



# Textiles in Circular Economy

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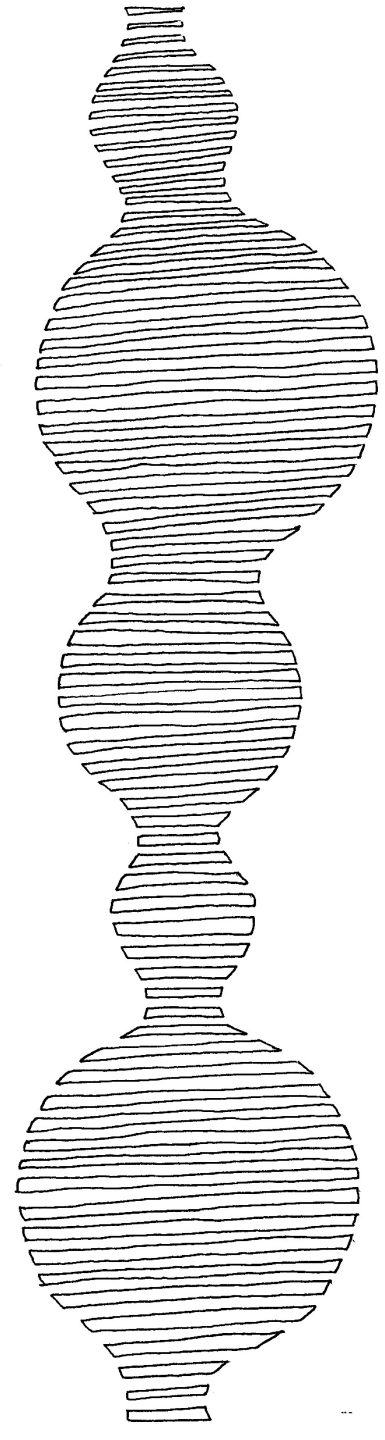
Turku University of Applied Sciences

South-West Finland Waste Management Company \*LSJH

22.8.2019



Me



# What's your relationship with clothes?

- Talk 5 minutes with the person next to you.
- Remember to listen!





Uses 25% of  
global use  
of  
chemicals

Second  
largest  
polluter

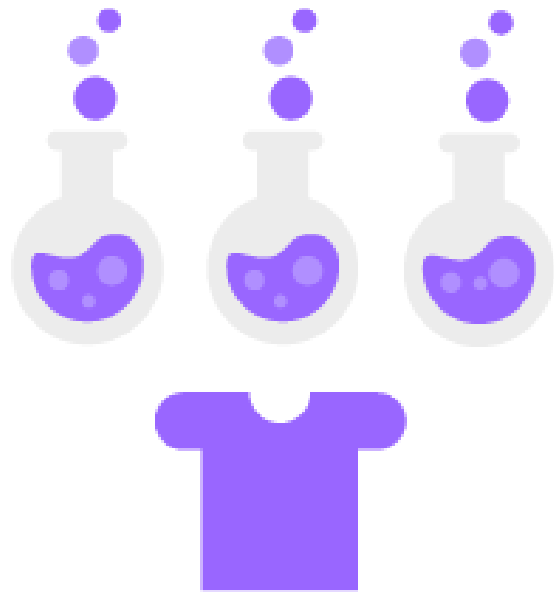
Second  
largest use  
of clear  
water

Over  
100 000 000  
employees

Textiles in  
numbers  
globally



# The textiles industry uses significant amounts of resources



**The production of 1 kilogram of cotton garments uses up to 3 kilograms of chemicals.**



**The equivalent of more than 3 trillion plastic bottles is needed to produce plastic-based clothes every year.<sup>1</sup>**



**Textiles production (including cotton farming) uses almost 100 billion cubic metres of water annually, representing 4% of global freshwater withdrawal.**

80% textiles donated to charity are imported to developing countries.





# Meanwhile in South-West Finland

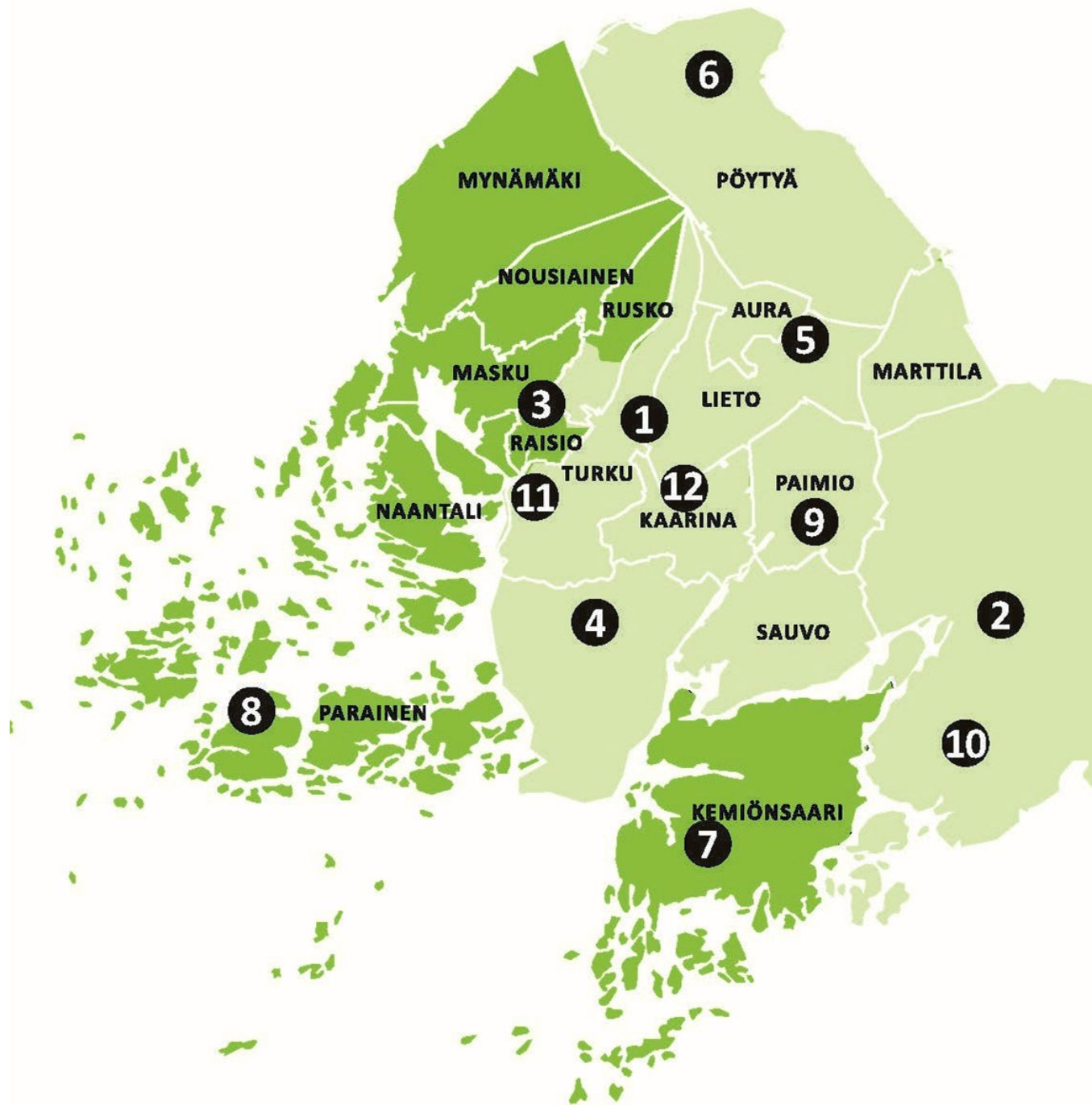
- 350 000 waste bags are gathered to the main waste center of SW Finland. Every day.
- That contains only the waste from the municipality.



# Textile gathering in South-West Finland

- Gathering and sorting since 2016
- 166 tons gathered 2018
- 0,4 kg/resident/2018
- ~11-17kg/ resident/year

Gathering is not recycling!





# Sorting

- Two sorting facilities
- More than 10 categories
- 1/3 reused or recycled

[Visite!](#)



Ellen MacArthur Foundation  
\*A New Textiles Economy  
Make Fashion Circular

[Short intro here,](#)  
the [whole publication](#)  
for heavy users.





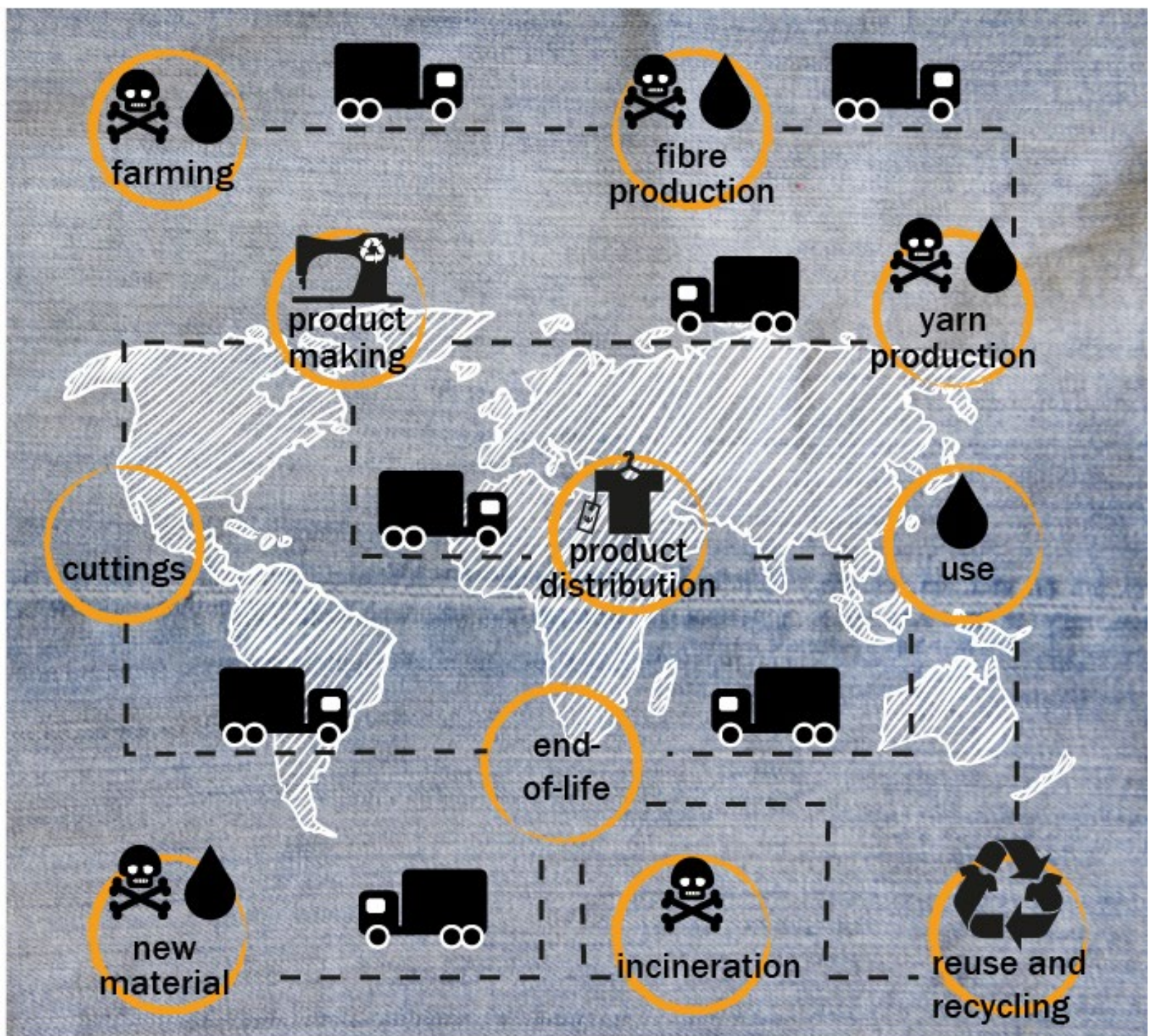
# T-shirt \*a task

- Take your group.
- Draw a life cycle of a t-shirt.
- You have 10 minutes time.
- Choose one from the group to present the picture.

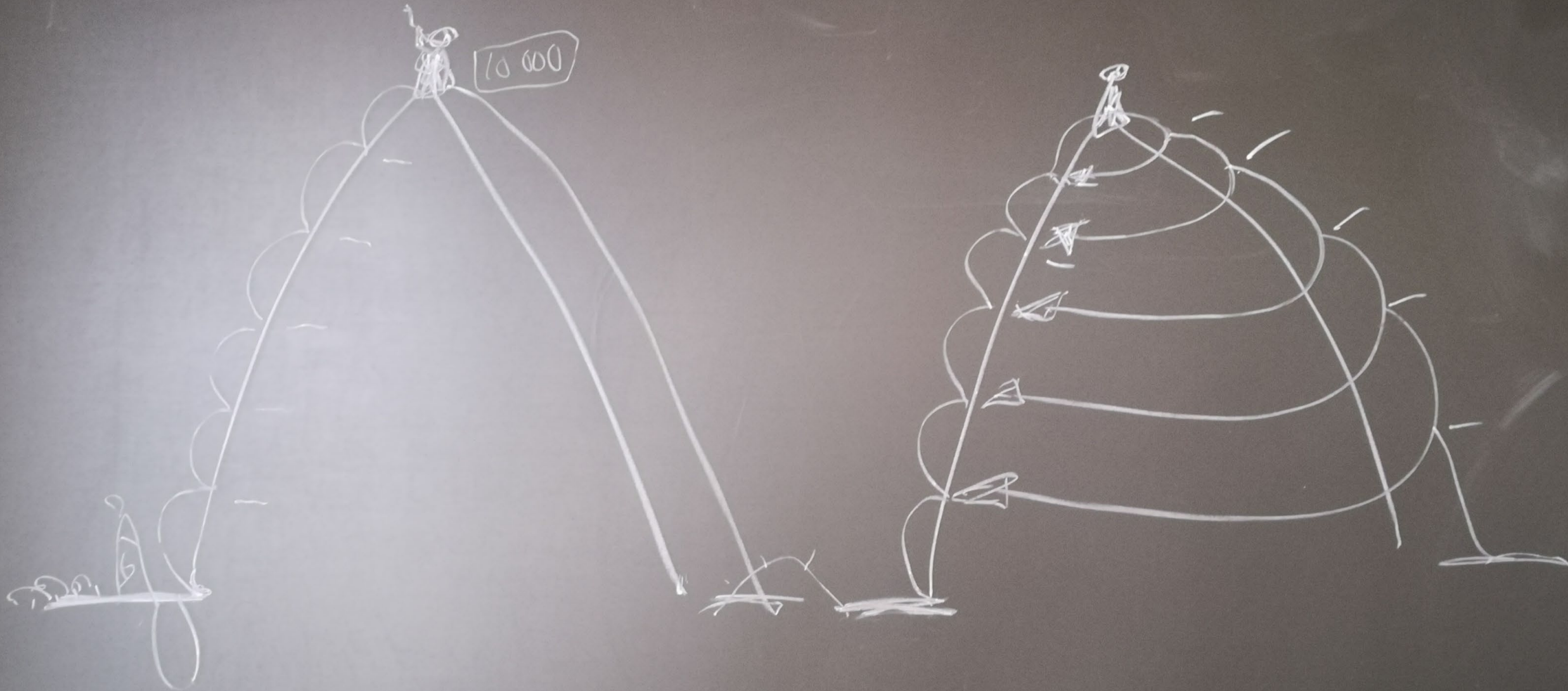


# Cotton

What ever you do,  
it'll make an impact.







From linear economy to circular economy...





# Recycling

Video by Pure Waste Textiles Ltd.





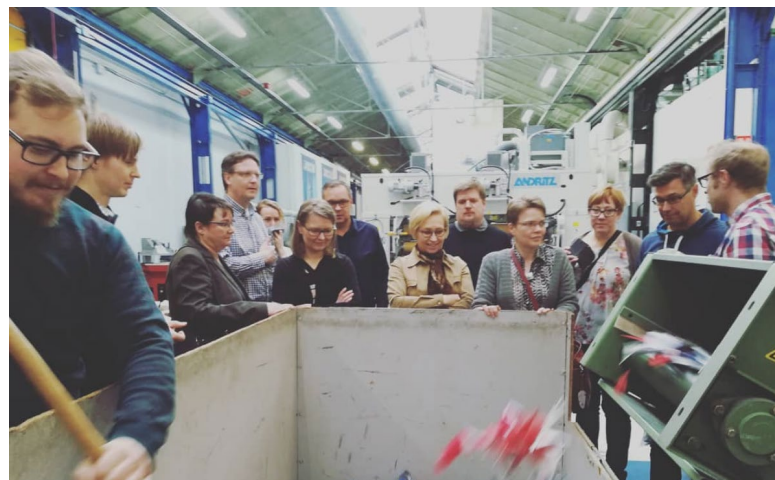
Meanwhile in  
Finland

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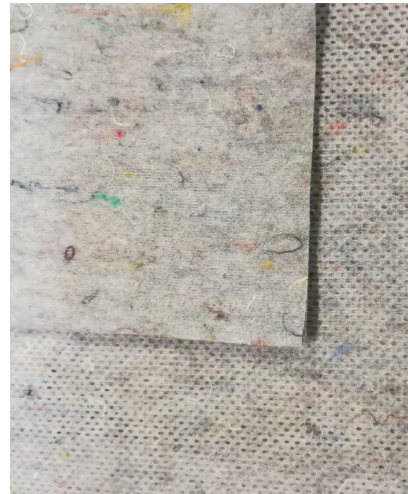
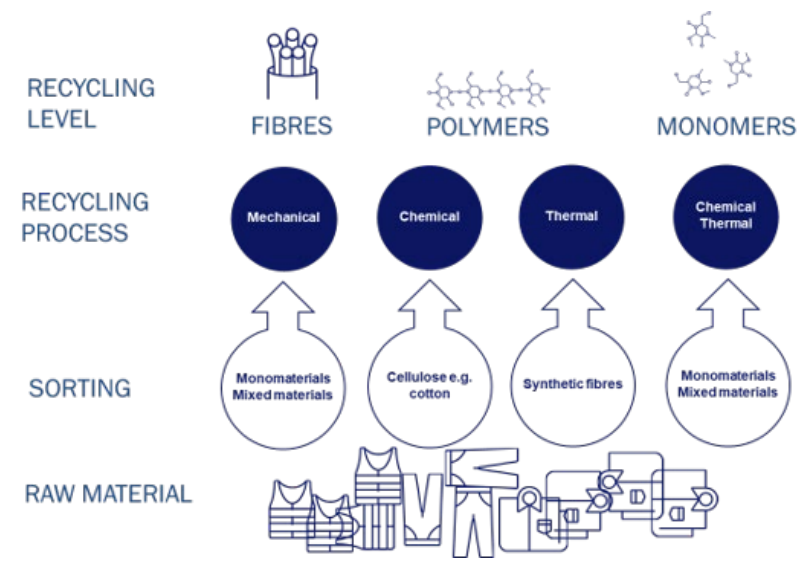














# Solutions

## Sewing Jam 2017

- Event for consumers.
- Aiming to boost repairing and reduce buying.
- 3 weeks, 200 participants
- S-W Waste Management Co.





# Solutions

## Sorting education

- Build up with sorting experts.
- Already in use at Sykli.
- Aiming to educate sorters to make material for quality recycle.
- Telaketju network





# Solutions

Thermally formed structures

- Student work
- Different solutions
- TUAS





# Solutions

## Acoustic panels

- Post-consumer textile opened at Laroche.
- Acoustic measurement, class B.
- Possible buyers if enough material.
- Soften Acoustics, TUAS





# Solutions

## Yarn production

- Post-consumer textiles opened at Laroche.
- Yarns containing up to 70 % recycled fibres.
- VTT





# Solutions

Post-consumer waste to textiles

- Yarn made containing 20 % postconsumer, 40 % pre-consumer and 30 % of polyester.
- Manufactured to knitted fabric and sewed to t-shirts.
- Pure Waste Textiles Ltd.





# Solutions

## Paperlike products

- Post-consumer textiles opened at Laroche and from Pure Waste.
- Mostly dust!
- Foam formed nonwovens.
- Textile consumption up to 70 %.
- VTT, Paptic, Suominen





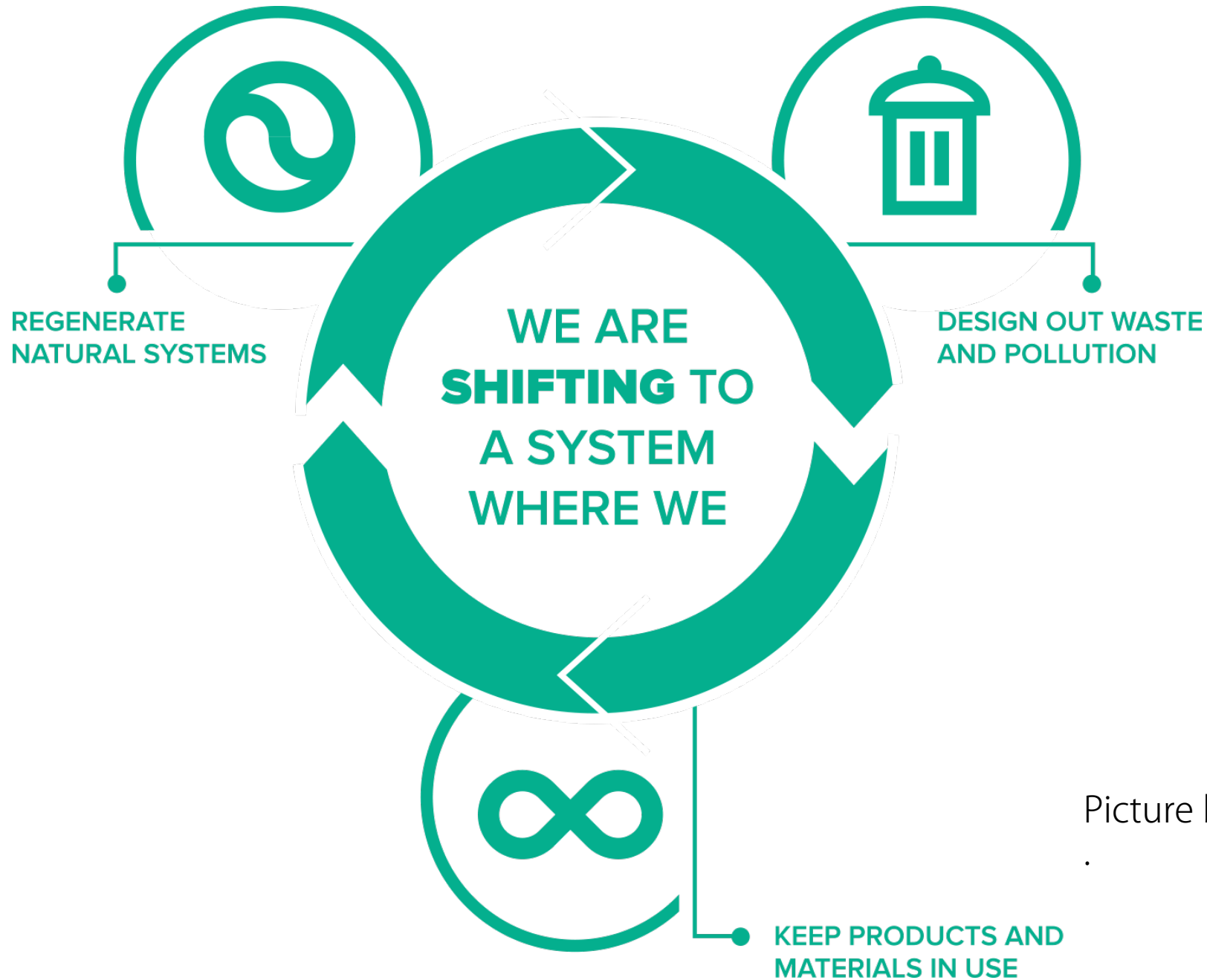
# Solutions

## Composite

- The end of the life cycle can be used as raw material to composites
- Use for example for outdoor furniture.
- Touchpoint





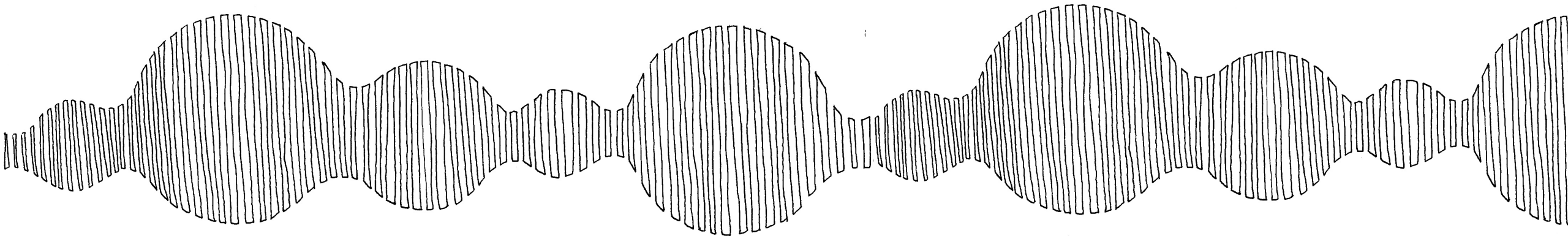


Picture by Ellen MacArthur Foundation



Reuse  
Repair  
Recycle  
Refine

Reduce  
Refuse  
Remember







Thank you!

[www.telaketju.fi](http://www.telaketju.fi)

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