

Headline

WHERE THE SHOE PINCHES

**Resource consumption and other environmentally relevant aspects of our everyday companions:
A short paper on the current state of knowledge**

EXECUTIVE SUMMARY

18.08.2022

This executive summary was prepared as part of the roadmap "The Future of Shoe Repair" for the AnSchu(h)b project. AnSchu(h)b coordinates and develops the active promotion of sustainable consumption of shoes.

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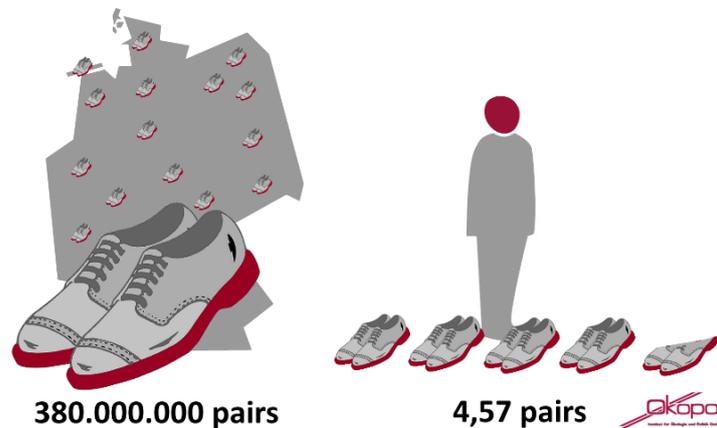
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Executive Summary

Large quantities of shoes are consumed around the world and in Germany every year. Germany is one of the top 10 consumers of shoes, with a share of around 2% of global shoe consumption.¹ In 2020 around 380 million pairs of shoes were available for sale in Germany, which corresponds to a market supply of around 4.57 pairs of shoes per person. In the years before the covid-19 pandemic, this amount was around 5.5 pairs of shoes per person.² However, concrete data on how many shoes were actually bought in Germany per person and year is not known. A recovery in the shoe market and a further increase in sales volumes is expected for 2021³ - the actual figures for 2021 are not yet available to the authors of this short study.

Figure 1: Total number of shoes available for sale in Germany and per person in 2020



Source: Ökopol, own illustration based HDS/L (2021).

The high and still increasing levels of production, consumption and waste of shoes lead to a corresponding consumption of natural resources, toxic emissions into the air, water, and soil, and have a negative impact on the climate. Shoes are made of up to 45 different materials⁴ - mostly leather, textiles, and synthetic materials (such as plastics).⁵ They consist of up to several hundred components, which are still mostly glued and sewn together by hand. Assuming 500 g per pair of shoes, the required amount of materials for the 380 million pairs of shoes available for sale in Germany in 2020 was estimated at 190,000 tons:

¹ World Footwear (2020)

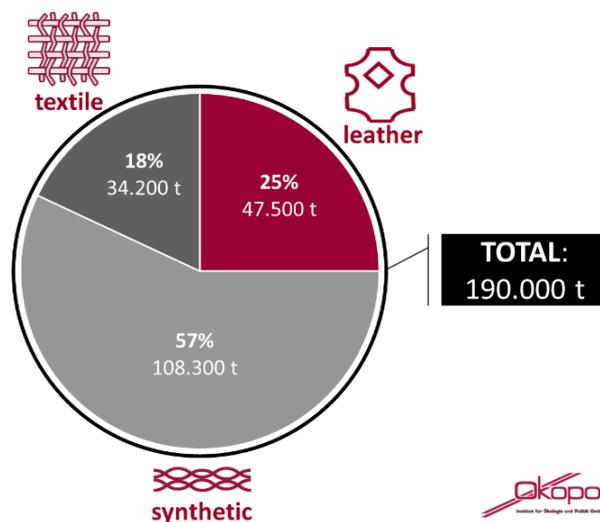
² HDS/L (2021)

³ World Footwear (2021)

⁴ Cheah et al. (2013)

⁵ Pacheco-Blanco et al. (2015)

Figure 2: Demand of materials for shoes available for sale in Germany in 2020



Source: Ökopol, own illustration based on Quantis (2018).

To produce these materials, even larger amounts of resources are required. However, these amounts are largely invisible to consumers. For example, 47,500 tons of leather were used to cover the leather requirements for shoe on sale in Germany in 2020 (calculated without material waste), which corresponds to around 13.5 million cows.⁶

The greatest environmental impact of shoes is caused by the manufacture of the material, the manufacture of the shoes as well as their disposal. Other, albeit comparatively smaller negative environmental impacts are caused in the context of the distribution and wear of shoes.⁷ Globally, the impact of shoes on the climate is estimated at 700 million tons of CO₂-eq. per year, which is approximately 1.4 % of total global greenhouse gas emissions.⁸ This roughly corresponds to the worldwide CO₂ emissions caused by air traffic and air travel.⁹ In addition to the impact on the climate, shoe consumption also has a negative impact on the ozone layer. Acidification, eutrophication, and resource depletion also play a central role in the negative environmental impact of shoes.¹⁰

Shoes that are sorted out and disposed of in Germany are rarely reused or recycled and usually end up being incinerated.¹¹ Currently, only an estimated 5% of discarded shoes are recycled, as recycling is often quite difficult and therefore not always economically possible due to the variety of materials used in shoes. It is unclear how many discarded shoes are actually resold and reused. However, they are rarely reused in Germany, but often resold in Eastern Europe or end up in developing countries.¹² If they subsequently become waste there, they are often subject to a less regulated legal framework than waste in Germany.

⁶ Berechnungen basierend auf ISO (2017) und Pacheco-Blanco et al. (2015).

⁷ JRC (2013a)

⁸ Quantis (2018)

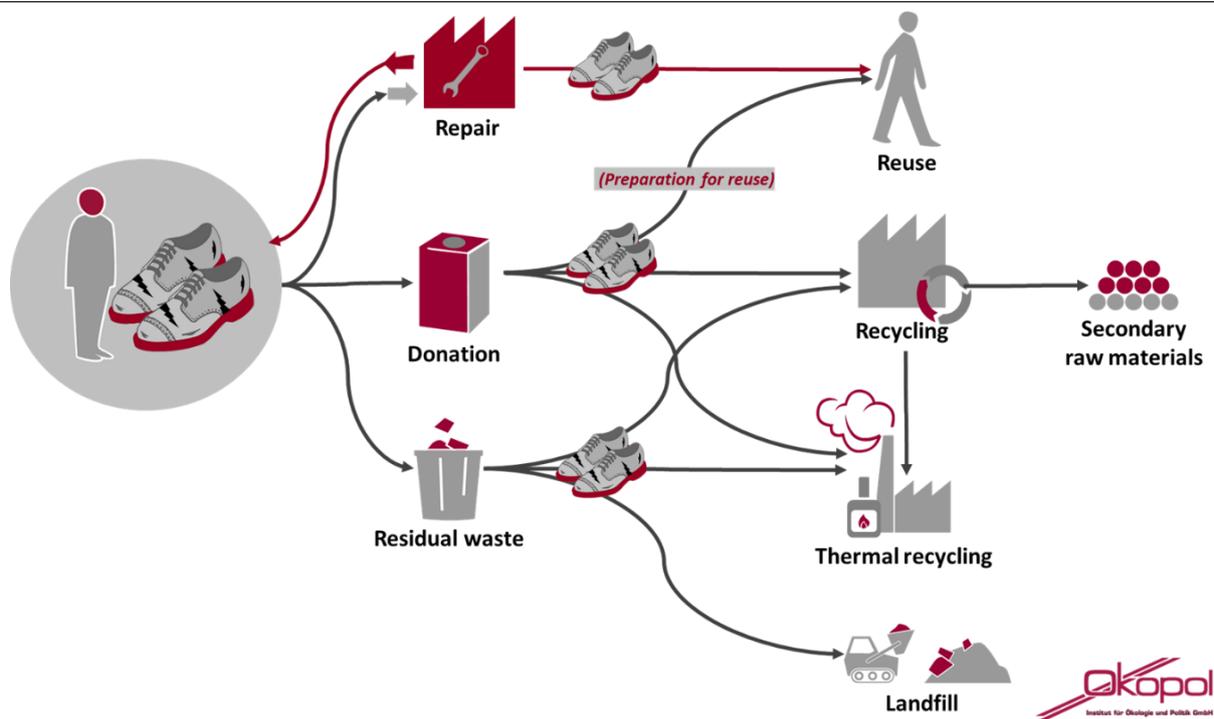
⁹ Ritchie & Roser (2020)

¹⁰ JRC (2013a)

¹¹ UBA (2019)

¹² Pacheco-Blanco et al. (2015)

Figure 3: Current disposal and recycling paths for shoes in Germany



Source: Ökopoll, own illustration.

If shoes are used or worn for a shorter period of time than they could be worn with proper care and repair, valuable resources, that are used in their manufacturing, are wasted. In addition, the negative impacts on the climate and the environment can be significantly reduced if fewer shoes are produced and the individual pairs of shoes are worn longer. Through an established practice of reuse and repair, between 30 % and 50 % of the CO₂-emissions could be saved, compared to the current consumption practice.¹³

Full report (German): <http://www.repairyourpair.com/>

¹³ Ellen MacArthur Foundation (2021)

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