

A Zero Waste Vision for Fashion

Chapter 1: All We Need Is Less

Towards clothes production and consumption within planetary boundaries

Executive Summary
September 2023
zerowasteurope.eu



Executive Summary

'The environmental impact of the consumption of an average EU citizen is outside the safe operating space for humanity,'¹ concludes the European Commission's Joint Research Centre in its 2023 report on EU consumption. Lowering this impact is of paramount importance for the EU and national governments in the coming years to avert the triple planetary crisis (climate, pollution, and biodiversity loss). The shift from a linear to a circular economy has been promoted as the solution to the overconsumption of natural resources for years. This paper shows the shortcomings of this approach and makes a case for a drastic reduction of material use and the implementation of sufficiency principles. The fast fashion textiles sector is singled out as one of the most impactful waste streams² to serve as an example for the transition. Evidence shows that even with the foreseen efficiency measures in the industry, a 40% emissions gap persists until 2030.³ The sector's exceptional growth has been facilitated by the increasing use of cheap, synthetic fibres from fossil resources and the relocation of production to jurisdictions with poor labour and environmental standards. Reversing this trend will require active government intervention at different levels.

The paper explores three key areas of intervention that governments and decision-makers should consider in their effort to bring the textile sector back in tune with planetary boundaries. A clever combination of the proposed measures will likely be required to achieve the desired outcome:

- Setting *legal boundaries* at the EU level. We identified three key levers: firstly, mandating a ban on the destruction of unsold goods by large enterprises. While the European Parliament recently voted in favour of the measure under the eco-design framework, it must now be transposed swiftly and across the board. Secondly, since waste prevention measures in the EU have not yet yielded any tangible results, we propose concrete targets for textile waste prevention to drive the policy process and decisive measures in the Member States. The target could be set at one-third reduction in textile waste by 2040 in comparison to 2020, based on calculations of the sustainable use of PET and polyester. And, thirdly, introducing a target for resource use. While targets are commonplace in other areas, a target for the use of primary resources is overdue. We propose transforming the EU's waste legislation into a 'Resource Framework Directive' in line with the 1.5-degree target, taking inspiration from the EU Member States that have already ventured ahead to reduce their material footprint.
- Using *financial incentives*. Firstly, by implementing Extended Producer Responsibility (EPR) schemes that go beyond what has been proposed under the WFD revision to hold producers of fast fashion

¹ "Consumption Footprint and Domestic Footprint: Assessing the environmental impacts of EU consumption and production," JRC, 2023, eplca.jrc.ec.europa.eu/uploads/JRC128571_S4P_ConsumptionFootprint.pdf, p.5.

² "EU strategy for sustainable and circular textiles," European Commission, 2022, environment.ec.europa.eu/publications/textiles-strategy_en.

³ "A Roadmap to Net-zero Emissions for the Apparel Sector," World Resources Institute, 2022, <https://www.wri.org/technical-perspectives/roadmap-net-zero-emissions-apparel-sector>.

accountable for the waste their products generate. To this end, the EU's EPR scheme has to be revised to go beyond cost coverage and incorporate tools for prevention, repair, and reuse solutions. EPR should also be used as a tax on the number of items placed on the market, rewarding businesses embracing circular activities. Secondly, environmental taxes, already applied to the energy and transport sectors, could be extended to virgin materials, especially virgin plastics, given the dominant role of synthetic fibres in fast fashion. Taxes must, however, be complemented by social programmes like a Carbon Fee and Dividend scheme. Thirdly, while the current financial system is unfit for the transition towards sufficiency due to its profit-seeking nature, the EU's taxonomy process should be the first step to channelling investments towards zero waste businesses. This mechanism has to be improved to prevent green-washing and updated with a taxonomy that not only rewards but also penalises environmentally detrimental investments.

- Engendering a *sufficiency culture*. The first step towards establishing a sufficiency lifestyle is to disincentivise overconsumption. The fashion industry's dominant business model relies on persuading citizens to continuously purchase new fashion trends. Yet, quantifying clothing sufficiency and determining how much is 'enough' is an ongoing research endeavour. Public policy has a long legacy of attempting to change consumer behaviour through public awareness campaigns and school curricula. Even 'choice editing' is established for other products like tobacco or cars. Consumer law could also play a role in protecting consumers from misleading advertisements, or even reining in advertisements altogether. Moreover, promoting repair and reuse is paramount, as reusing clothes can significantly reduce the need for new garments and simultaneously create new jobs. However, it is crucial to ensure that the reuse of clothing contributes to an overall decrease in the consumption of new garments, and government action has to render reuse and repair profitable. Lastly, the overproduction of fashion brands is a significant issue, with 30% of clothes not being sold to consumers.⁴ To address this, zero waste business models must replace current ones. We propose some essential criteria for those businesses that deserve public support and underline the importance of alternative models of exchange.

This paper is the first chapter of a two-part series on fashion and textiles by Zero Waste Europe. We are exploring textiles and fashion across the entire value chain, starting with the need to reduce overall production and consumption. The following chapter on circularity will outline how the clothes we produce should be designed, used, reused, recycled and treated at the end of life.

[Please register here for updates on our future work](#)

⁴ "Textiles and the environment," European Parliament, 2022, [europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI\(2022\)729405_EN.pdf](https://europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI(2022)729405_EN.pdf).

Why do we need sufficiency?

The triple planetary crisis (climate, nature, and pollution)⁵ is fueled by the continued high demand for natural resources. The amount of resources used to satisfy the needs and wants of Europeans are measured with the Material Footprint metric, summing up the materials needed to produce the goods demanded by European Union's (EU) citizens. The EU's Material Footprint is at unsustainable levels, as presented below.

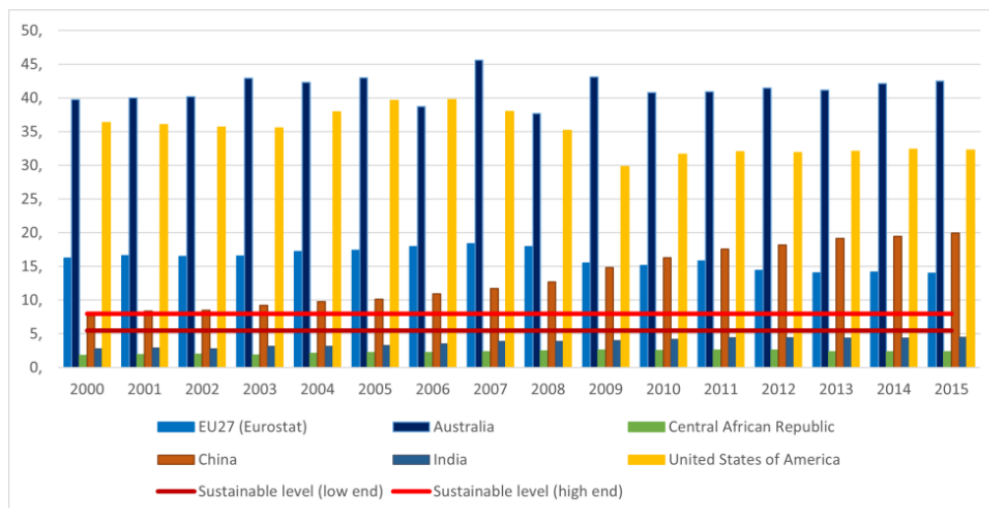


Figure 1: EU27 Eurostat Material Footprint estimate in comparison with selected other countries and indication of sustainable boundaries, [IEEP \(2022\)](#)

The Commission's own Joint Research Centre (JRC) recently concluded that: *'that the environmental impact of the consumption of an average EU citizen is outside the safe operating space for humanity for several impacts, namely climate change, particulate matter, freshwater ecotoxicity, and resource use (fossil fuels, minerals and metals).'*⁶

Moreover, a recent study by Eunomia and Zero Waste Europe (ZWE) found that the global projections for overall raw material extraction and processing are unlikely to be sufficient to achieve net-zero emissions by 2050 and to limit global warming to 1.5 degrees Celsius. The CO2 budget is likely to be exceeded by a factor of five, with the result that global warming would increase by 2.5 degrees.⁷ Evidence shows that although the EU's resource productivity has increased by 35% since 2000, the average citizen still consumes almost 14 tonnes of materials each year, and many of the resources on which we depend come from outside the EU. Roughly half

⁵ "The triple planetary crisis: Forging a new relationship between people and the earth," UNEP, 2020, [unep.org/news-and-stories/speech/triple-planetary-crisis-forging-new-relationship-between-people-and-earth?gclid=Cj0KCQjwuZGnBhDIARIsACxbAVi5EIOFSkM3ki588NiApJ40EEToHW62tR-1KnhmMJ_p5NM5XzHWPFMaAuB7EALw_wcB](https://www.unep.org/news-and-stories/speech/triple-planetary-crisis-forging-new-relationship-between-people-and-earth?gclid=Cj0KCQjwuZGnBhDIARIsACxbAVi5EIOFSkM3ki588NiApJ40EEToHW62tR-1KnhmMJ_p5NM5XzHWPFMaAuB7EALw_wcB).

⁶ "Consumption Footprint and Domestic Footprint: Assessing the environmental impacts of EU consumption and production," JRC, 2023, eplca.jrc.ec.europa.eu/uploads/JRC128571_S4P_ConsumptionFootprint.pdf, p.5.

⁷ "Is net zero enough for the materials sector?," Zero Waste Europe and Eunomia, 2022, zerowasteurope.eu/library/is-net-zero-enough-for-the-materials-sector.

of all greenhouse gas emissions derive directly from consumption. Even if we only take four material categories (aluminium, concrete, iron & steel, and plastics) into account, the 1.5-degree target becomes unachievable.

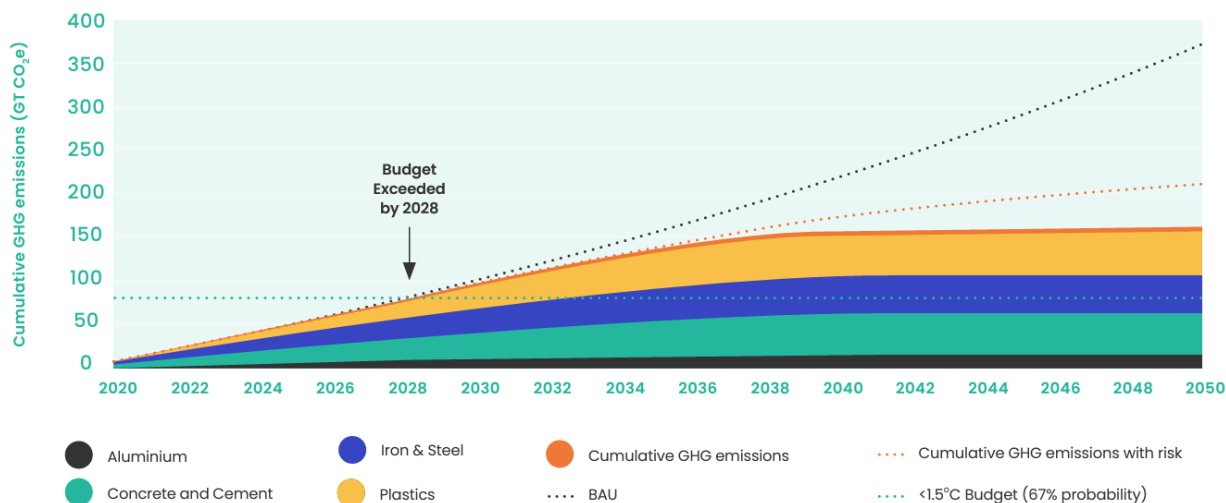


Figure 2: Cumulative GHG Emissions for Four Materials, [Eunomia \(2023\)](#)

The circular economy is being promoted as the way to increase material efficiency and reduce the impact of our consumption, as outlined in the EU's *Circular Economy Action Plan (CEAP)*.⁸ However, a circular economy is not enough, and the focus really must be put on consumption reduction, as members of the International Resource Panel underline.⁹ The latest crushing stocktake of the global circular economy confirms this; the 2023 Circular Gap report showed a decrease in global circularity from 9.1% in 2018 to 7.2% in 2023 due to the increased use of virgin material.¹⁰

At the centre of the dilemma sits the 'Jevons paradox', first described over 150 years ago, defining the link between efficiency and growth: efficiency gains enable more production and consumption, which in turn hike up the extraction of even more primary resources and the generation of wastes. Therefore, policy seeking to improve efficiency does not automatically benefit the environment¹¹ – a phenomenon also known as the 'rebound effect'.

⁸ European Commission. 2020. "A New Circular Economy Action Plan." Eur-Lex.europa.eu. March 11, 2020. eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN.

⁹ "A circular economy isn't enough – we also need to consume less," Anders Wijkman, Earth4All contributor and member of the International Resource Panel, and Janez Potochnik, Co-chair, International Resource Panel, Earth4All contributor, 2023, earth4all.life/views/a-circular-economy-isnt-enough-we-also-need-to-consume-less/.

¹⁰ "The circularity gap report," Circle Economy, 2023, circularity-gap.world/2023.

¹¹ "Resources for a better future: Jevons Paradox," Resilience, 2020, resilience.org/stories/2020-06-17/jevons-paradox/.

Absolute decoupling of economic growth and resource use seems to remain a pipe dream. While absolute decoupling can be observed domestically, meaning the domestic environmental impact decreased while GDP grew between 2010 and 2018, when taking into account global trade, only a relative decoupling is possible.¹²

While, in principle, EU policy has an established hierarchy on how to treat our resources, this is not effectively applied in practice. The EU Waste Hierarchy clearly prioritises the prevention of waste, an intervention on the product level, over circular activities like reuse and recycling, yet legislation often falls short of introducing prevention measures.¹³

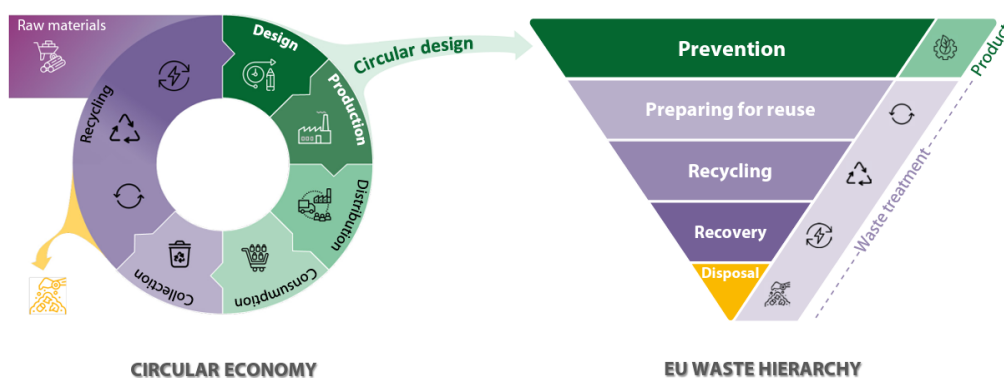


Figure 3: Phases of the circular economy vs EU waste prevention, [European Court of Auditors \(2023\)](#)

If increased material efficiency through longevity, reuse, or recycling does not result in reduced overall material consumption, the circular economy has forfeited its 'raison d'être'.

At the international level, the *Kunming-Montreal Global Biodiversity Framework* identified resource use as a main driver for biodiversity loss and established the following target: 'By 2030, reduce the global footprint of consumption in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with Mother Earth.'¹⁴ The EU, as a party to the framework, is obliged to act accordingly, and the way forward to achieve this goal seems clear: collective self-limitation. Limiting primary production can ensure the economy does not surpass planetary boundaries and expected efficiency gains do not backfire and lead to ever more resource consumption. This is particularly important among overconsuming populations in the Global North as reduced consumption there would leave a fair consumption space for under-consuming populations to meet their needs.¹⁵

¹² "Consumption Footprint and Domestic Footprint: Assessing the environmental impacts of EU consumption and production," JRC, 2023, publications.jrc.ec.europa.eu/repository/handle/JRC128571.

¹³ i: Waste reduction targets are only foreseen for very few waste streams; for packaging under the proposed Regulation on Packaging and Packaging Waste (PPWR), and for food waste under the Waste Framework Directive Resision (WFD) in 2023.

¹⁴ "Kunming-Montreal Global Biodiversity Framework, decision 15/4," UNEP, Convention on Biological Diversity, 2022, cbd.int/gbf/, Target 16.

¹⁵ "Rethinking what we want to value as a society – a Q&A with Dr. Lewis Akenji," Earth4All, 2022, earth4all.life/views/rethinking-what-we-want-to-value-as-a-society-a-qa-with-dr-lewis-akenji/.

To this end, sufficiency as a sustainability strategy has increasingly been explored for energy and food systems. As per definition by the Intergovernmental Panel on Climate Change (IPCC), 'sufficiency policies are a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human well-being for all within planetary boundaries.'¹⁶ As a strategy, it seeks to decrease absolute resource and energy consumption.¹⁷ In this context, it is important to note that consumption happens within the social sphere: *'people consume to meet their biological needs, social expectations, and to satisfy desires. But people also consume the way they predominantly do because they are railroaded to do so by prevailing infrastructure and social norms,'* as Dr Lewis Akenji, member of the Earth4All Transformational Economics Commission, recently put it.¹⁸ What is required for the sufficiency transition are new values that challenge what is perceived as success today.¹⁹ There are two paths to making sufficiency a reality: choice editing and social innovation - eliminating the most harmful choices and creating an economy based on care and well-being.²⁰

Sufficiency in the fashion sector

Introducing sufficiency and reduction across the entire economy can be a daunting prospect. However, when taking the fashion textiles sector as an example, it becomes much more straightforward to grasp and can serve as a model for other industries. Achieving sufficiency requires significant reforms of the economy at large that go far beyond the scope of this paper and include the introduction of distributive systems for local and global equity accompanied by inclusive, participatory processes, e.g., citizen assemblies.²¹

If not addressed holistically, reducing resource use in one sector could engender additional growth in other sectors due to resources freeing up, resulting in an overall unchanged environmental impact. We, therefore, regard fashion textiles as an entry point for a larger transition to a zero waste society. The shortcomings of this case study approach must be complemented by more research in other sectors.

When taking a closer look at the consumption footprint of 'clothes' among other household goods, it becomes obvious that they take a significant share.

¹⁶ "Climate Change 2022, Mitigation of Climate Change, Summary for Policymakers," IPCC, 2022, [ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf), p. 35.

¹⁷ "Sufficiency," ifeu, 2023, [ifeu.de/en/topics/energy/sufficiency/](https://www.ifeu.de/en/topics/energy/sufficiency/).

¹⁸ "Rethinking what we want to value as a society – a Q&A with Dr. Lewis Akenji," Earth4All, 2022, earth4all.life/views/rethinking-what-we-want-to-value-as-a-society-a-qa-with-dr-lewis-akenji/.

¹⁹ "New Energy For Europe," ZWE, 2022, zerowasteurope.eu/library/new-energy-for-europe/.

²⁰ "Rethinking what we want to value as a society – a Q&A with Dr. Lewis Akenji," Earth4All, 2022, earth4all.life/views/rethinking-what-we-want-to-value-as-a-society-a-qa-with-dr-lewis-akenji/.

²¹ "What is degrowth," degrowth, 2023, degrowth.info/degrowth.

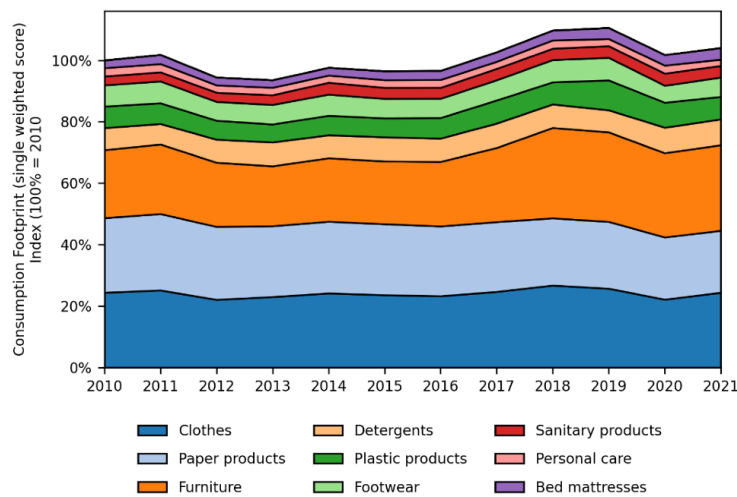


Figure 4: Evolution of the Household good area of consumption for EU-27 between 2010 and 2021, [JCR \(2023\)](#), p.33

The scale of fashion overproduction and consumption is mind-boggling. Every year, the average European buys 26 kg of textiles and generates approximately 11 kg of textile waste. Only half of used clothes are collected for reuse or recycling, and with recycling of textiles into new pieces of clothing being almost non-existent (approximately 1%), the vast majority of the collected clothes end up being exported and eventually, incinerated or landfilled (87%).²²

Moreover, the implications of the textile industry are alarming: in the EU, textile consumption generates the fourth-highest negative impact on the environment and climate, as well as the third-highest for water and land use (taking into account the impact globally).²³ Even when efficiency measures are implemented in the supply chain, e.g. energy and material efficiency, shifting to 100% renewable energy, and more sustainable materials, there is still a gap of almost 40% (in comparison to emissions in 2019) of necessary emissions reductions to meet the 1.5 degrees target, as modelled by the World Resources Institute.²⁴

²² "The Impact of Textile Production and Waste on the Environment (Infographics)," European Parliament, 2023, europarl.europa.eu/news/en/headlines/society/20201208ST093327/the-impact-of-textile-production-and-waste-on-the-environment#:~:text=Textile%20waste%20in%20landfills%20and%20low%20recycling%20rates&text=Europeans%20use%20nearly%2026%20kilos.

²³ "EU strategy for sustainable and circular textiles," European Commission, 2022, environment.ec.europa.eu/publications/textiles-strategy_en.

²⁴ "A Roadmap to Net-zero Emissions for the Apparel Sector," World Resource Institute, 2022, wri.org/technical-perspectives/roadmap-net-zero-emissions-apparel-sector.

Between 2000 and 2015, global clothes sales doubled, an increase out of proportion with population growth of about 20%.²⁵ In fact, there are already enough clothes in the world to dress the next six generations.²⁶ But what drives growth in the sector? In the EU, prices decreased by 30% between 1996 and 2018 relative to inflation. This development was enabled by the increasing use of cheap, synthetic fibres from fossil resources²⁷ and the relocation of production to jurisdictions with poor labour and environmental standards.²⁸ The subsequent rise of fast-changing fashion trends²⁹ resulted in 'style consumption'³⁰ rather than consumption to meet physical needs. The dominant business model of the fashion industry hence relies on persuading consumers to continuously follow and buy new fashion trends. Constant digital advertising and the widespread use of social media have also contributed to this trend.³¹ Evidence shows that in 63% of cases, clothes are disposed of because of poor fit and perceived value, instead of the actual quality of the garment.³² Recent research has shed light on sustainable consumption corridors for fashion and underlines that around five new garments per person per year represent a sustainable level of consumption.³³

Overproduction in the sector is commonplace due to the forecast-driven model, rather than a demand-driven one. Evidence shows that 30% of clothes produced are not even sold to consumers, unveiling how overproduction is factored into the business models of the sector.³⁴ These findings put into question the ability of the EU's *Strategy for Sustainable and Circular Textiles* to lower the environmental impact with the foreseen measures on design, labelling, information requirements, collection and recycling.³⁵

Certainly, reducing production poses the question of job losses: how can production volumes be reduced globally in a just way? If fewer new garments are produced, fewer workers would be required in the sector,

²⁵ "Dress and the city: a comparative study on clothing and textiles environment policy in five European cities," Maldini, Iran, Laitala, Vitterso, Jestratijevic, Amaral, Vladimirova, 2021, tugraz-verlag.at/en/gesamtverzeichnis/uncategorized/proceedings-of-the-20th-european-roundtable-on-sustainable-consumption-and-production-ebook/.

²⁶ "A circular economy isn't enough – we also need to consume less," Anders Wijkman, Earth4All contributor and member of the International Resource Panel, and Janez Potochnik, Co-chair, International Resource Panel, Earth4All contributor, 2023, earth4all.life/views/a-circular-economy-isnt-enough-we-also-need-to-consume-less/.

²⁷ "EU strategy for sustainable and circular textiles," European Commission, 2022, environment.ec.europa.eu/publications/textiles-strategy_en.

²⁸ "Beyond circular fashion," Zero Waste Europe, 2023, zerowasteurope.eu/wp-content/uploads/2023/01/Jan23-ZWE_Beyond-Circular-Fashion-Report.pdf.

²⁹ Fletcher, Kate. 2014. *Sustainable Fashion and Textiles*. (second edition). Earthscan, London.

³⁰ Cho, Erin, Shipra Gupta, and Youn-Kyung Kim. 2015. "Style Consumption: Its Drivers and Role in Sustainable Apparel Consumption." *International Journal of Consumer Studies* 39 (6): 661–69. doi.org/10.1111/ijcs.12185.

³¹ "Consumer Research for ECAP 2016–2019," WRAP, 2019, ecap.eu.com/wp-content/uploads/2019/12/Consumer-Research-for-ECAP.pdf.

³² "Review of clothing disposal reasons," Clothing research, Kirsi Laitala and Ingun Grimstad Klepp, 2022, clothingresearch.oslomet.no/2022/10/19/review-of-clothing-disposal-reasons/.

³³ "Unfit, unfair, unfashionable," HotorCool, 2022, hotorcool.org/wp-content/uploads/2022/12/Hot_or_Cool_1.5_fashion_report.pdf.

³⁴ "Textiles and the environment," European Parliament, 2022, [europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI\(2022\)729405_EN.pdf](https://europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI(2022)729405_EN.pdf).

³⁵ "EU strategy for sustainable and circular textiles," European Commission, 2022, environment.ec.europa.eu/publications/textiles-strategy_en.

especially in the Global South, as the top clothing manufacturing countries are China, India, and Pakistan.³⁶ Some jobs could move from manufacturing to repair, refurbishment, collection, sorting, or recycling of used garments. However, to ensure the well-being of all workers, a broader societal shift and an active government will be required. In this respect, it's also important to remember the failings of the current textile production system, with its global supply chains, diverse players, and tight profit margins, which fails to provide decent work and livelihoods for many and is in urgent need of an overhaul.³⁷ Research and guidance for a just transition in the textile and garment supply chain are being progressively developed.³⁸

In the following sections, we present policy options and other interventions for the transition to a fashion sector that is based on the principle of sufficiency and aligned with planetary boundaries. Further research is still required to assess which interventions are best suited to facilitate the transition and how they interact. A one-size-fits-all approach is unlikely to solve the issue. Finally, policymakers, governments, and authorities must have the courage to move ahead and test these options. We hope this will inspire meaningful change at all levels, from local communities to global governance.

³⁶ "5 Biggest Clothing Manufacturing Countries in the World," Insider Money, May 9 2023, insidermonkey.com/blog/5-biggest-clothing-manufacturing-countries-in-the-world-1138812/5/.

³⁷ "Sustainability and Circularity in the Textile Value Chain: Global Stocktaking," UN Environment Programme, 2020, wedocs.unep.org/20.500.11822/34184.

³⁸ "Introducing the "Just Transition Toolkit" for the Textile and Garment Supply Chain in Asia," ILO, 2023, ilo.org/asia/media-centre/multimedia/WCMS_890197/lang--en/index.htm&sa=D&source=docs&ust=1692791193955092&usg=AOvVaw3d6a7vUBE2tgREgVYjImw8.



Zero Waste Europe is a European network of communities, local leaders, experts, and change agents working towards the elimination of waste in our society. Advocating for sustainable systems and the redesign of mankind's relationship with resources, they accelerate a just transition towards zero waste for the benefit of people and the planet.
www.zerowasteurope.eu



Zero Waste Europe gratefully acknowledges financial assistance from the European Union. The sole responsibility for the content of this material lies with Zero Waste Europe. It does not necessarily reflect the opinion of the funder mentioned above. The funder cannot be held responsible for any use that maybe made of the information contained therein.



Authors: Theresa Mörsen

Editors: Aline Maigret, Ana Oliveira, Dorota Napierska, Esra Tat, Jack McQuibban, Joan Marc Simon, Lauriane Veillard, Nanna Bille Cornelsen, Manon Jourdan

Date: September 2023

General information: hello@zerowasteeurope.eu

Media: news@zerowasteeurope.eu

Cities-related topics: cities@zerowasteeurope.eu

zerowasteeurope.eu

www.zerowastecities.eu

www.missionzeroacademy.eu

