TELOS

Value-Chain and Hidden Landscapes

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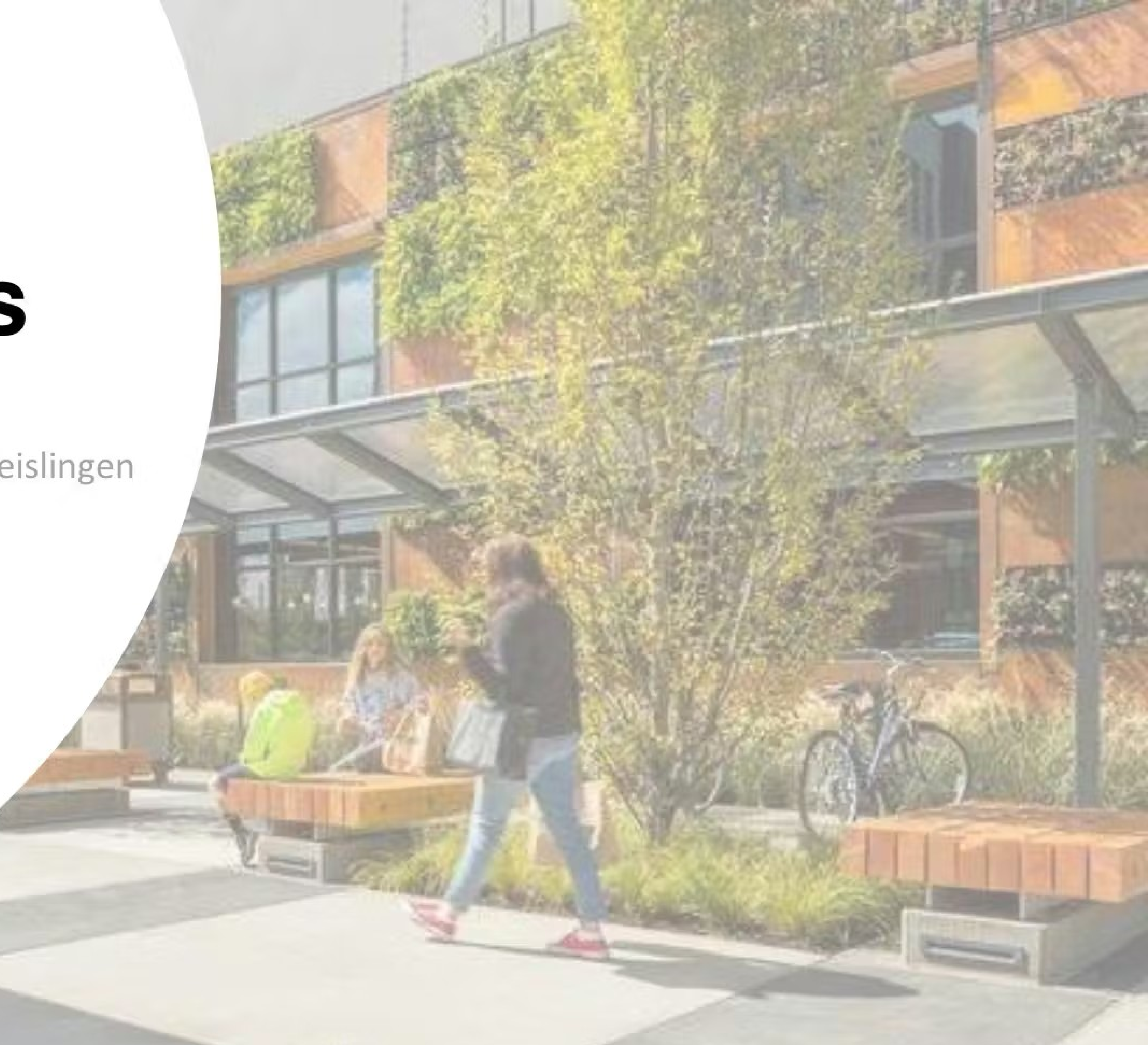

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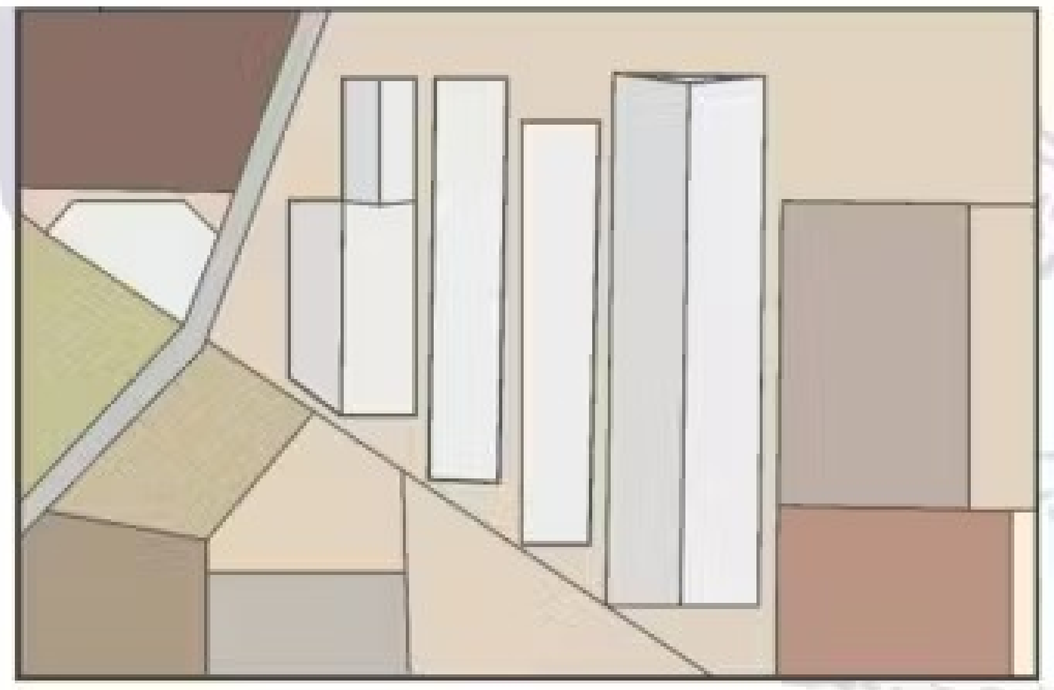
Which kinds of industries are involved in the value chain?

- **primary**, with the production of natural fibers in the agricultural process;



- **secondary**, related to the production of yarn and fabric, as well as textile production;

- **tertiary**, including garment design, marketing, sales and distribution, and increasingly also garment maintenance and product recycling;

- **quaternary**, such as research and development of new fibers or IT technologies for garment logistics

terms and definitions

Industry is a group of productive enterprises or organizations that produce or supply goods, services, or sources of income (Encyclopaedia Britannica, https://www.britannica.com/technology/industry, Oct 21, 2022)

Value chain is the series of stages involved in producing a product or service that is sold to consumers, with each stage adding to the value to the product or service
(Cambridge Dictionary (https://dictionary.cambridge.org/dictionary/english/value-chain, 2023)

Added value is an increase in the value of a resource, product, or service as the result of a particular process.
(Cambridge Dictionary (https://dictionary.cambridge.org/dictionary/english/added-value, 2023)

UNEP, 2020

Which values can be created in a value chain?

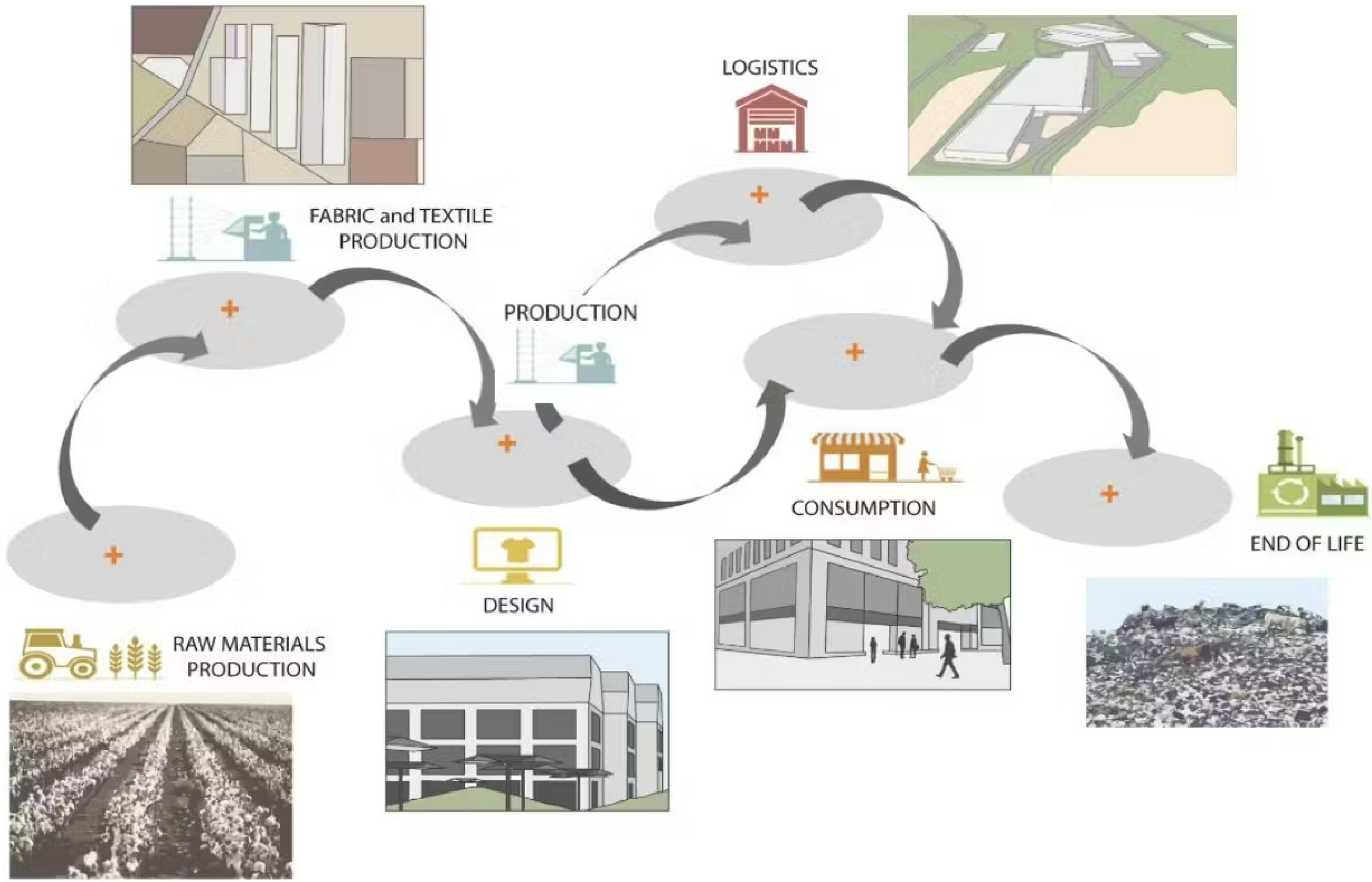
benifits by using product
quality value
processing of a material
ecological
social
cultural
market value
infrastructure
speed
economic value
sustainable
financial benefits
economic
economy
innovation
work places
monetary
energy
environmental value
positiv environmm impact
quality
transport
storable product
well-being

1 9

Which values can be created in a value chain?

Value Type	What It Means	Typical Examples
Economic value	Financial benefits	Cost savings, revenue growth
Functional value	Better product performance	Quality, reliability
Process value	More efficient processes	Logistics optimization
Customer value	Higher customer benefits	Fast delivery, support
Innovation value	New ideas & technologies	New business models
Strategic value	Market position	Partnerships, brand strength
Social/environmental value	Sustainability impact	Fair-trade, low emissions
Organizational/knowledge value	Better people & culture	Employee skills, knowledge

hidden landscapes (1/2)



The hidden landscape of global value-added chains is the phenomenon whereby local human activities cause changes to distant landscapes through cause-and-effect loops based on complex value chains.

(Krośnicka, 2025)

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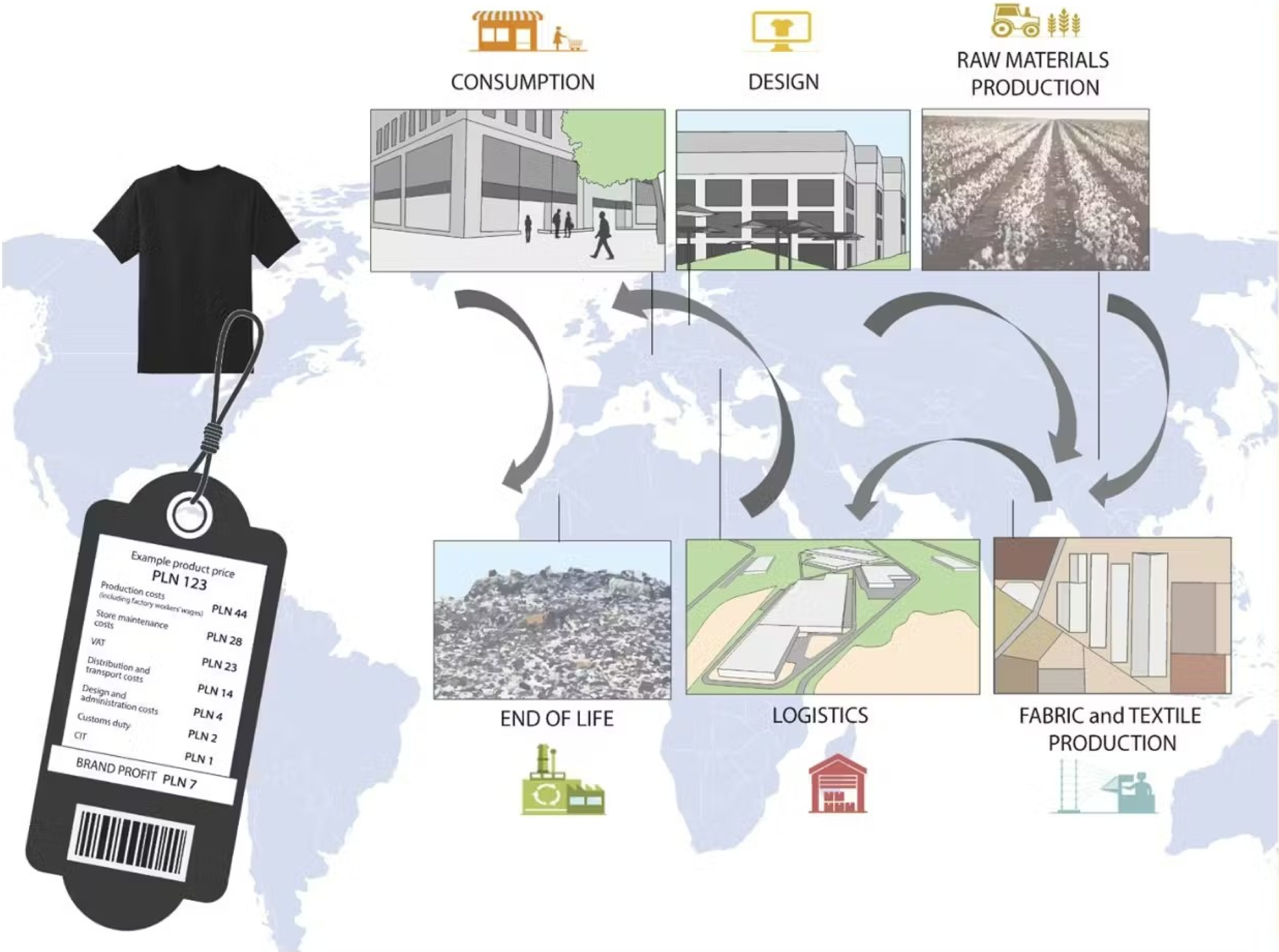
hidden landscapes (2/2)



These long-distance interrelationships (usually on a global scale) obscure the clarity of cause and effect in landscape transformation, making it difficult to fully understand the consequences of localised actions.

Therefore, when transforming a specific landscape, we must consider the potential ripple effects of our actions on distant, hidden landscapes connected by a web of functional linkages, using a holistic framework to manage resources and conserve landscapes globally.

How many kilometers does a T-Shirt (... its various materials) travel around the world?

How many kilometers does a T-shirt or its various materials travel in the value chain from the extraction of raw materials to purchase in a textile store?

1. The cotton may have been harvested in China, where the fluff is separated from the seeds and pressed into bales.
2. These bales are sent to textile mills in India where they go through a spinning process, they're twisted into yarn and then heat-treated, washed, bleached and dyed.
3. The cloth could then be sent to Bangladesh, where the fabric is cut and sewn into the t-shirt.

The garment may then be sent to a processing factory for creating prints or embroideries.

4. Sent to a processing factory Sri Lanka.
5. Transported to the UK for point of sale.

https://smallbizclub.com/run-and-grow/operations/products-supply-chain-hits-countries-realize/; retrieved 25.

What percentage of greenhouse gases are attributable to the textile value chain?

On average, how many liters of water are needed to produce 1 kg of textiles (roughly the weight of a pair of jeans)?

Qustion on the ecological and social impact of the textile industry [1]

8-10 % of global greenhouse gas emissions [2]

17 to 20 percent of the world's industrial wastewater in textile finishing

approx. 1/3 of the world's microplastic comes from synthetic clothing

approx. 4.5 million tn. clothes end up in landfills in Europe per year

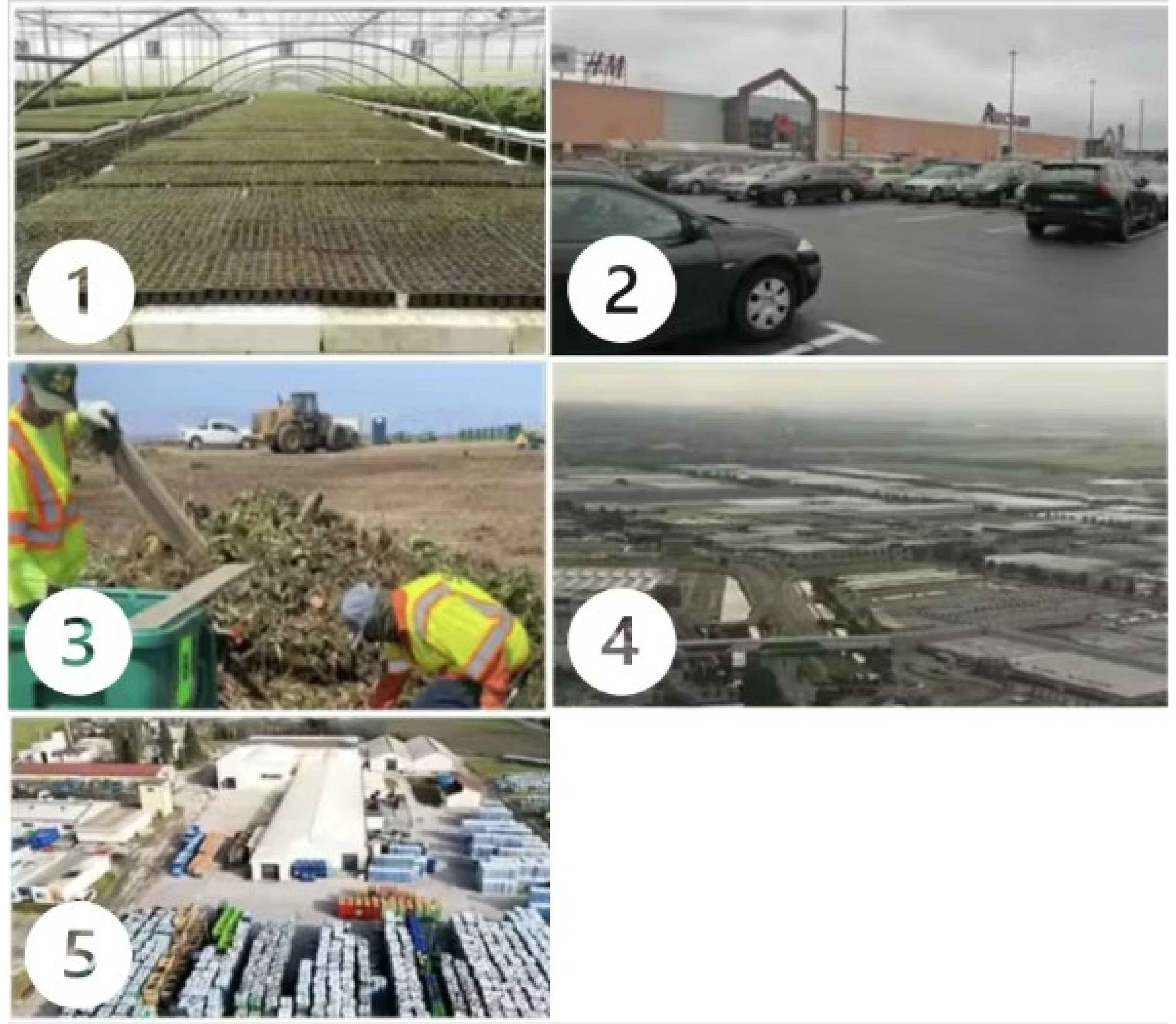
approx. 200 million predominantly women work in the textile industry, often under undignified conditions, without union protection and for wages that do not guarantee their livelihoods [3]

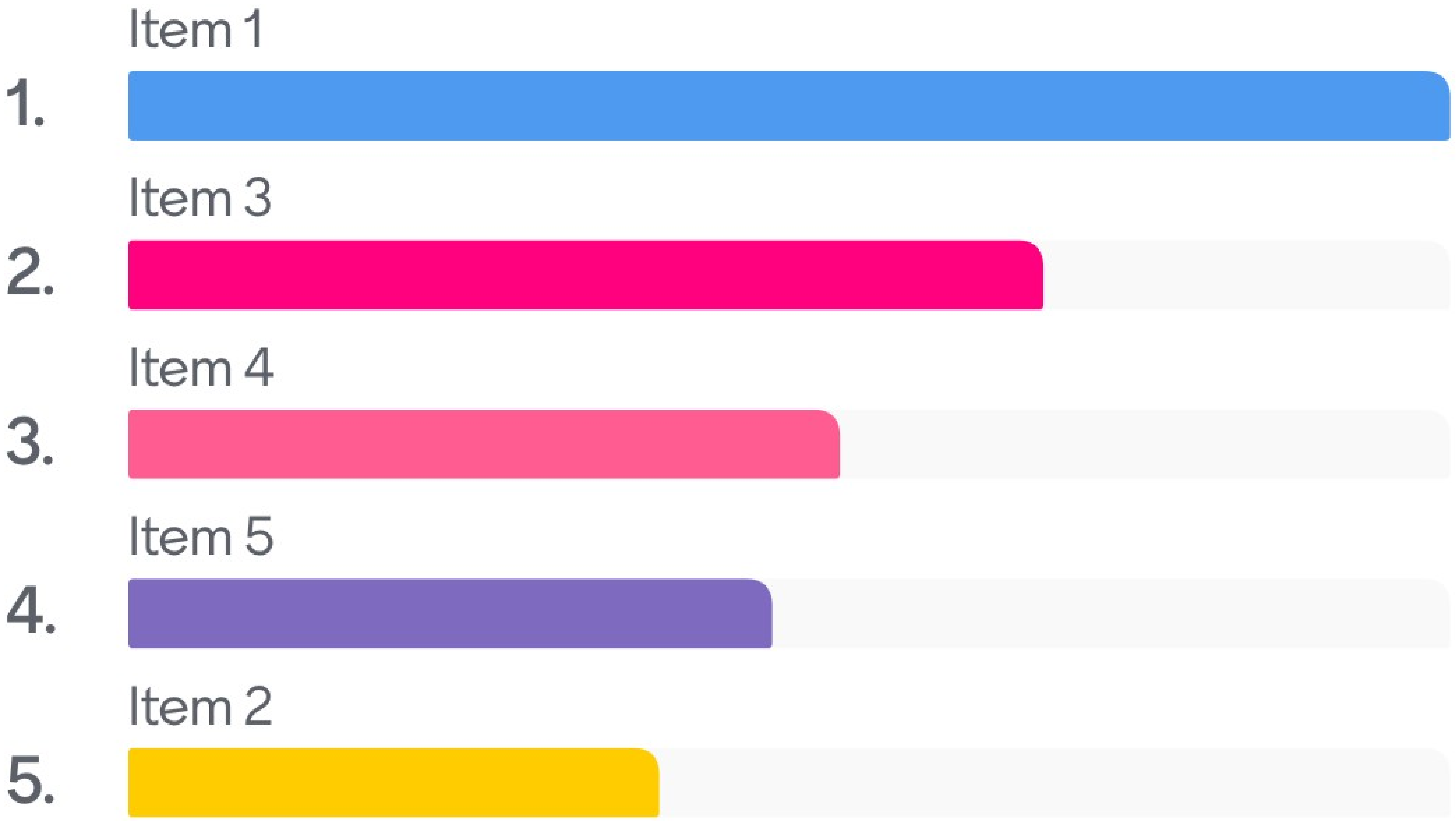
For every kilo of textiles that less is bought new, we save in the global value chain [4]

- 26 kg raw materials
- 600 l of water
- 27 sqm land consumption
- 18 kg CO_2 equivalents

1. https://doi.org/10.3389/fenvs.2022.973102
2. https://www.idos-research.de/uploads/media/DIE_Publikation_Textilwirtschaft_2019.pdf
3. https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographic
4. Quelle: https://www.eea.europa.eu/data-and-maps/figures/eu27-apparent-consumption-of-clothing/

Organise landscapes on the picture in the right order according to the steps in the value chain





Right order of landscapes in value chain

Landscape of intensive agricultural production

1

Landscape of production

2

https://investmap.pl/herbapol-lublin-rozbudowal-zaklad-produkcji-dzemow-w-lubawie-zdjecia.a308683

Landscape of transport and logistics

3

Retail landscape - shopping mole

4

Landscape of waste - green waste dumps

5

https://www.nbcsandiego.com/news/local/san-diego-hires-homeless-to-pick-trash-at-the-dumps-green-waste-facility/3893044/

Imagine: What type of landscape has existed here before the storage was buil?

Type of landscape existed presumably in this area before

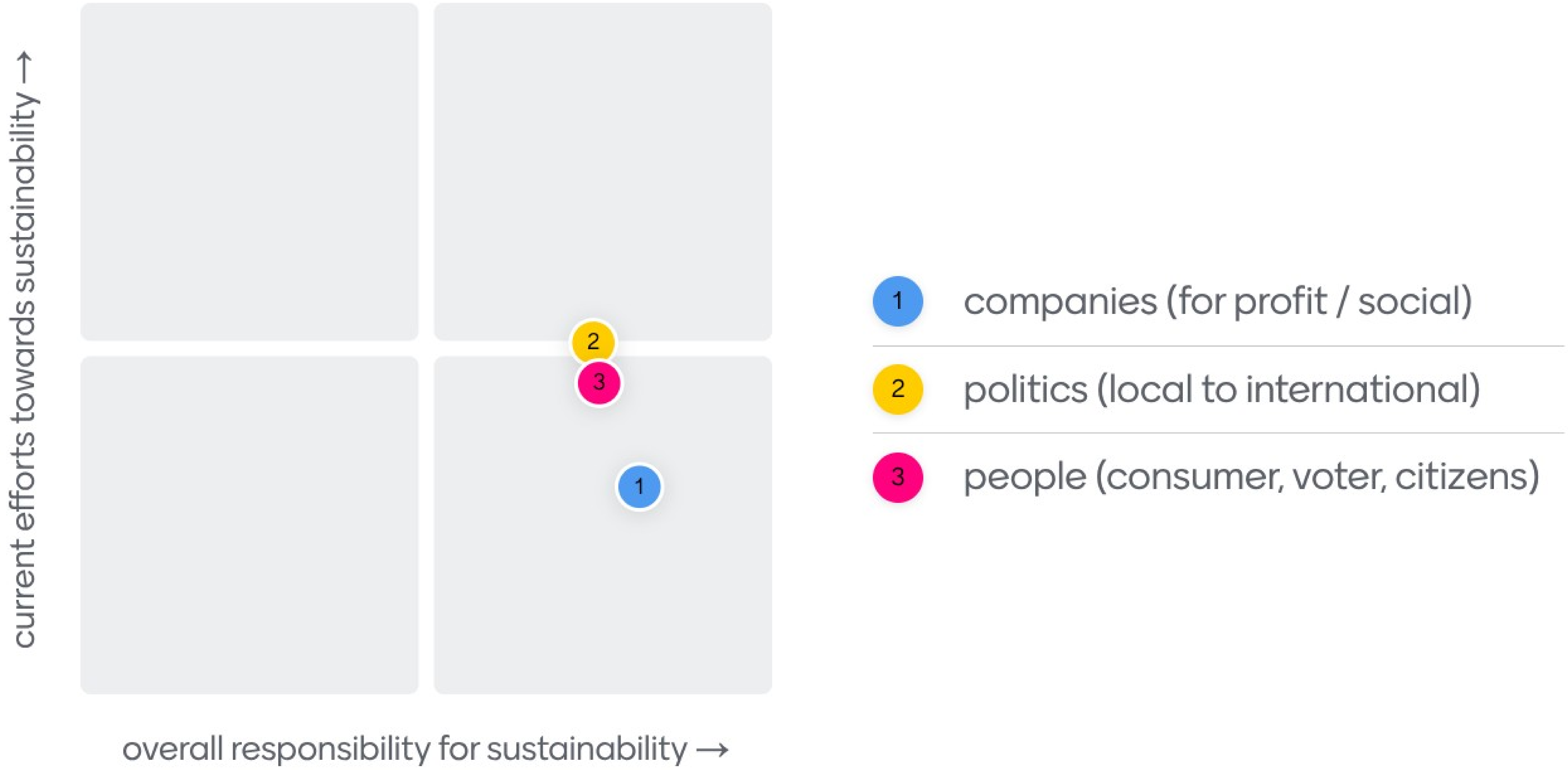
https://investmap.pl/herbapol-lublin-rozbudowal-zaklad-produkcji-dzemow-w-lubawie-zdjecia.a308683

Type of lanscape existed presumably in this area before

System Change

deciders

Position the three actors in the diagram: overall responsibility for sustainability / current efforts toward sustainability.



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What is meant by the attitude behavioural gap?

Sustainability awareness
Knowledge about and insight into she consequences of of individual purchasing and behaviour as well as the willingness to change behaviour.

?

Consumer behaviour
Targeted preference for those behaviours which, according to at least one criterion, are superior to similar behaviours.

attitude - behavioural gap
A high correlation between awareness of social and ecological problems and correspondingly adapted decisions and behaviour is not to be expected due to other influencing variables.

exemplary: Martinez, 2018 & Wintschnig, 2021.

What PREVENTS consumers from behaving sustainably (such as: buying more sustainable products), even if they claim to be sustainability-conscious?

accessibility
wrong information sellers
health conditions
higher costs of sustainab
costs and ease are it
limited availability
more accepted by group
convenience
congitive dissonance
perceived poor value
lack of impact
cost
laziness
easier to get
peer pressure
lack of knowledge
costs
awareness
comfort
income constraints
more expensive
consumerist culture
forgot the hidden costs
price
financial constraints
overconsuming
no specs on my apples

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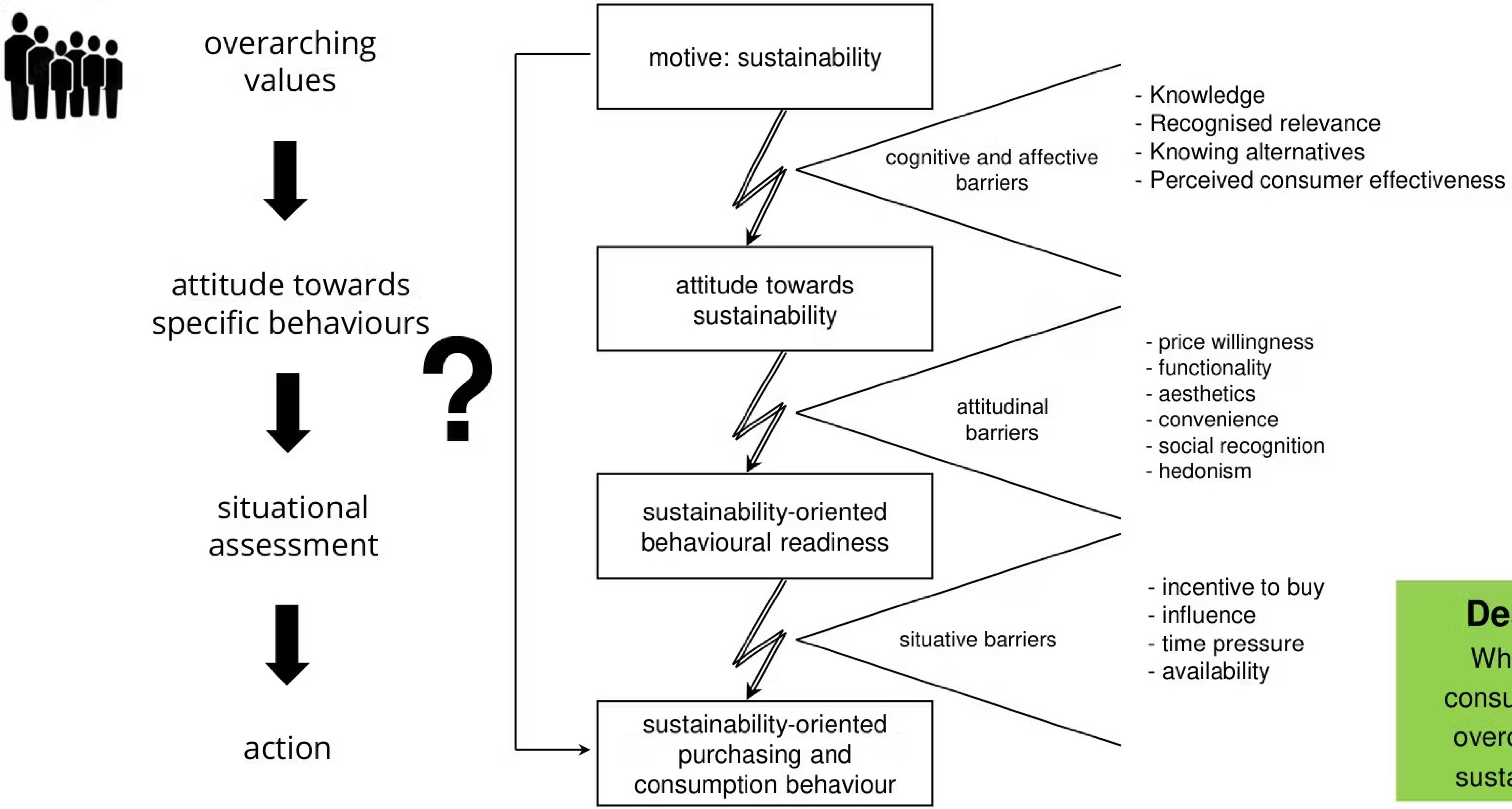
What makes it so hard for consumers to live more sustainable?



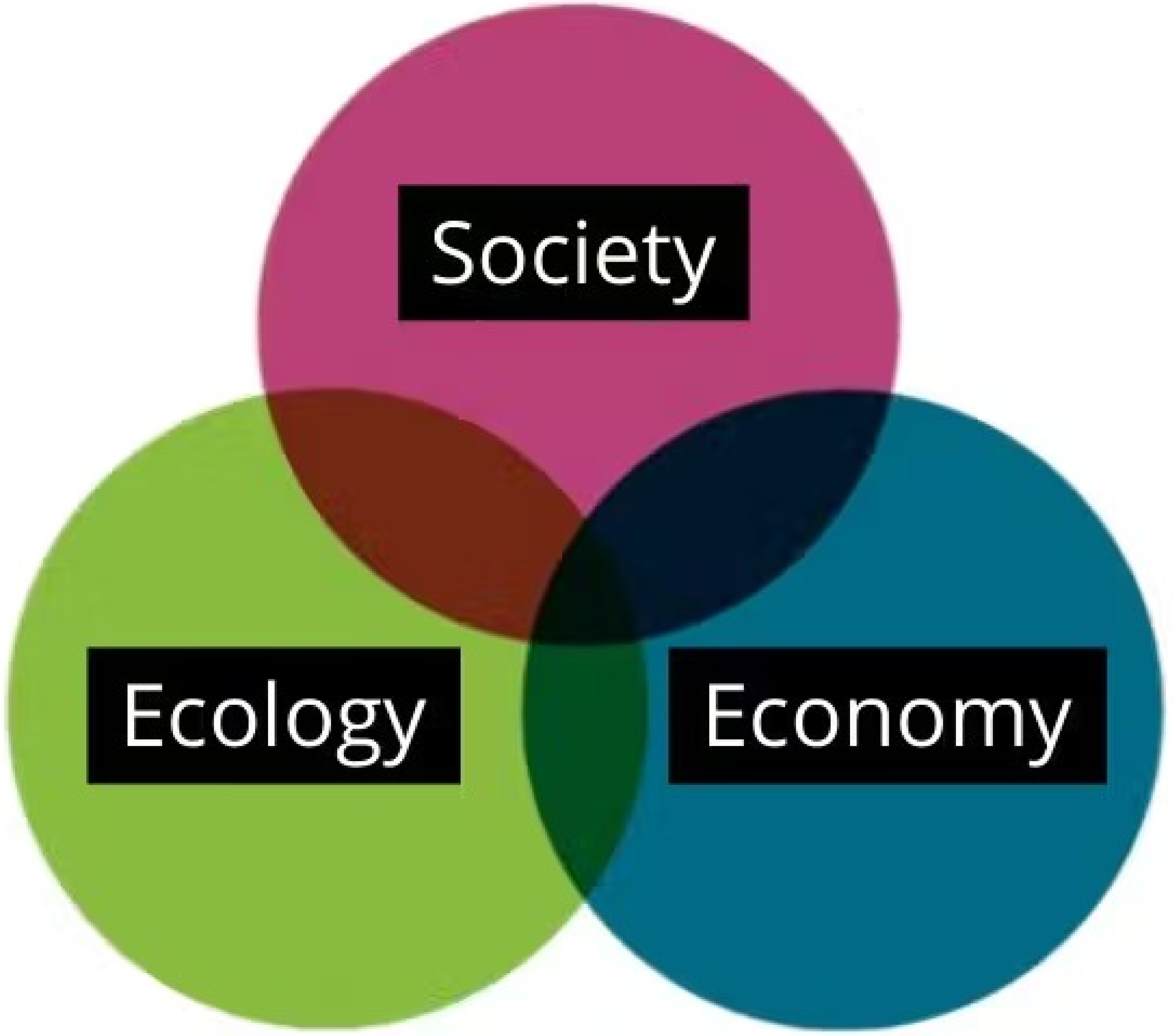
Design Challenge

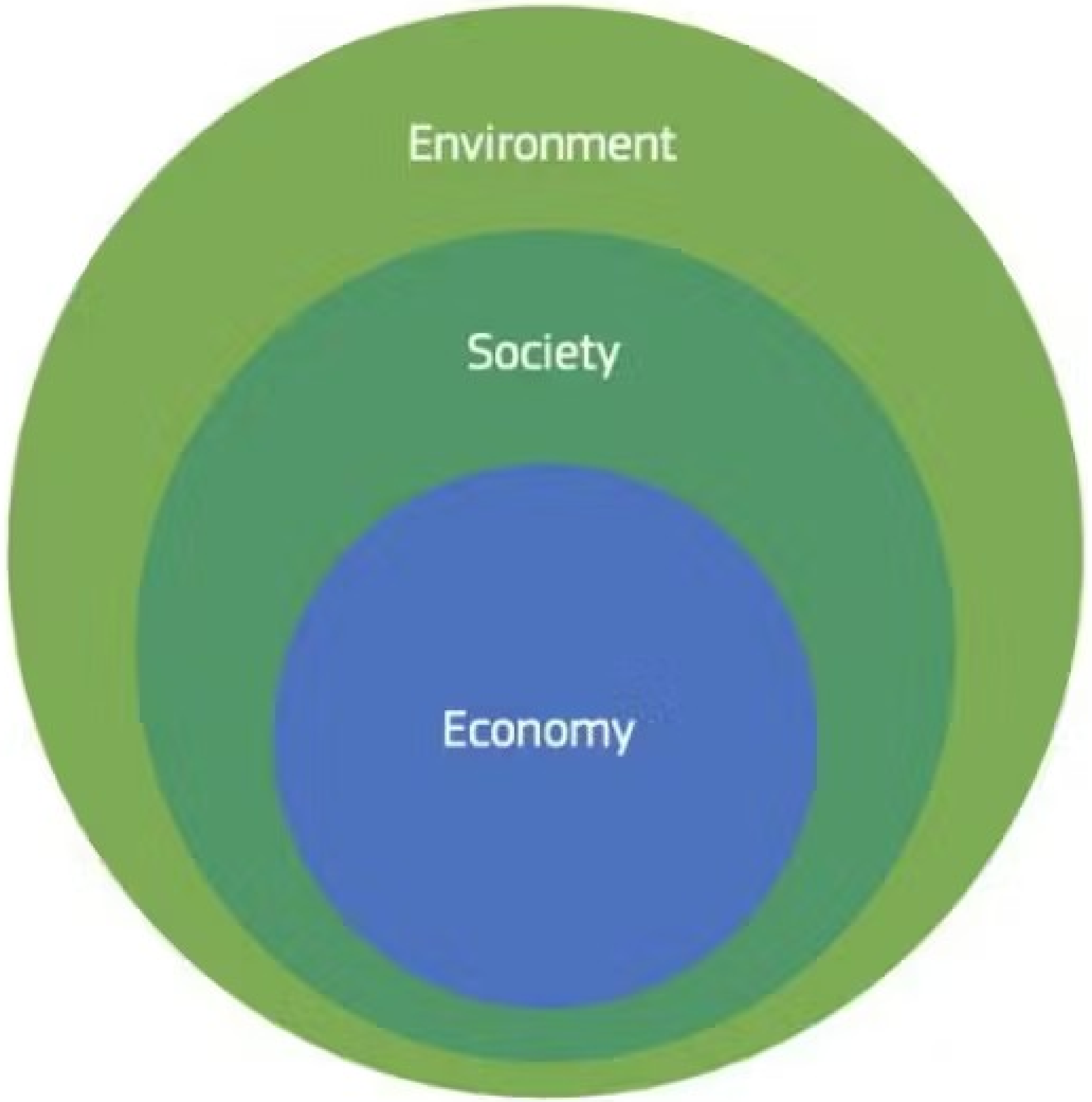
What can we do to help consumers be better able to overcome barriers to more sustainable consumption?

Based on and further developed:Funck, 1996

System Change – deciders (companies)

In which world do we live?





„My shareholders expect the highest possible return on investment. I cannot prioritise social and environmental issues.“

„Natural resources are limited. Growth and profit can only take place within the natural limits of the earth.“

Existing Economic systems

	Central administration economy	Socialist market economy	Social market economy	Capitalist market economy
targets	fulfillment of central plans	income principle partial profit principle	profit driven with social interventions	profit principal
countries	Cuba (formerly: USSR, GDR)	China	Germany most western countries	USA (not 100% ...)
price mechanism	fixed by state	state controlled partly market prices	market price partly state intervention	market price (supply and demand)
means of production	state owned	partly private owned	mostly private owned	private

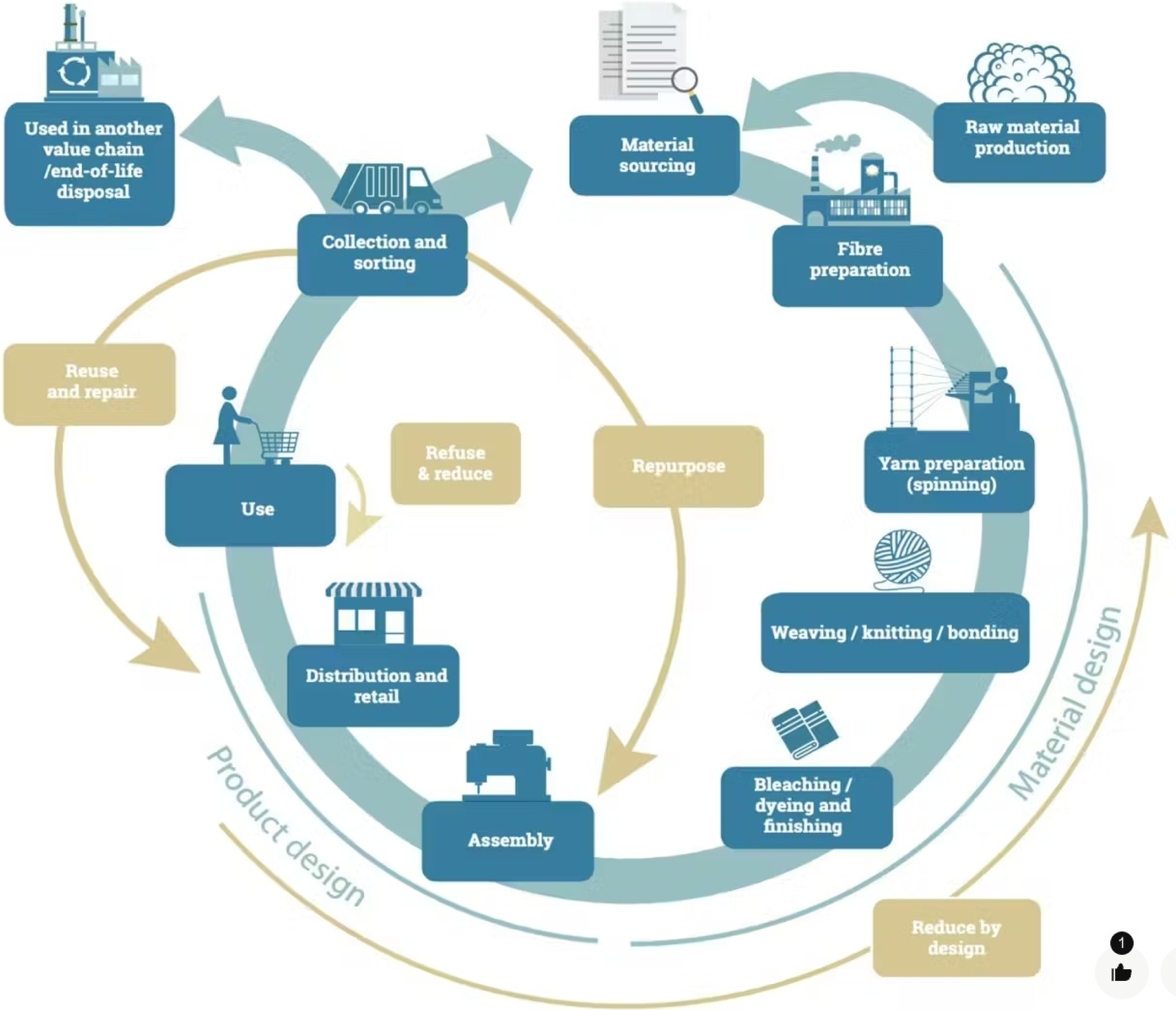
- Most of the world's countries are on a continuum between social & capitalist market economy.
- There are hardly any countries that explicitly include ecological considerations in the design of their economic systems. This is most pronounced in Western/Northern Europe (Sweden, Norway, Denmark, the Netherlands, Germany, Austria). These countries are (in some cases have been) on a path toward an **eco-social market economy**.

What is the most effective strategy for designing sustainable value chains and avoiding negative impacts in “hidden landscapes”?

0	0	0	0	0
efficiency	consistency	sufficiency	all are relevant	don't know

Explanation and / or ranking of sustainability strategies

in accordance with Siebenhüner, B. (2001):
homo sustines, Marburg, S. 78.



design of an efficient, consistent and sufficient value chain

Results of the UNEP-Study 2023

Three central activities to achieve a more sustainable change in the textile value chain:

1. Changing consumption patterns
   improved practices, and
   Infrastructure investments.

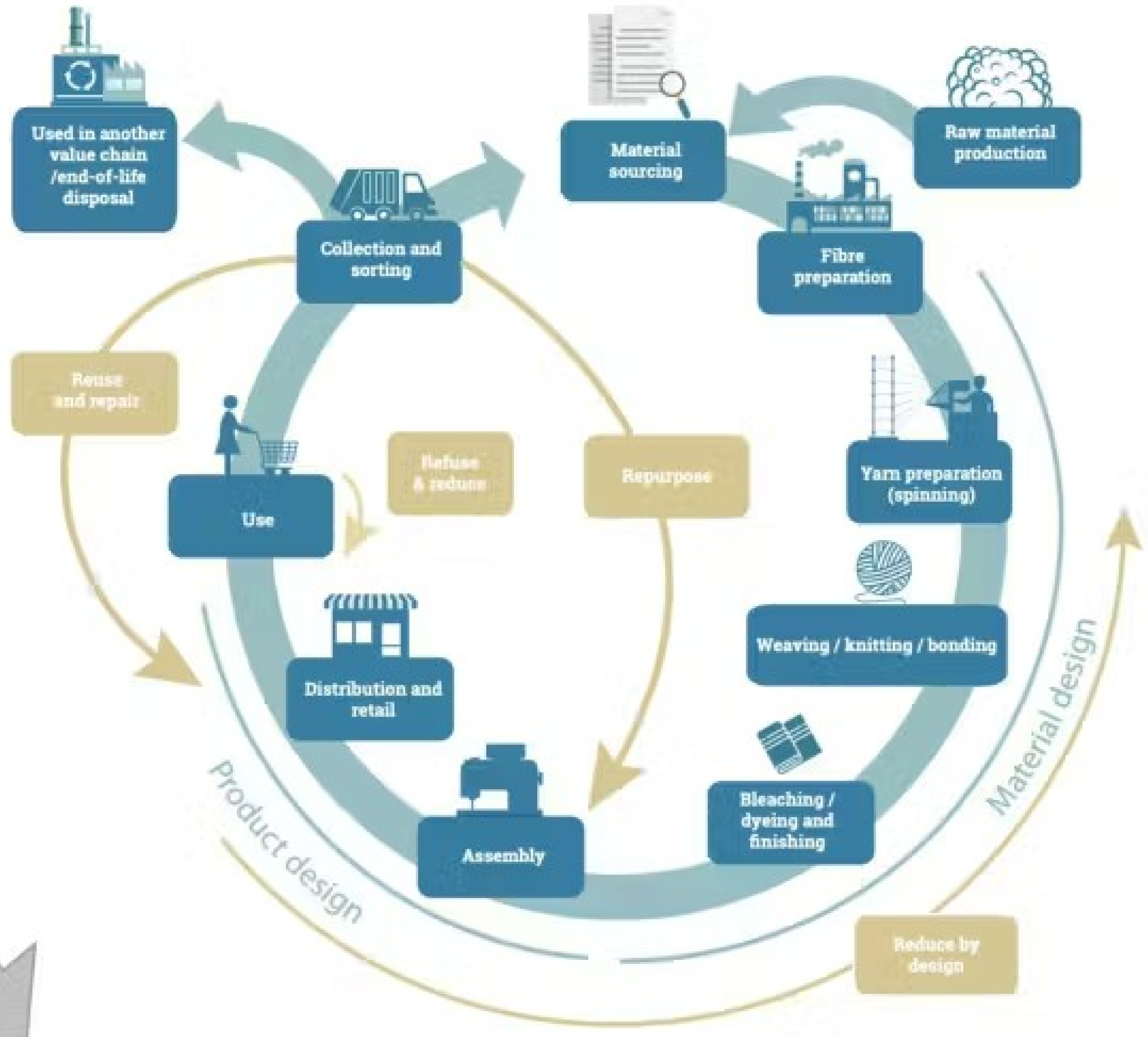
- Circular business models could enable the industry to avoid around 143 million tonnes of greenhouse gas emissions by 2030.
- Reducing overproduction by even 10 percent could reduce emissions by about 158 million tons by 2030, while eliminating all overproduction would result in significantly greater benefits.
- Doubling the average use of a garment could reduce greenhouse gas emissions by 44 percent.
- Improving energy efficiency by 15 per cent per unit of production in the processing phase of the value chain has a potential benefit of 64 million tonnes of CO2e by 2030.
- The transition to a cross-sectoral circular economy could create a total of 6 million new jobs by 2030, compared to a business-as-usual scenario.

KPIs – (textile) value chain (1/2)

KPI textile value chain	efficiency (given system)	consistiency (new system)	sufficiency (changed attitudes)
economic	less energy for 1kg textiles (cost-reduction in €)	tax revenues from the textile value chain (to be ?)	% of sales with textiles from local production (to be increased)
social	higher productivity (volume of production per employee) lead to higher wages (in €); secondary condition: better social systems (% of employees with reggular contracts and social inscurance) in developing countries	% of employees in the textile value chain with a wage that covers the cost of living in the respective country (to be increased)	number of jobs with textiles from local production (to be increased)
ecological	enlarging the biological active surface (in sqm) for the same production quantity (kg textiles)	% of repaired / reused / recycled clothes (to be increased)	new clothing purchased per year in kg/person (to be reduced)

Retail landscapes transformation scenario

What will happen with shopping malls when…?



we will enhance the process of textile reuse, repair, recycle

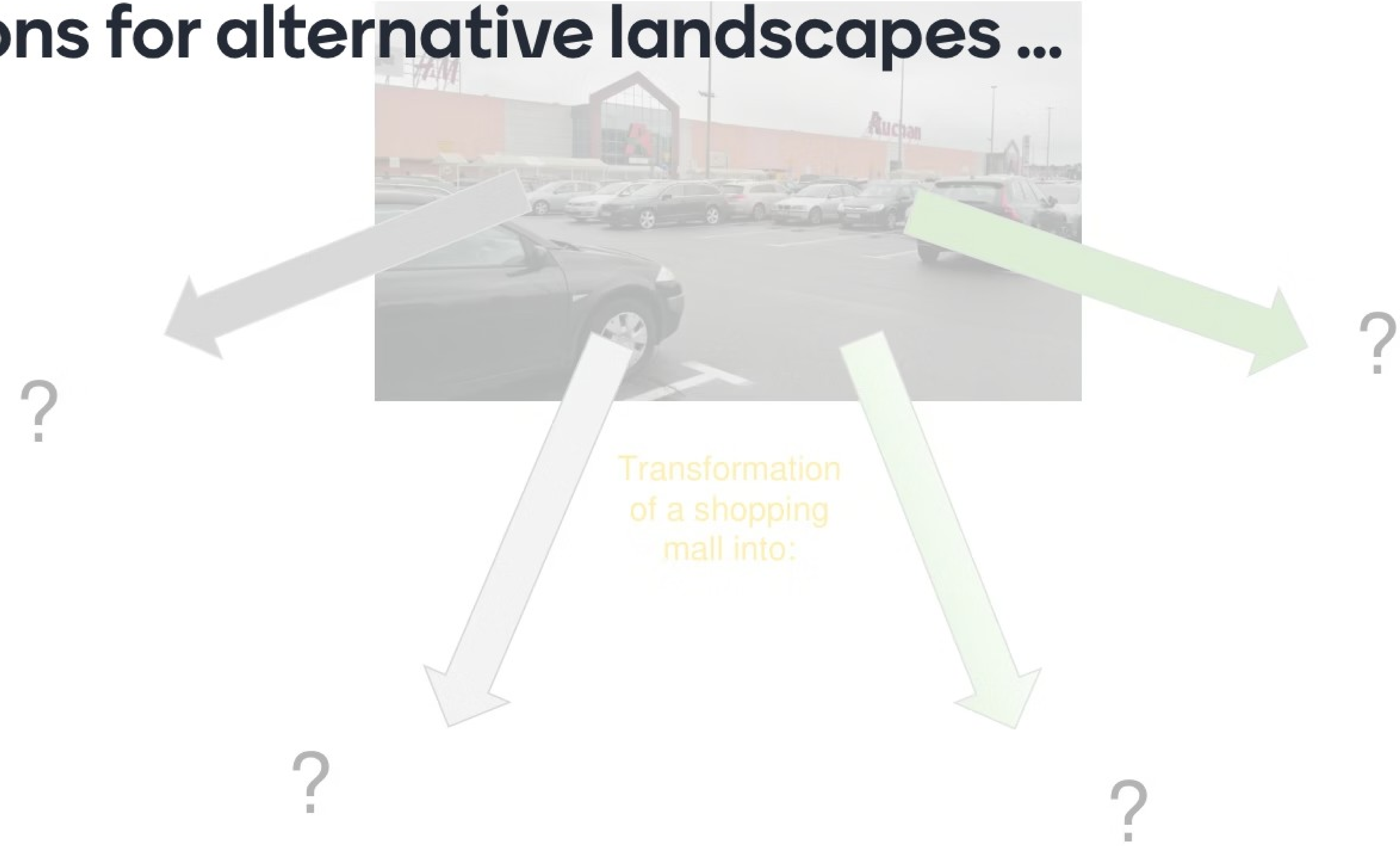
the sufficiency will grow, the demand will decrease and we will need less clothes

we will base more on local products and the logistics flow will decrease

- large shopping mall will not be anymore the best economic model of sale
- the scale of textile and clothes' processing and retail will decrease and some of these functions may come back to a city
- the spatial dispersion of these functions will increase
- the individual time needed to manage "our wardrobe" will increase

Retail landscapes: large shopping malls transformation scenario

Suggestions for alternative landscapes ...



Retail landscapes: large shopping malls transformation scenario

Transformation of a shopping mall into:

housing estate

natural biotop

agricultural land
(green houses)

agricultural land