



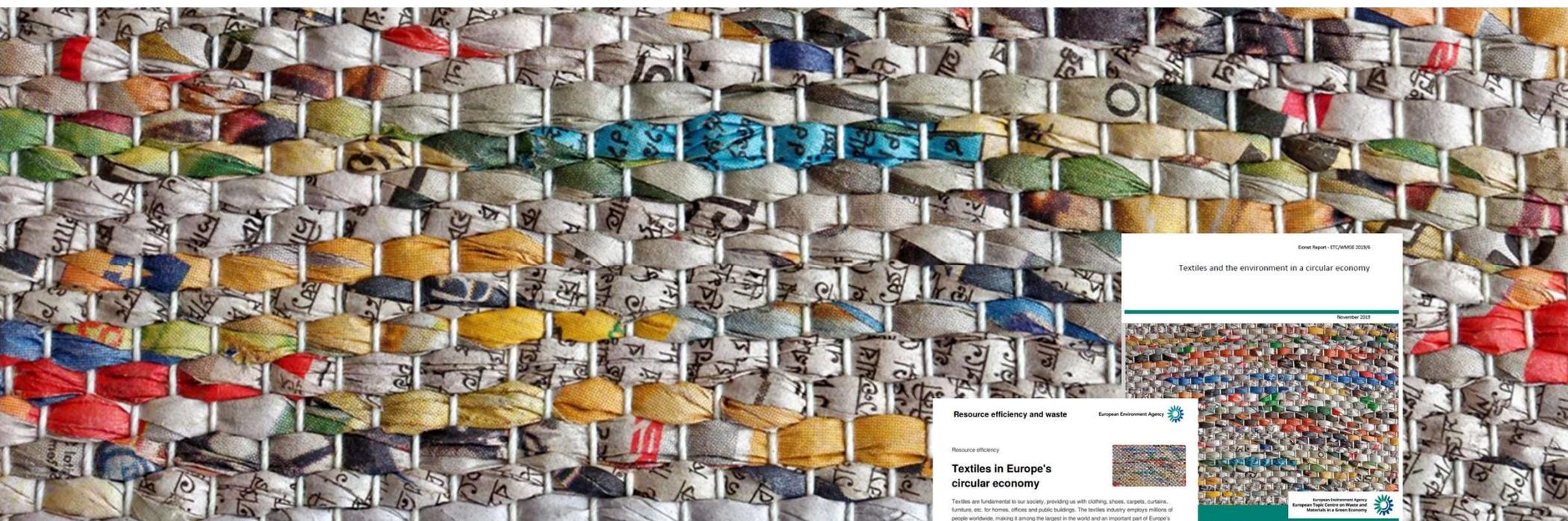
Environment and climate impacts from textiles

– an EU perspective, US NIST, 22 September 2021

Lars Fogh Mortensen, European Environment Agency (EEA)

My points

1. Textiles are on average the 4th biggest polluter from an EU consumption perspective
2. Natural and synthetic textiles have different environment and climate impacts
3. A menu of options to support circularity in textiles



Point 1. Textiles are on average the 4th biggest polluter from an EU consumption perspective

Event Report - ETC/WMSE 2023/5
Textiles and the environment in a circular economy

November 2019

Resource efficiency and waste



Resource efficiency

Textiles in Europe's circular economy

Textiles are fundamental to our society, providing us with clothing, shoes, carpets, curtains, furniture, etc. for homes, offices and public buildings. The textiles industry employs millions of people worldwide, making it among the largest in the world and an important part of Europe's manufacturing industry. However, textile production and consumption cause significant environmental, climate and social impacts by using resources, water, land and chemicals and emitting greenhouse gases and pollutants. This briefing provides an EU perspective of the environmental and climate pressures from textile production and consumption, and discusses how circular business models and regulation can help move us towards a circular textiles economy.

Key messages

- Textile consumption and production is highly globalised, involving millions of producers and billions of consumers across the world. In Europe, the sector employs 1.7 million people and Europeans consume on average 26 kg of textiles per person per year.
- In the past decade, the price of clothes has fallen relative to inflation, and each item is used less than in the past.
- The environmental and climate pressures and impacts related to the textiles system include resource use, land use, climate change and releases of pollutants.
- Considering supply chain pressures from an EU consumption perspective, clothing, footwear and household textiles is the fourth highest — or fourth worst ranked — pressure category for use of primary raw materials and water (after food, housing and transport); it is the second highest for land use and the fifth highest for greenhouse gas emissions.

Resource efficiency and waste | Resource efficiency | Textiles in Europe's circular economy



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Briefing + underpinning
ETC report (2019)

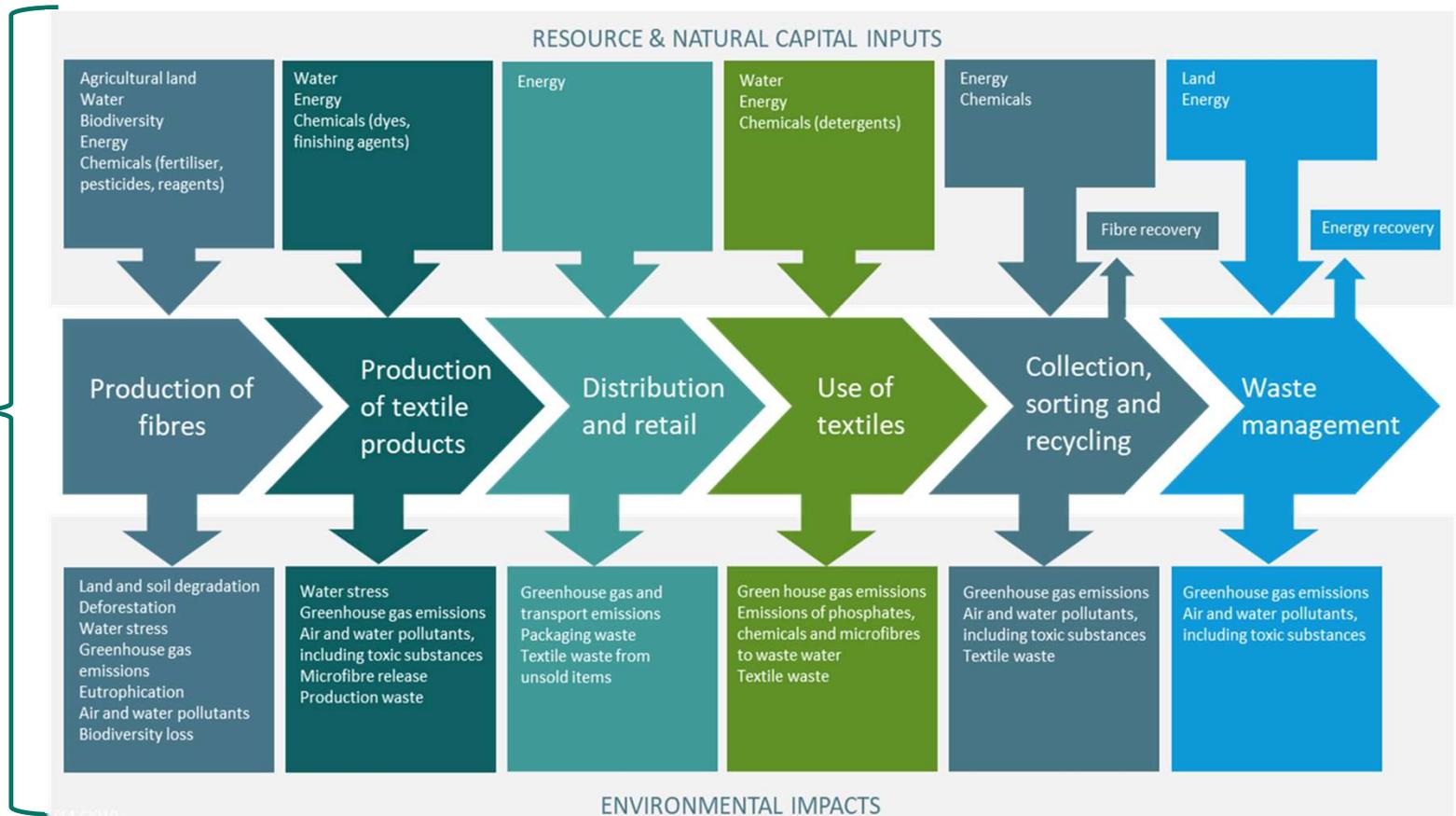
<https://www.eea.europa.eu/publications/textiles-in-europes-circular-economy>

European Environment Agency



Environment and climate impacts from textiles

- Impacts from all elements of the value chain
- Impacts highly embedded in trade
- Impacts from resource inputs and pressure outputs



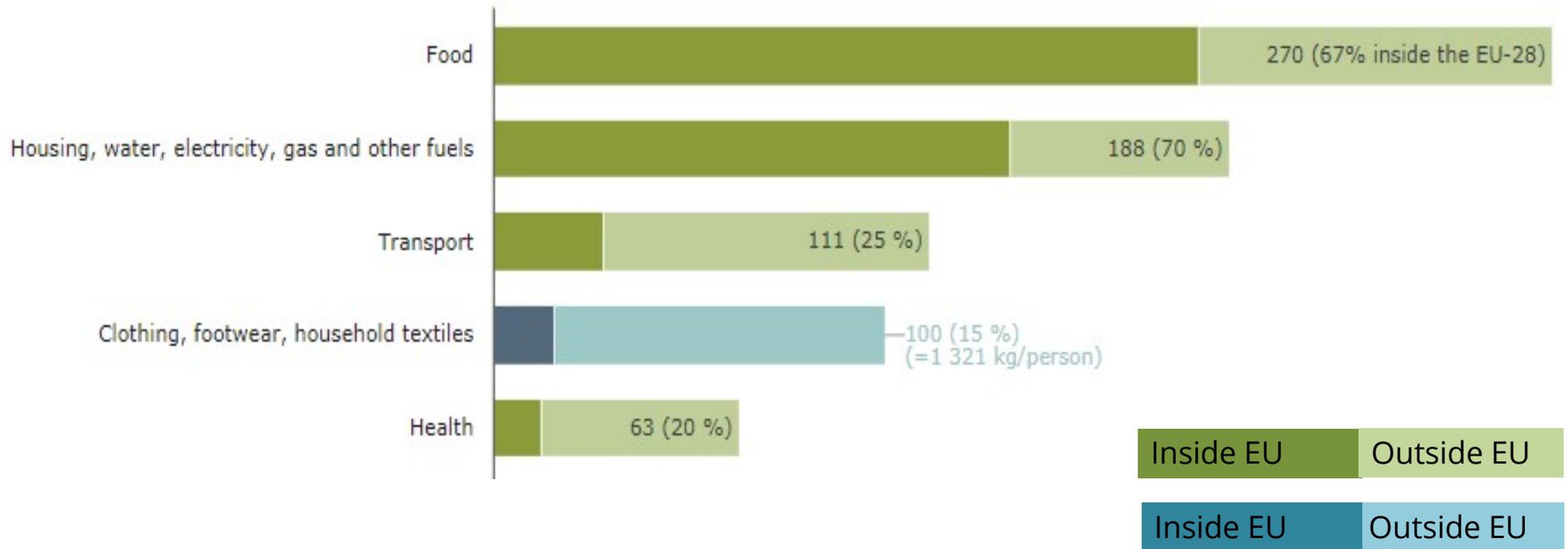
Impacts of EU textiles consumption



Source: illustration by VITO

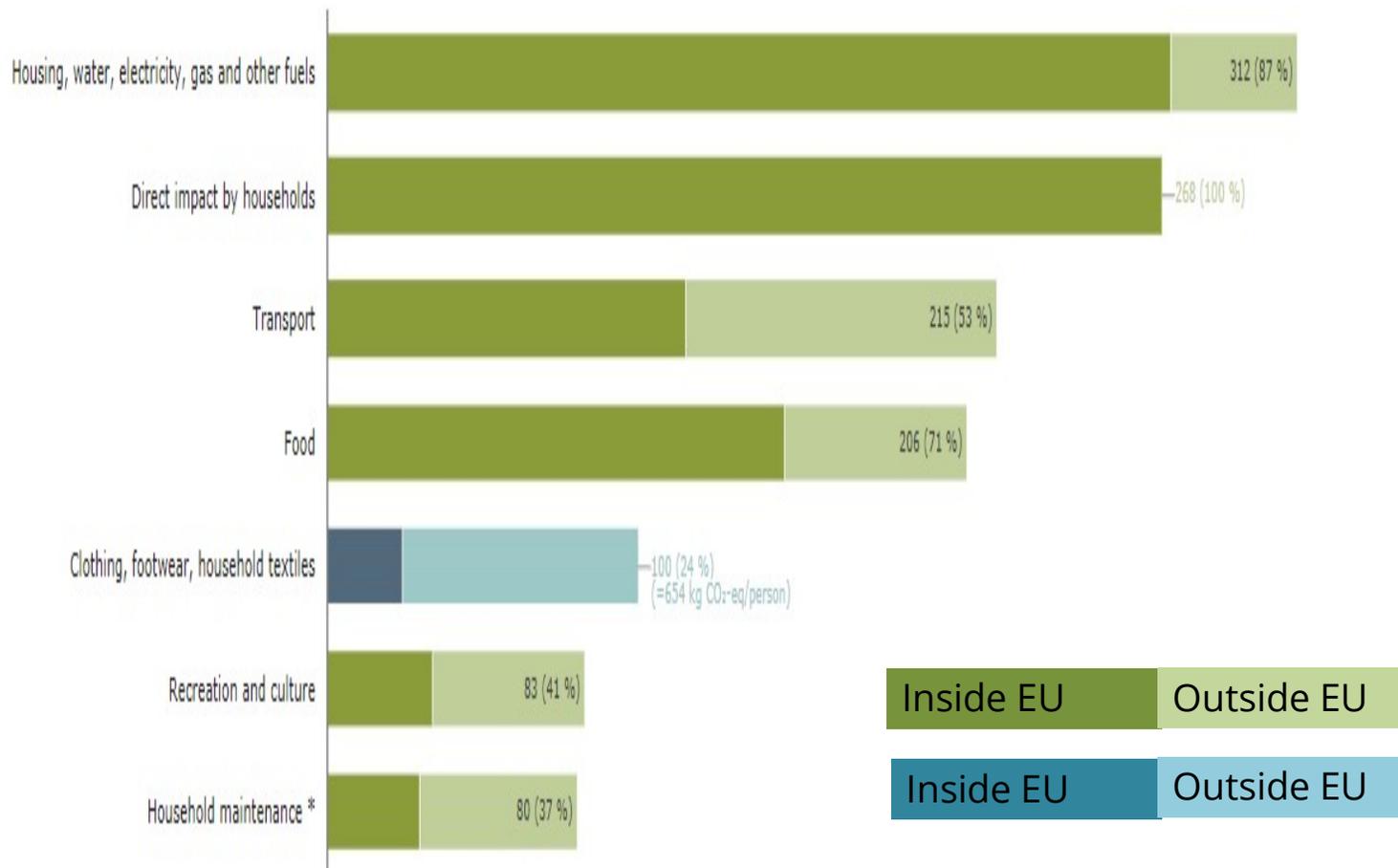
Raw material use for textiles

The **use of primary raw materials** in the upstream supply chain of EU-28 household consumption domains, 2017 indexed values with textile consumption = 100. (Source ETC/WMGE based on Exiobase v. 3.4)



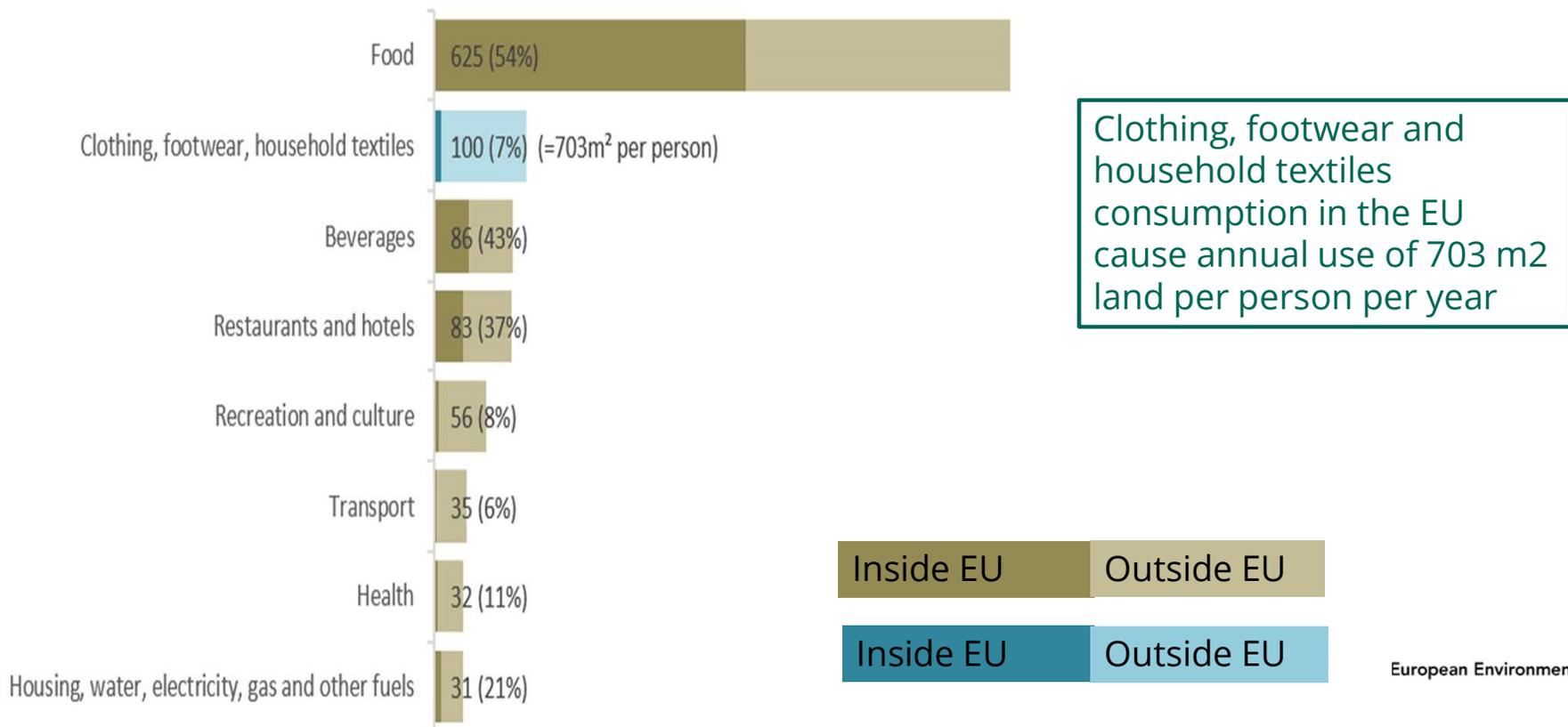
Greenhouse gas emissions from textiles

Estimated greenhouse gas emissions in the upstream supply chain of EU-28 household consumption domains, 2017 indexed values with textile consumption = 100 (Source ETC/WMGE based on Exiobase v. 3.4)



Land use for textiles

The land use in the upstream supply chain of EU-28 household consumption domains Indexed values with textile consumption equalling 100, EU-28, 2017. (Source ETC/WMGE based on Exiobase v. 3.4)





Point 2. Natural and synthetic textiles have different environmental and climate impacts

Ennet Report - ETC/WMSI 2021/1

Plastic in textiles: potentials for circularity and reduced environmental and climate impacts

28/02/2021

Resource efficiency and waste

Resource efficiency

Plastic in textiles: towards a circular economy for synthetic textiles in Europe

Plastic-based — or “synthetic” — textiles are woven into our daily lives in Europe. They are in the clothes we wear, the towels we use and the bed sheets we sleep in. They are in the carpets, curtains and cushions we decorate our homes and offices with. And they are in safety belts, and car tyres, workwear and sportswear. Synthetic textile fibres are produced from fossil fuel resources, such as oil and natural gas. Their production, consumption and related waste handling generates greenhouse gas emissions, use non-renewable resources and can release microplastics. This briefing provides an overview of the synthetic textile economy in Europe, analyses environmental and climate impacts, and highlights the potential for developing a circular economy value chain.

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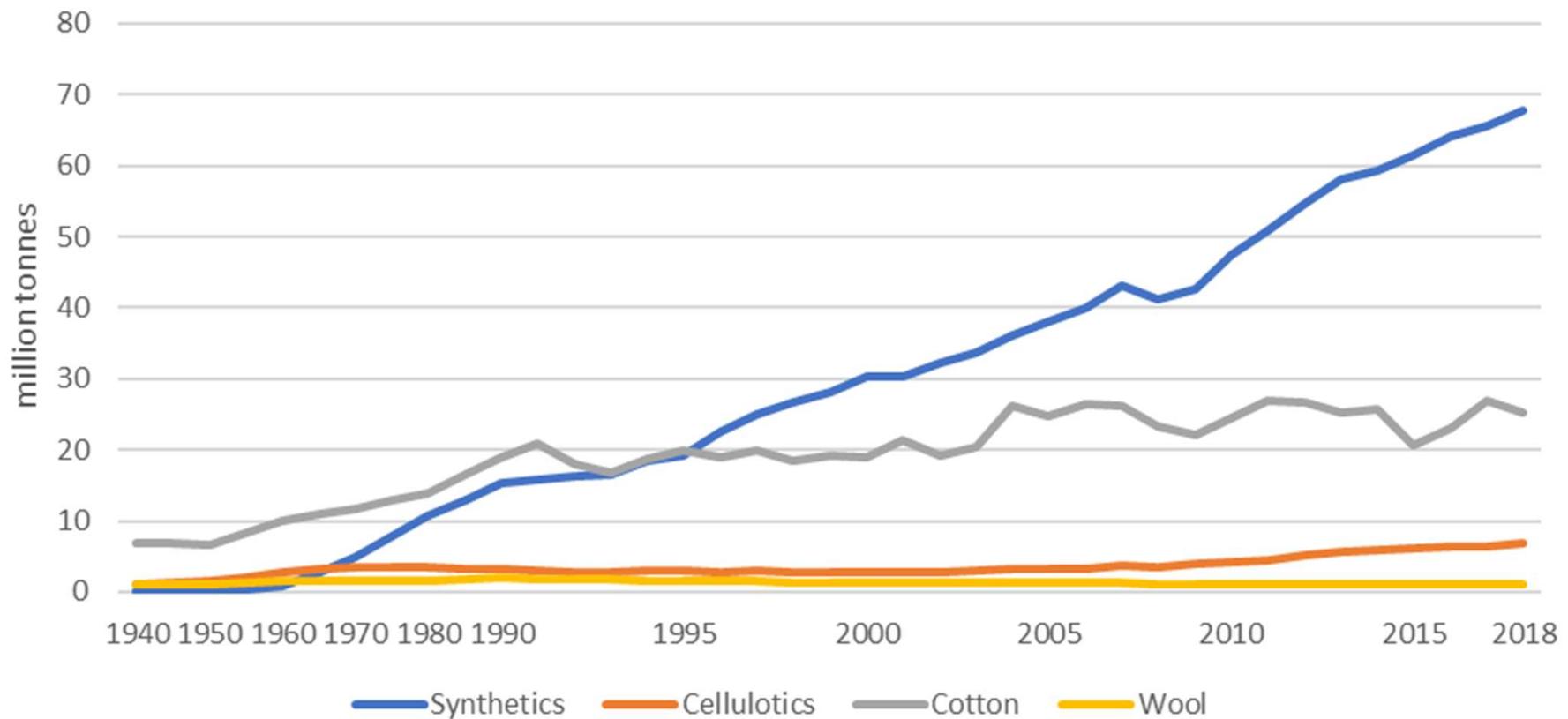
7 pages

Briefing + underpinning ETC report (2021)

<https://www.eea.europa.eu/publications/plastic-in-textiles-towards-a>

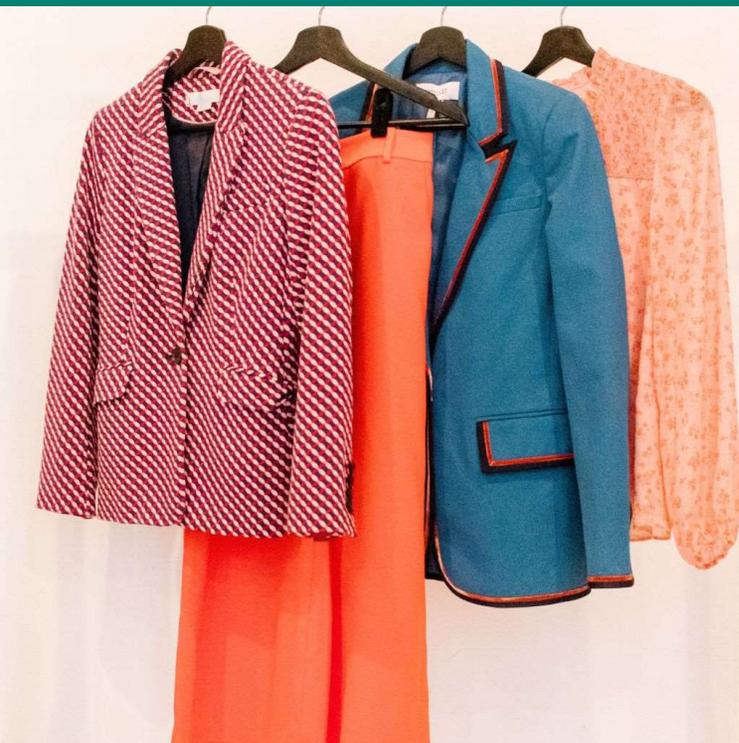
Global fibre demand

Global fibre demand, 1940–2018, million tonnes per year

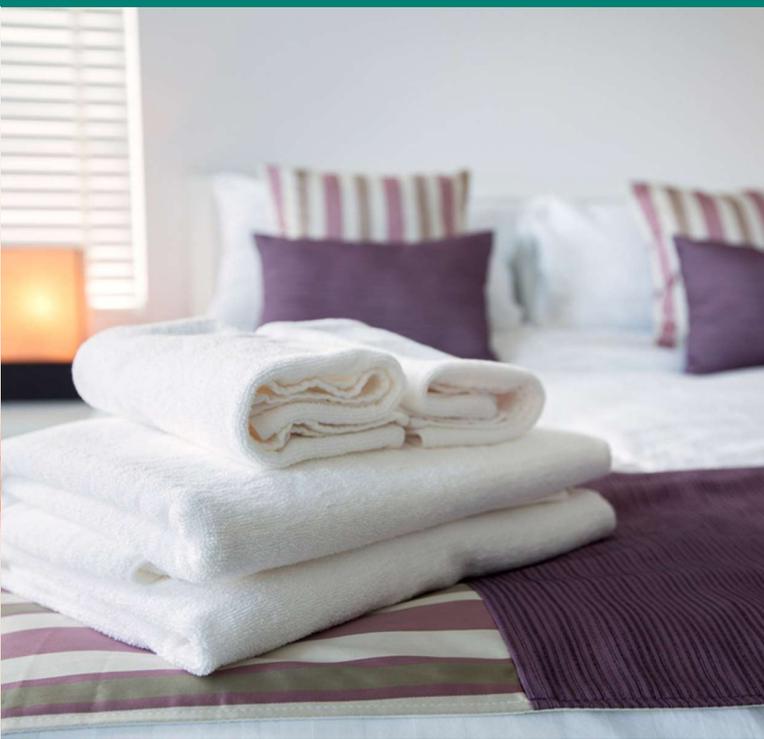


Source: CIRFS (2020)

Types of synthetic textiles



**Clothing – 60% synthetics
(mainly polyester/PET)**



**Household textiles – 70% synthetics
(mainly polyester/PET and nylon)**

Polyester

Cheap, strong, durable, resistant to shrinking, stretching and creasing

Nylon

strong, flexible, good resilience

Acrylic

soft, flexible, thick and fluffy

Elastane

elasticity

Use of synthetic textiles



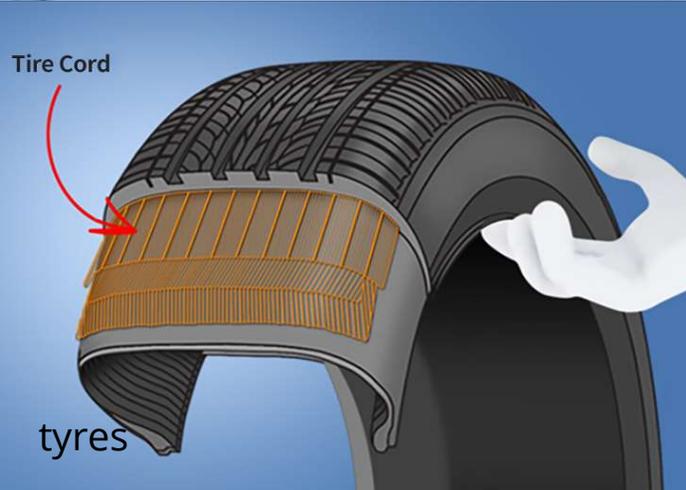
sportswear & gear



protective
workwear



carpets



tyres

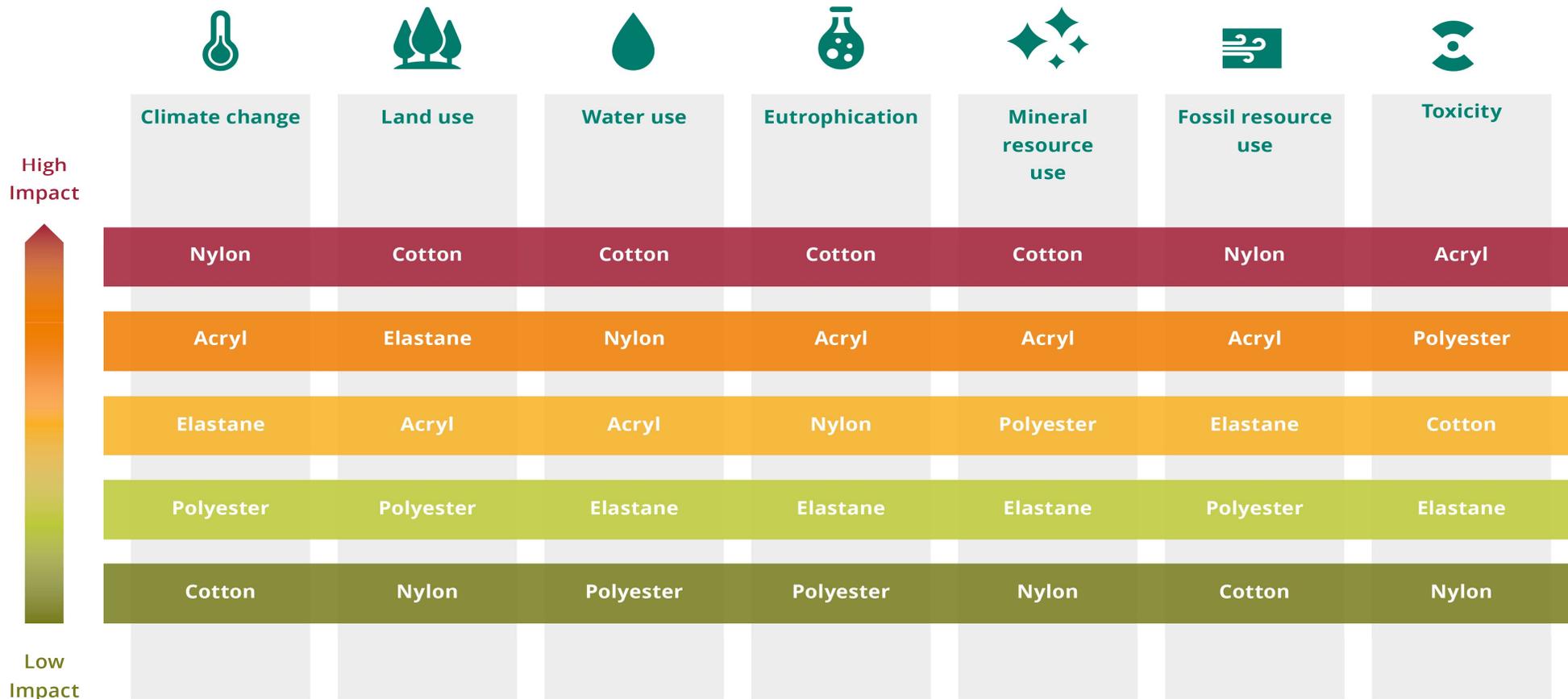


medical



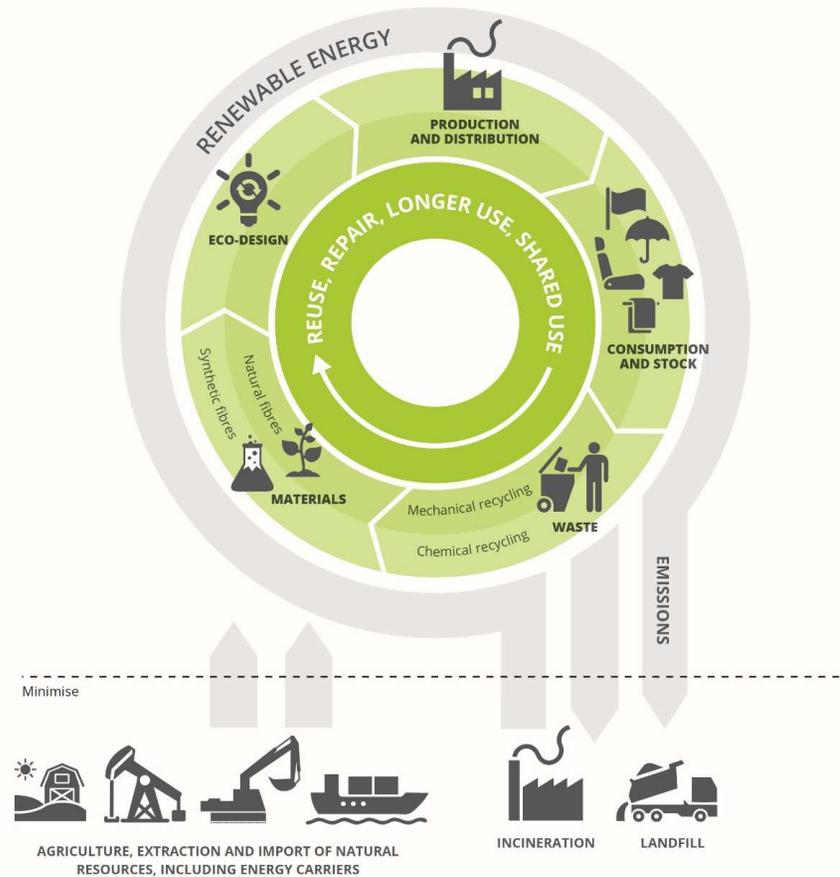
machinery

Impact of manufacturing of 1 kg dyed woven fabric



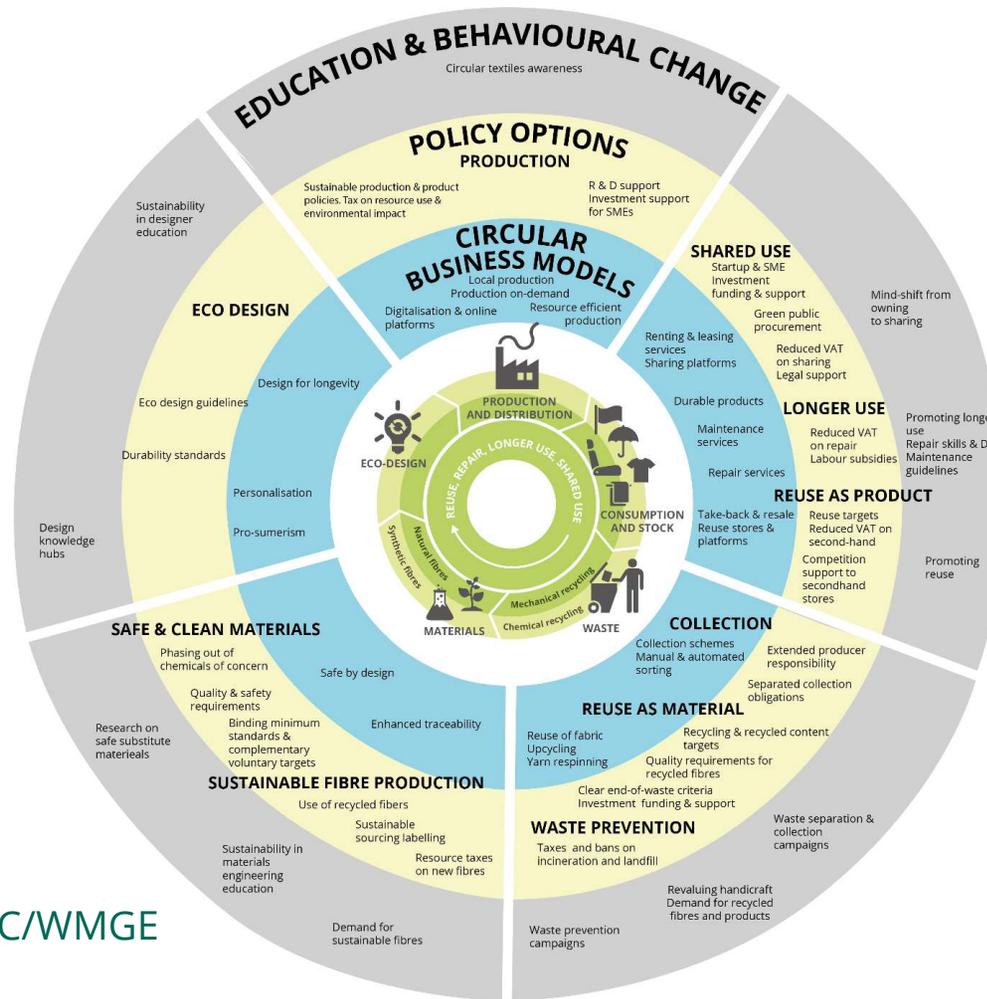
Source: EEA and ETC/WMGE, illustration by CSCP

Vision of a circular economy for textiles

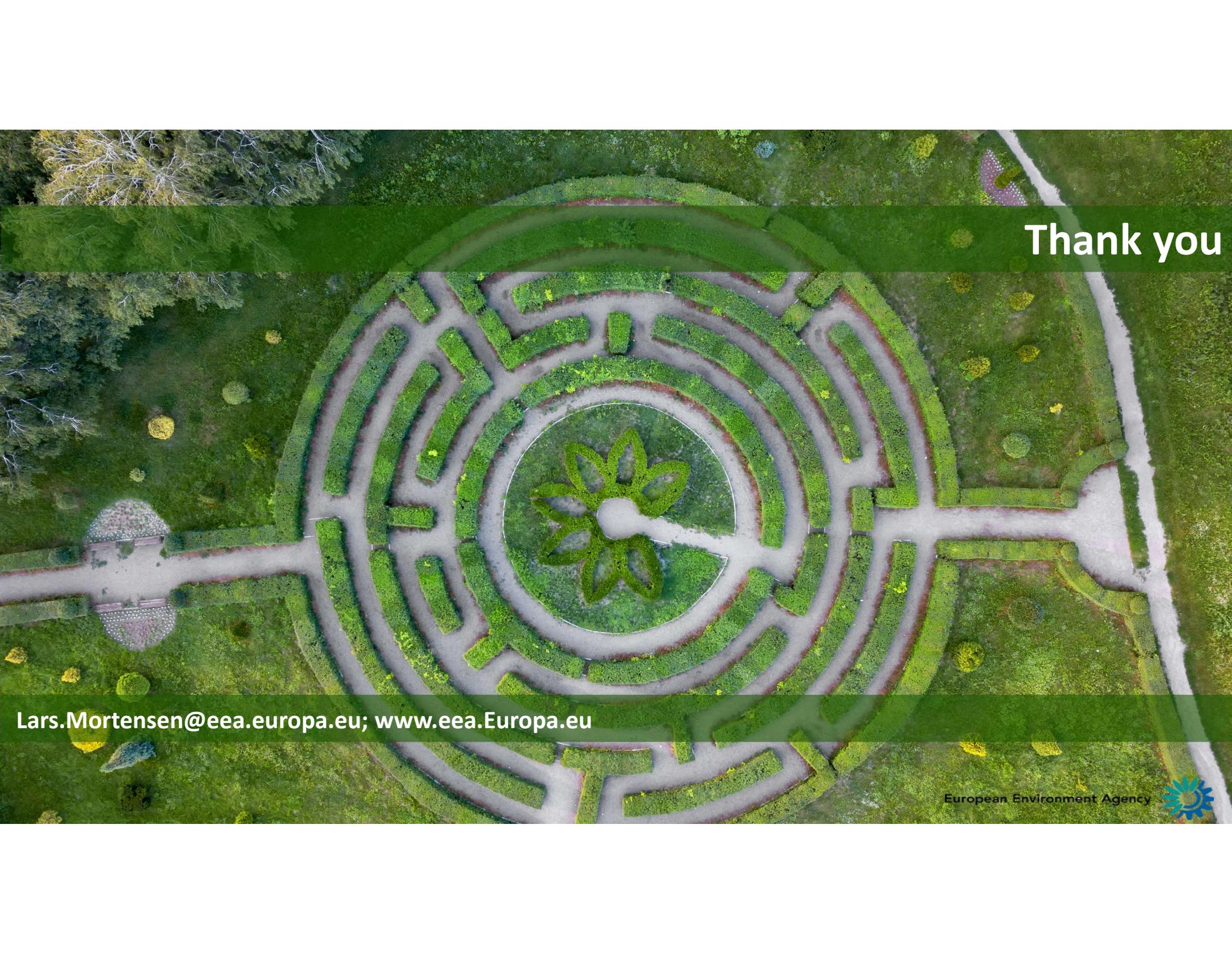


Source: EEA and ETC/WMGE

"Menu" for a circular economy for textiles



Source: EEA and ETC/WMGE



Thank you

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