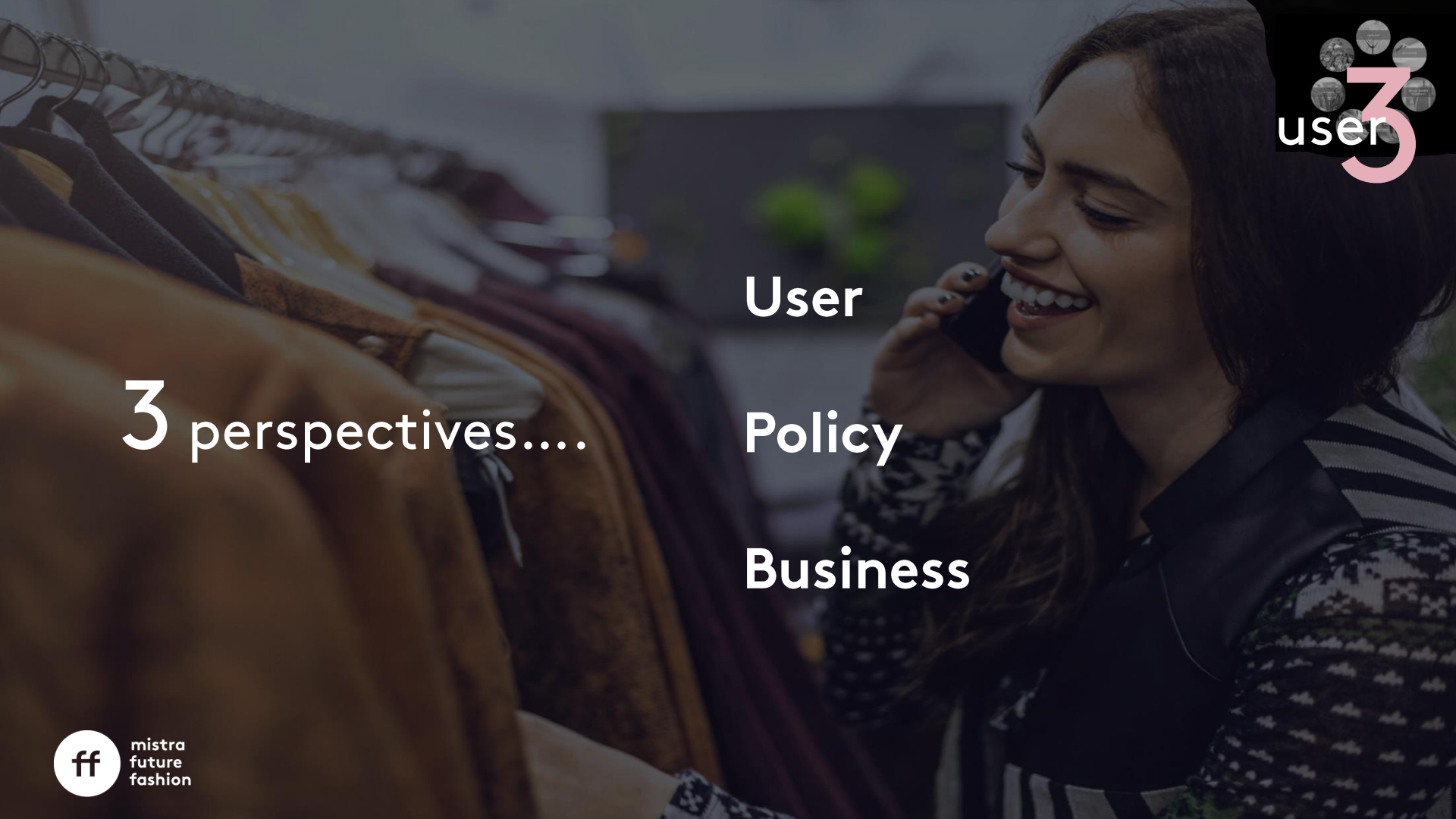

user 3
3 perspectives....
User
Policy
Business
mistra future fashion


user 3

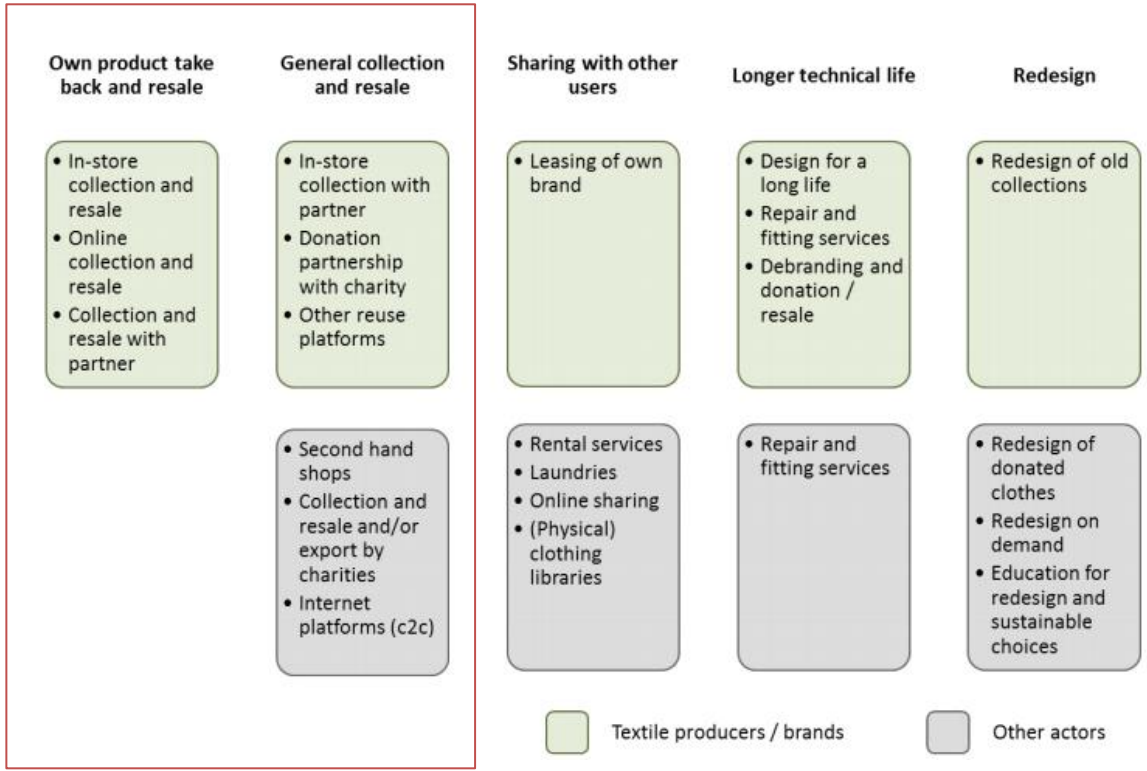
Wencke Gwozdz

Kristian Steensen Nielsen

CBS
COPENHAGEN
BUSINESS SCHOOL

mistra
future
fashion

# Business models supporting reuse, collective use, and prolonging life time of textiles




Maria Elander

David Watson

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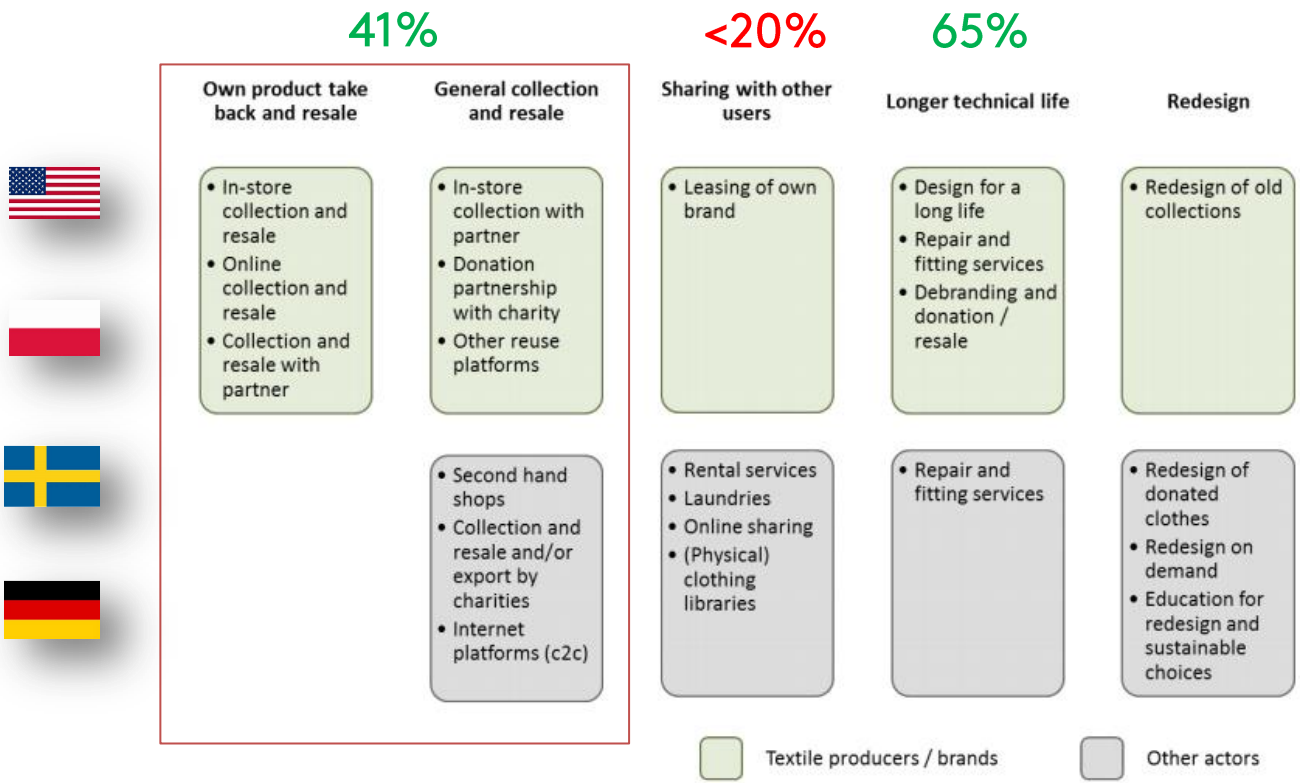
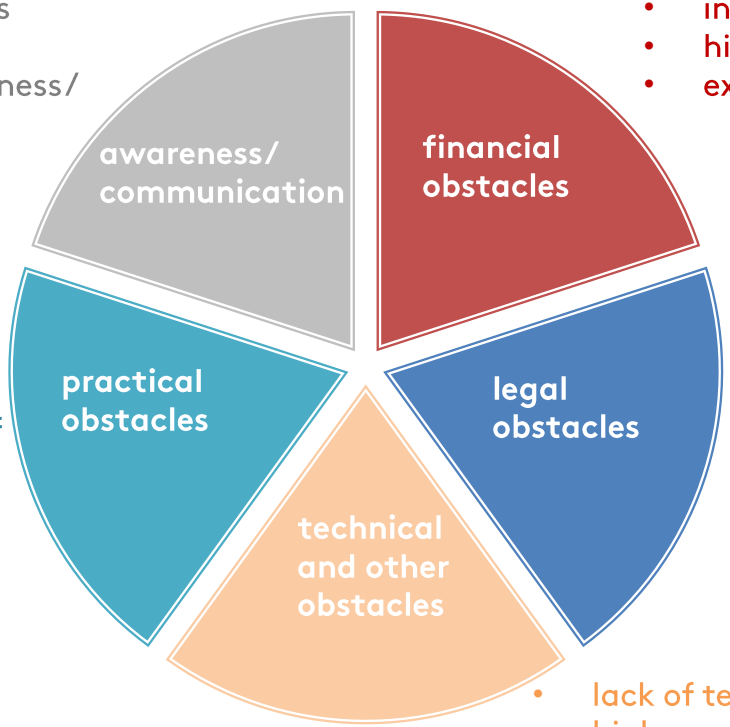





The data stems from the consumer survey with 4049 consumers, carried out in four countries (Germany, Poland, Sweden and USA) January 2017. The survey contained questions on clothing consumption behavior, attitudes, values, intentions and demographics with aim to explore consumers' current behaviors as well as their readiness for sustainable consumption.

# obstacles & challenges new business models

- marketing challenges
- low customer base
- low consumer awareness/ fixed mindsets




- investment
- high labor costs in Nordics
- expensive logistics

- who owns used textiles?
- trade-barriers due to waste definition

- low quality/durability of textiles
- how to design viable business model?
- up scaling of business model

- lack of technology
- high product prices

David Watson

Maria Elander


# policy instruments

- **reduce VAT** for reuse, sharing, second-hand, repair, leasing
- support for **second-hand in central shopping** malls
- **start up transition funding** and government-supported knowledge hubs
- **wage subsidies** targeted at these models

PlanMiljø

David Watson


mistra
future
fashion

# recycling

## EPR policy


## collection & sorting

*Image: SIPTex, pilot demonstating project automatic textilsorting (IVL.se)*

## recycling

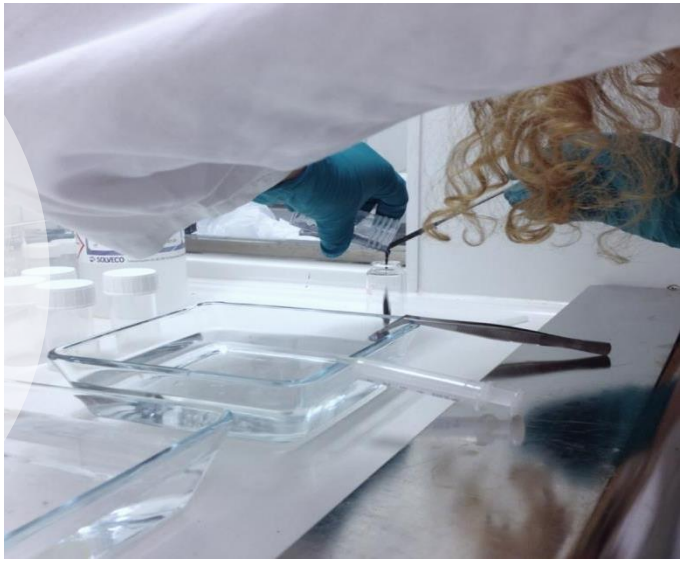


*Image: chemical recycling Polycotton fiber, Blend Re:wind by MFF*

# recycling 4

textile to textile recycling process that generates both recycled cotton and polyester


Dr Hanna de la Motte, RISE

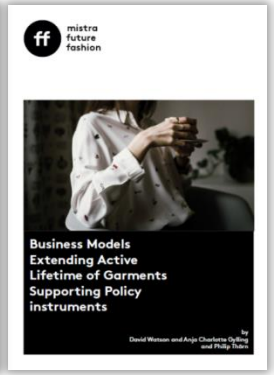
Dr Anna Palme, Chalmers

# example outputs

## microplastics

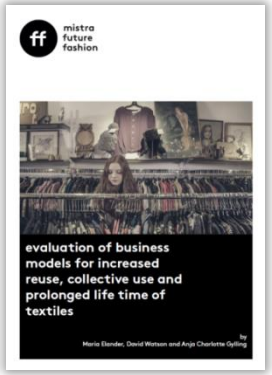

SwerealVF
with H&M, Filippa K and Boob Design

## Policy: Nudging new business models



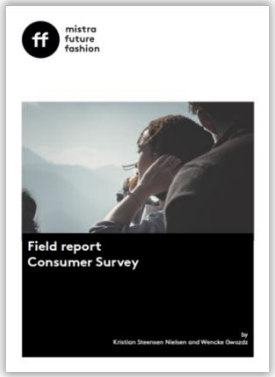

PlanMiljø, IVL

## Evaluation new business models



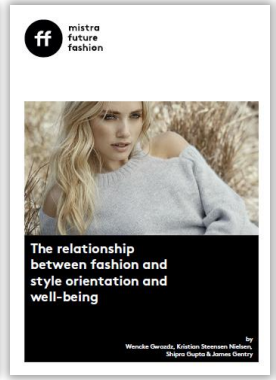

IVL, PlanMiljø
22 industries within news business models

## Consumer behaviour data




Copenhagen Business School
4175 consumers in 4 countries (USA, Poland, Sweden, Germany)

## Consumer segmentation: style vs trend




Copenhagen Business School

## Policy: EPR - producer responsibility


IVL, IIIEE

## Textile tagging


RISE

SUPPLY USER USER USER USER RECYCLING RECYCLIN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