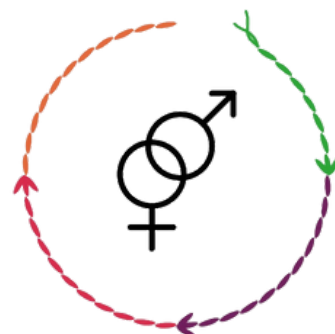


CIRCULAR STRATEGIES AND SOCIAL IMPACTS IN THE DUTCH TEXTILE VALUE CHAIN



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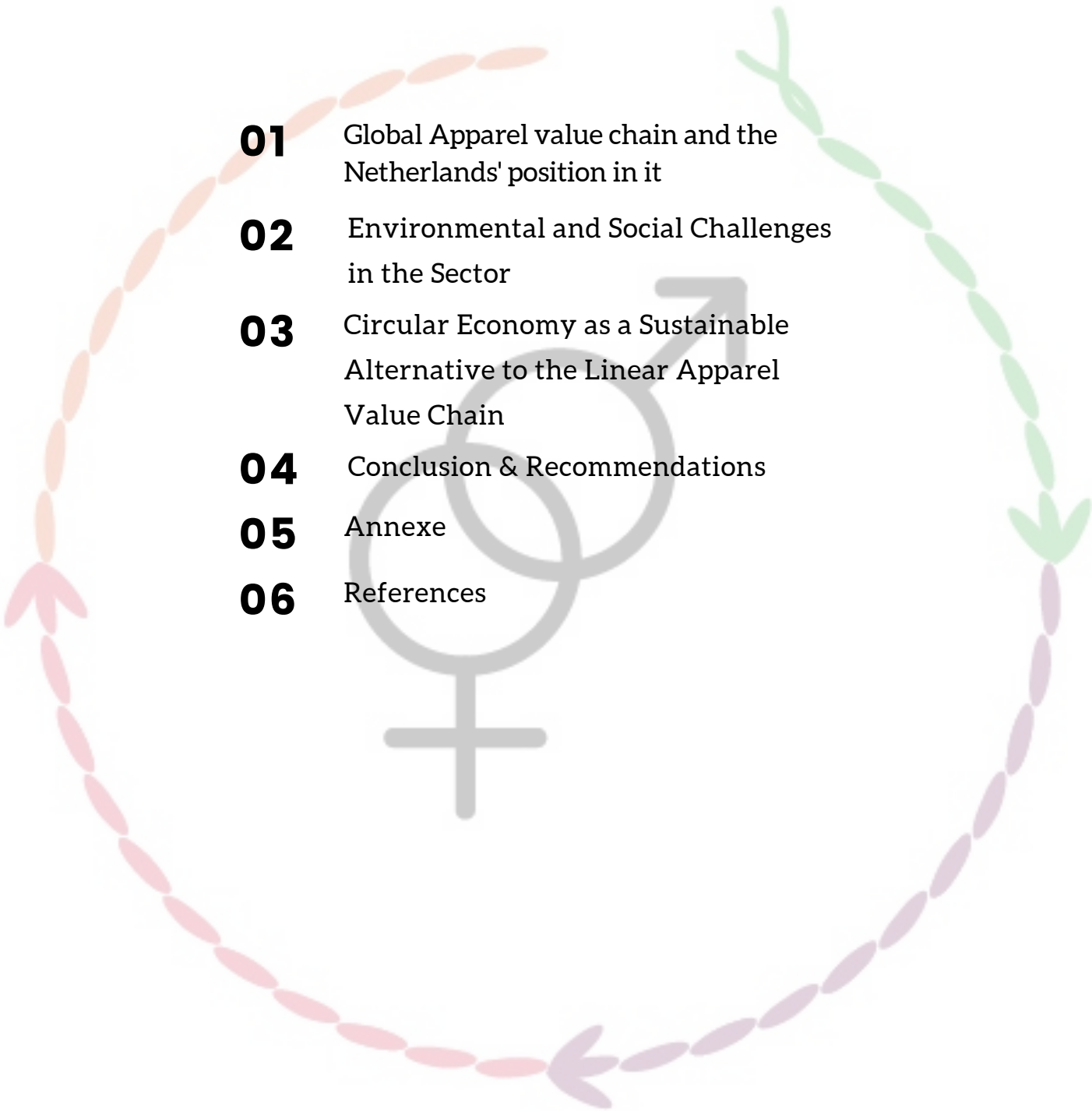


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ABOUT

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This report is part of a larger collaborative four-year research project. Founded by Laudes foundation and having as partners of Utrecht University, Conserve India in India, Smart Green Industry in Spain and Ashoka. It analyses the Fashion Value Chain from a Global and local perspective with emphasis in India, Spain, and the Netherlands. Using a novel framework to assess social impact for CE called the SIAF-CE, the first phase of the research project aimed to provide evidence of quality of jobs, community wellbeing and gender equality of applied circular strategies in the textile and apparel sector. The second phase of the project is concerned in co-designing alongside of key stakeholders of the global apparel value chain, images of the future that are both circular and inclusive and that leaves no one behind. The series of inclusive Circular fashion Futures workshops uses techniques of futuring (ToF), to develop inclusive circular fashion pathways for the industry of 2050 and aims at developing a set of policy and industry recommendations to increase uptake of inclusive circular fashion. The third phase comprises a piloting phase with both startups and incumbents where a selection of environmental and social impact recommendations and will be implemented and evaluated with different businesses in the three countries. Finally, the fourth phase consists of an analysis of power dynamics, barriers, opportunities, threats, and levers to a transition to a more Inclusive, and fair circular fashion Apparel Value Chain.

The research team is led by Dr. Ir. Jesus Rosales-Carreón and Lis Suarez-Visbal Ashoka fellow and composed of members from Utrecht University and the Copernicus Institute of Sustainable Development. The team also includes the two poles that connect the research with India, from the organisation Conserve India, and with Spain, from Smart Green Industry.

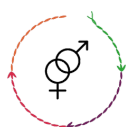
This report is based in the scientific publication called "The Social Impacts of Circular Strategies in the Apparel Value Chain; a Comparative Study Between Three Countries" by Lis J. Suarez-Visbal et al, 2022 published in the journal Circular Economy and Sustainability in September 2022, which completed the first phase of the research project. It was based on a sample of over 210 workers and 90 managers and experts interviewed. See the whole publication in this link.





THE NETHERLANDS AND THE GLOBAL APPAREL VALUE CHAIN

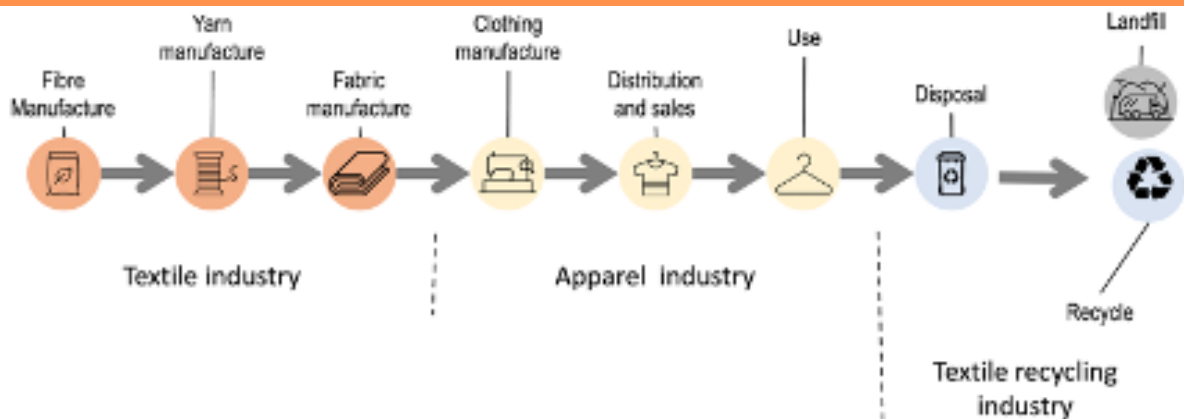
The Textile & Apparel (T&A) value chain, like many consumer goods industries, is globally distributed, operating across multiple geographies. Three key stages of textile and apparel are depicted in Figure 1, with pre-use extraction of material, distribution and use, and disposal in post-use. Starting with raw material extraction used for yarns and fabrics, as well as manufacturing processes to make the apparel. These earlier processes are often located within countries in countries such as China, Bangladesh, India and Vietnam, and later exported for use-phases to countries or regions such as Europe, North America, and Japan, whose consumption of clothing per capita is far higher (Peters et al. 2021; WTO 2022). Although, it is pertinent to note that the European Union is simultaneously one of the largest importers and exporters of clothing and textiles globally. Not only of pre-use items but also for exporting used textiles, for instance, the EEA (2023) found that over 80% of used textiles were exported to either Asia or Africa.



In post-use, clothing is sorted and disposed of, often to landfill according to one calculation 58% of textile waste in the Netherlands is sent to landfill (Labfresh 2019).

The expanse of the T&A value chain is large and complex, consisting of multiple actors and stakeholders across various (sub-)industries and sectors, as such estimates for the global employment within the broad industry are varied. Given the high degree of informality within the T&A value chain, especially those within manufacturing countries, such as India, China and Bangladesh, the total employment is not known. Estimates including manufacturing, distribution, sale, and disposal stages put global employment of T&A upwards of 400 million (Common Objective 2018). One estimation highlights that there would be 24 possible jobs for every 1,000 tons of textile waste, given the 12 million tons of annual textile waste generated in Europe, this represents a potential 500 circular jobs (AERESS, 2020, p.22). Research by Circular Economy (2021) highlights that, depending on the policy pathway adopted, employment in textile collection in the Netherlands could increase between 100 to 130%, and if recycling is prioritised would increase employment by up to 800% relative to the baseline.

Figure 1 The Textile and apparel value chain



Source: Suarez-Visbal et al 2023

While the Netherlands has a rich history of tailoring, repair, and apparel production, consistent with trends of globalization, lower-priced imports catalysed outsourcing of T&A manufacturing. (Drost 2004). The increasing labour costs in the Netherlands and the relatively low-levels of innovation, coupled with increasingly available cheap foreign labour established an increasing dependence on imports of apparel (Noor et al. 2008).



In 2019, one calculation of the domestic production of textiles and clothing stood at just 6.1kT, just over 2% of all textile and clothing consumption in the Netherlands (Circle Economy 2021).

Meanwhile, employment with T&A sectors is now estimated at 100,000 people in the Netherlands in 2021, the majority of which relate to distribution and sales, meanwhile less than 2% of these jobs can be considered circular (CBS 2022; Circle Economy 2021). The majority of these relate to rental and resale, together 1.9% of jobs within the value chain, with less than 1% of jobs working for repair. In post-use jobs, 55% of jobs relate to incineration of waste clothing, the rest consists of collection, sorting, cleaning and recycling (Circle Economy 2021, 8).

According to the Dutch office of statistics (CBS), in 2020 total turnover within the manufacturing and sales of textiles and apparel reached €15.4 billion, albeit while running net losses of €110 million (CBS 2022). Compared to other retail consumption in the Netherlands apparel experiences greater growth and is forecasted to continue growing into the late 2020's (Statista 2022; CBS 2022). This creates an imperative for stakeholders within the T&A value chain, businesses, NGOs, policy makers, to ensure that this growth is achieved by implementing CS retaining value for longer while also delivering positive social impact.



ENVIRONMENTAL AND SOCIAL CHALLENGES IN THE SECTOR

While the T&A sector is forecasted to continue growing in the coming decade, the resource intensity of the industry creates a myriad of environmental issues, along with detrimental social impacts driven by outsourcing to cheaper labour of more vulnerable peoples. The environmental challenges relate to overexploitation of natural resources, soil and water pollution, and greenhouse gas emissions, each of which driven further by high production volume of low-quality clothing (Choudhury 2014; Sajan 2019).

Water pollution is especially problematic, from the manufacturing stages where discharged dyes and other chemicals runoff to use stages where microfibres are released during washing. Increasing attention being given to the consequences of micro-plastics (both at manufacturing and users phases?) highlights the risks of micro-plastics entering the food chain, harmful for aquatic life and ecosystem functioning, accumulated micro-plastics in the food chain become toxic for human consumption (Manshoven 2022). Moreover, it is estimated that over 1 million tonnes of textile waste ends-up in landfill each year, contributing to soil and air pollution as well as the greenhouse effect (Bairagi 2017). The disposal of waste is also becoming geographically dispersed, with excessive clothing consumption within high income countries exporting disposed clothes to lower income countries such as Kenya, compounding the social impacts within the T&A value chain (Changing Markets Foundation 2023).

According to the International Labour Organisation (ILO) (2014), most workers at the manufacturing stage work under questionable conditions, where penalties for not meeting production targets, verbal abuse, lack of voice and representation, and excessive overtime are common. The vulnerability of workers within the T&A value chain was highlighted further during the Coronavirus, with an ILO study highlighting the high-risk and vulnerability of workers due supply chain fragility (ILO 2020). This compounded the existing social challenges, ranging from high levels of informality, lack of representation and work voice, and high risk of accidents and health issues (Priya, S., & Gupta, S. 2020).



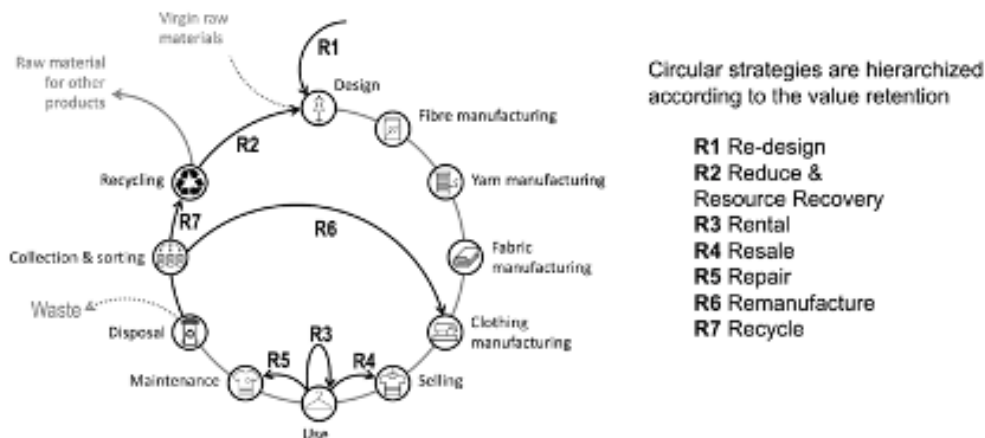
Research by the Business & Human Rights Resource Centre emphasises both the direct role that European (mainly eastern euopean) manufacturing has in potential human rights violation, as well as the complicit role of European brands for abuses across the value chain (Ebert et al. 2018). Such that, over 170 cases of unresponded alleged negative human rights impacts were examined, of which 18% occurred within the EU. Exploitation of vulnerable workers, then, remains a persistent threat within EU T&A companies. Reporting from the Clean Clothes Campaign (2020) highlights further that the minimum wages often fall short of protecting workers, such that minimum wages are, on average, only 65% of living wages. Further issues emerge in the automation of manufacturing and digitalisation of sales processes, creating concern about labour security, job protection, and consequential welfare impacts from unemployment (ILO, 2019). Additionally, the global recycling industry is also known to have high levels of informality, where workers' voices and representation rights are minimal, and where the risk of accidents and health issues is very prominent (Priya, S., & Gupta, S. 2020).



CIRCULAR ECONOMY AS A SUSTAINABLE ALTERNATIVE TO THE LINEAR APPAREL VALUE CHAIN

Striving to achieve positive environmental, economic, and social impacts, businesses are adopting the Circular Economy as a new production model (Henry et al., 2020). While the aims of circularity are sometimes focused on the reducing environmental damages by minimising resource flows, more robust initiatives integrate multiple social equity and economic prosperity benefits. Circular Strategies (CS) are situated within a hierarchy, privileging interventions that reducing the input of raw material or output of waste or retain value of a product by extending its lifetime. For instance, reduce or redesign strategies that lead to absolute reductions in material use and waste.

Figure 2. The circular Strategies used in the textile and apparel value chain



Source: Suarez-Visbal, Stuckrath, & Rosales Carreón. (2023). Circular Economy An overview of global trends, challenges, and opportunities. In *Accelerating Sustainability in Fashion, Apparel & Textiles*. Manuscript submitted for publication.

Figure 2 depicts seven key CS within the T&A value chain, in which the numbers representing the power that the intervention has, such that the smaller the number, ie the earlier in the value chain the CS is introduced the the greater priority (Guldmann, 2016; Stahel, 2015 Jung & Jin, 2016; Accenture, 2019).



These strategies aim to 'close the loop' of the linear economy, notably, while there is often great attention given to the importance of recycling in the name of sustainability and circularity, due to the energy requirements involved in recycling processes it is, in fact, a markedly low leverage intervention point

The increasing diversity of businesses attempting to implement CS within the T&A value chain attempt to tackle economic and environmental aspects, yet, the social impacts (such as decent pay, gender equality, and labour conditions) have not yet garnered sufficient attention (Elia, Gnoni, and Tornese, 2017; Millar, McLaughlin and Börger 2019; Suarez-Visbal et al.; 2022b). Moreover, the social dimension, defined in literature by the number of jobs created (Millar, McLaughlin, and Börger, 2019), is lacking, ignoring the type of job and quality, as well as potential individual and community impacts or trade-offs (Suarez-Visbal et al., 2022b). In order for the Circular Economy to achieve triple bottom line benefits, the environmental and economic impacts must also be complimented by the social.



THE DUTCH TEXTILES

CONTEXT

The Netherlands has been on the forefront of developing national targets, with increasing efforts to disaggregate and develop industry specific strategies (Ministry of Infrastructure and Water Management 2017). While initially only a letter of intent, therefore not legally binding, the years proceeding has seen the development of both shorter- and longer-term targets for achieving a fully Circular Economy by 2050, with an interim target to halve consumption of primary materials by 2030. The initiatives here range from developing specific higher-R ladder strategies, engaging in multistakeholder platforms, and hosting forums to raise awareness (Ministry of Infrastructure and Water Management 2021; PACE 2021). Moreover, attention has indeed been given to T&A sectors, with a five-year policy program emphasising the need for intermediate steps to reduce textile waste in the Netherlands (Ministry of Infrastructure and Water Management 2020). Aligning with broader circularity targets, 50% of textile products should be recycled after collection by 2030. Illustrative of this is the 'Denim Deal' initiative, bringing together stakeholders across the value chain of denim apparel to support the use of post-consumer recycled cotton in garments (Ministry of Infrastructure and Water Management 2020).

Mapping out the ecosystem of stakeholders within the Dutch transition towards a circular apparel value chain highlights a diversity of actors. Along with the start-ups and SMEs, Suarez-Visbal et al. (2022, 12) highlight the role of governments and municipalities, knowledge institutions, such as think tanks, academia and consultants, as well as NGOs and trade unions, and not to forget the consumers themselves. However, there is still a lot of fragmentation in the sector, with companies continuing to operate in silos and struggling to access finance due to alternative structures of their business models (Achterberg & Bañales 2022). According to Suarez Visbal et al (2022b), around 65% of the business applying circularity in the Netherlands are SMEs and start-ups represent, advocating for the creation of local jobs.

Additionally, according to interviews conducted by Suarez- Visbal et al. (2022b), the ecosystem is not fully functional as there is an enormous gap separating two sides of the value chain: manufacturers with recyclers and recycled textiles.



Nonetheless, The Netherlands is well-positioned for resale and remanufacture because larger brands have distribution centres in Belgium or Germany, as such, closing the aforementioned gap between manufacturers and recyclers could be lucrative, especially for SMEs and startups working in the sector struggling to increase sales and establish sustainable incomes (Suarez-Visbal et al., 2022b).

Suarez-Visbal et al. (2022b) find that of the Dutch companies under review, Rental (R3) and Resale (R4) companies are the most popular with a range of second hand and vintage stores offering B2C (business to consumer), as well as digital platforms for B2C and C2C (consumer to consumer) reselling. Indeed, the second-hand garment market was a large growth sector in the Netherlands in recent years, with forecasts for increasing consumer purchasing (Statista 2022).

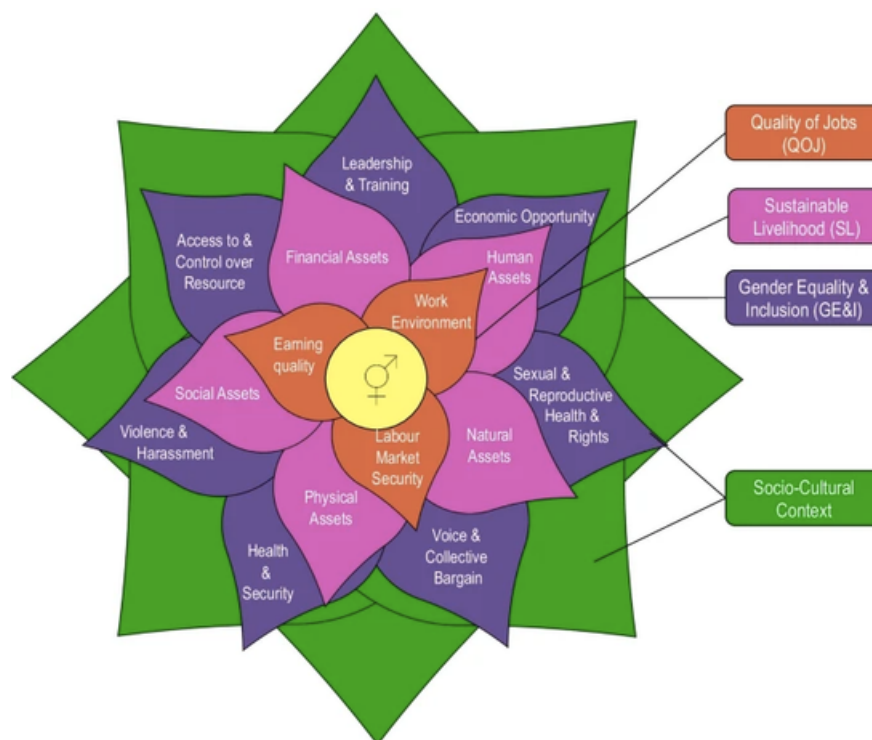
In-house repair (R5) services, as well as the number of independent repair shops, are experiencing large growth of around 20% both in the Netherlands and globally (Suarez-Visbal et al. 2022b). Along with the budding trend of 'Repair Cafes' supporting the movement of 'Right to Repair' (Śajń 2020). Meanwhile, although recycling (R7) is well established, it faces several barriers such as the low quality of existing fast fashion garments and poor awareness of how to recycle clothes (Suarez-Visbael et al 2022b). The Amsterdam based Circular Innovation Collective (CIC) provides an example of spaces within the Dutch context where multiple stakeholders come together to innovate, iterate, and implement circular solutions (Metabolic, 2021). Incubating start-ups and SMEs with the aim of leveraging higher R strategies, and as such establishing a T&A system that is designed to be regenerative and aligned to ecosystems, rather than degenerative and exploitative. In this context, the importance of socially-mission driven business is crucial for supporting the circular economy, yet, tensions emerge from the kind of government support offered. While job training grants are useful for reaching workers and creating basic employment, what is often left out are strategies of professionalisation for repairing and tailoring skills.



THE SOCIAL IMPACT OF CIRCULAR STRATEGIES IMPLEMENTED BY DUTCH COMPANIES

Suarez-Visbal et al. (2022a) constructed a social impact assessment framework for circularity (SIAF-CE^{♀♂}) in a first attempt to establish a method to assess and analyse the social impacts of CS. The SIAF-CE^{♀♂} is composed of 15 multi-attribute, qualitative indicators across three dimensions: quality of job (QOJ); sustainable livelihood (SL); and gender equality and inclusivity (GE&I). Including social features of circular strategies within the T&A value chain, such as gender (in)equality, the framework intends to help businesses, NGOs, and government officials to i) collect relevant gender- disaggregated data of the workers; ii) track, document, and monitor the development of different circular jobs and iii) identify measures to improve the quality of life of workers in the T&A value chain.

Figure 3: The SIAF-CE (Social Impact Framework for Circularity)



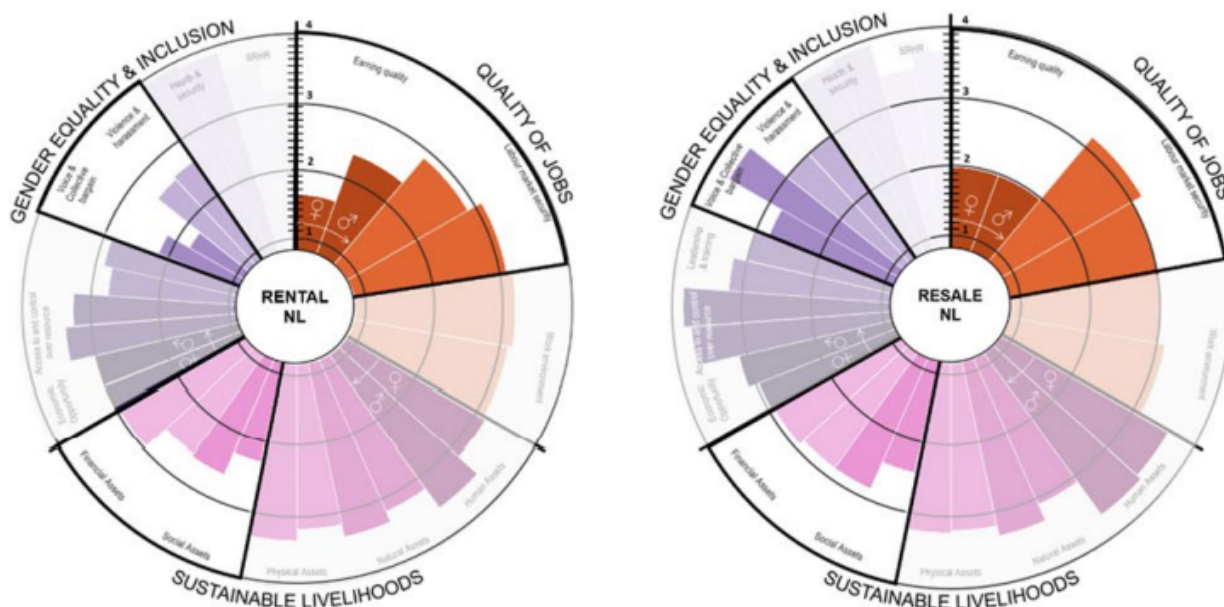
Source: The social impact of circular strategies in the Apparel Value Chain; a comparative study between three countries (Suarez-Visbal et al., 2022b)



Across all CS status in the country, in the Quality of Jobs category, Suarez-Visbal et al. (2022b) find Dutch female workers to have low earning quality, especially when compared to male workers. In Sustainable Livelihoods, responses to both social and financial capital are low for both male and female workers (with financial assets lower for women). In Gender Equality and Inclusion, voice and collective bargaining and violence and harassment seem to be lower than other indicators. Part of this could be explained by the fact that most of the businesses operating CSs are start-ups and SMEs with few employees and without a labour union. Moreover, in the Netherlands, some businesses with a CAO (collective labour agreement) for their sector were unaware of its existence, evidencing the labour union's need to re-engage with this constituency.

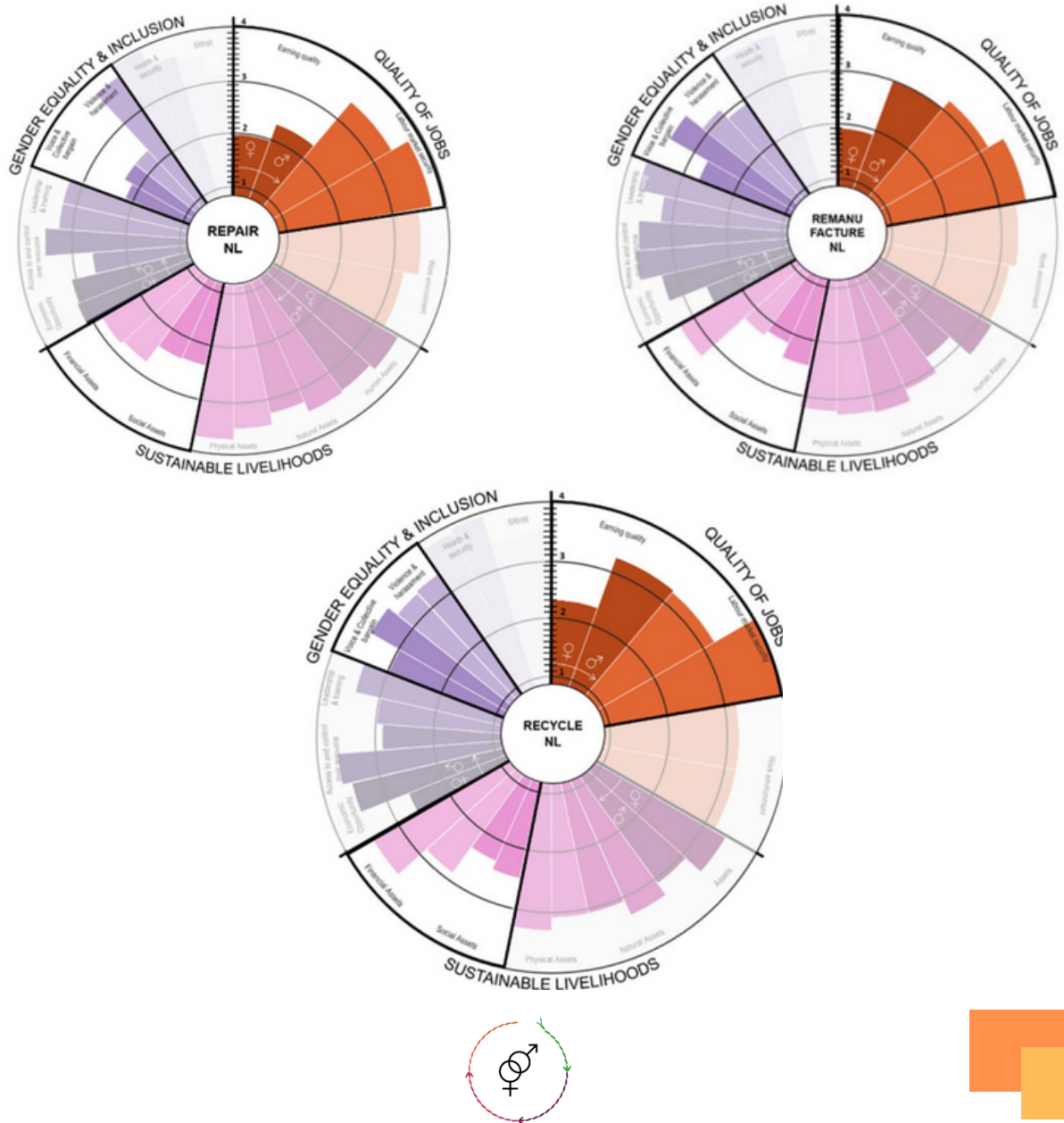
Disaggregating the results, as depicted in Figures 1 and 2, reveals that those employed within rental (R3) (both Corporate Rental and B2C), consisted of either women, working part-time for minimum wage, or male immigrants working in logistics. Women experienced lower pay than the male workers, while both groups, nonetheless experience high degrees of job security. In terms of gender equality and inclusivity, female workers perceive a higher degree of voice and collective bargain than male workers, albeit, still at low level.

Figure 4: The Social Impact Of Selected Dutch Circular Strategies



In resale (R4), there exists a thriving brick-and-mortar, second-hand store culture in the Netherlands, in which the majority of workers earn a minimum wage. Meanwhile, the growth of resale digital platforms, enable greater C2C reselling, on these platforms users are mostly women, also receiving minimum wage. The broad minimum wage-earning quality for both men and women doesn't capture, however, the significant reliance upon volunteers within resale enterprises. For instance, the various Kringloopwinkels second-hand stores across the country depend greatly on volunteers. Across resale-oriented operations, Suarez-Visbal et al. (2022b) find that female workers have similar earning quality to male employees, however since women are holders of more part time jobs, this can make them more vulnerable. In terms of labour security and working conditions there doesn't seem to be a gap and both male female and male workers are affected the same way. However, women experience lower levels of voice and collective bargaining than men.

Figure 5: The Social Impact Of Selected Dutch Circular Strategies



In repair (R5), the independent repair shops 67% of workers are male immigrants who experience slightly higher pay than in-store repair services, where women are the majority of workers and are paid around minimum wage. Interestingly, although salaries are not high (above minimum wage), there is a strong sense of labour market security. This indicates there exist deeper motivations and social structures encouraging people to work but not necessarily dependent upon high salaries. In terms of gender equality and inclusion, significant differences in perception of violence and harassment, in which women have a far worse experience of harassment or perception of company policy. This is the most notable gap across R-strategies for all features of gender equality and inclusion. In remanufacture (R6), pronounced gender pay gaps are still present. Favouring the 90% of tailors which are male-immigrant workers, compared with the machine operators of which 75% are women working part-time for salaries around minimum wage (Suarez-Visbal et al., 2022b). The earning quality gives an indication to the gendered social work that women working within remanufacturing must complete outside of their paid jobs (care-jobs), allowing them to work only part-time.

Even though a substantial presence of NGOs and social businesses comprises



recycling (R7), there exists a large gender pay gap, in which women are generally paid slightly above the minimum wage, while men receive slightly above the living wage. Part of this may be due to the majority of women (66%) working part-time while holding lower paid sorting and logistics jobs. This contributes to large differences in perception of economic opportunities within companies.

More broadly, trends exist across the CS deployed by companies, most notably, lower earning quality for both genders, that when wages are higher, benefit men disproportionately. The context of lower earnings for women helps explain the subsequent perception difference for economic opportunity within companies, or rather lack of thereof, for women. Social assets, followed by financial assets, are consistently the lowest rated aspect of workers' livelihood, contributed by a lack of being part of local community. The difference between male and female perception of social assets varies, albeit marginally, yet in financial assets men consistently have a more positive perception of issues of household debt and saving than female workers. In term of gender equality and inclusivity, while voice and collective bargaining is often perceived highly, often there exists a gap with men having a more positive perception than women.

A final worthwhile note relates to the distributed nature of the interviewed businesses, such that over 70% operated using 'third-party manufacturing contracting'. Similar to the conventional AVC, incumbent companies in the Netherlands will outsource operational and production activities to countries such as Turkey, Morocco and India (Suarez-Visbal 2022b). While there is some difference found for start-ups and SMEs to operate more locally or regionally, there are risks that convenient patterns of outsourcing will be reproduced within the circular strategies adopted by incumbent businesses (Stahel & Cliff 2015).

Unfortunately, as applied today CE jobs are not transformative for workers, especially for women. The research of Suarez-Visbal et al. (2022b) highlights that more vulnerable populations occupy the least formal, lowest paid roles within circular economy in apparel. The authors emphasise that existing social norms play an important role, for instance, the values projected onto the label of 'designer' compared to jobs contributing to repair or (re)manufacture. An insight here relates to the mismatch between perceptions of the job quality and who is performing it, whereby entrenched stigmatisations of gender and ethnicity/nationality effect how a job is valued.



Critical attention to gender equality and equal opportunities for all workers are essential. Real growth opportunities, better salaries and training in desirable skills should be present. The role of social enterprises is considerable in the sector, however, more attention should be focus on creating lasting quality jobs for the workers, their families, and their communities, rather than only focusing in creating jobs. (Suarez-Visbal et al., 2022b).

These findings show the imperative of a just and inclusive transition of the Circular Economy in the sector. If CE is to be considered the new economic and societal model to adopt, businesses and policymakers must work hand in hand to establish a stronger social impact ambition in their definition of Circularity in the sector.



CONCLUSION & RECOMMENDATIONS

The adoption of the CE model represents an opportunity for countries like the Netherlands to reduce their environmental impact while creating an economic gain. Although, as of now, CS show certain similarities with the linear AVC, like gender inequality, the uncertainty of working conditions low labour security and in some cases low earning quality, promising aspects that can be secured and further developed are present.

Additionally, start-ups can play a pivotal role in bringing social impact, but it must be intentional and clearly articulated within the circular mission and business strategies of the company. Socio- economic considerations must be integral to have a positive social impact.

For an inclusive circular transition of the sector, businesses adopting circular strategies should:

1. Conduct an Impact Assessment (including social and environmental considerations)

- This assessment should be carried out in a way to map and **measure material flows from company activities** to support the identification of potential hotspots for higher-R circular strategies, along with trade-offs.
- Use a social impact assessment tool (such as the SIAF-CE) to understand the social gaps in, and **opportunities to improve, quality of life of workforce**. For instance, vulnerabilities due to pay gaps versus working hours, employer-employee relationships, income gaps between top and bottom earners, and together with workers establish Key Performance Indicators.
- **Assess existing business models** to identify where dematerialisation could occur.

2. Improve social impact

- Support the **creation of workers well-being committee** that allows voicing their opinion on decisions that concern them.
- Policy of **open book salary ranges** both for recruitment and promotion purposes: ensure that all workers are paid a **living wage**.



- Revising workers' contracts to **guarantee equal decent working conditions for male and female workers** for the same job are respected and enforced, including equal parental leave.
- **Privilege fixed contracts over short-term contracts** with highly fluctuating hours-based jobs.
- Work more integrally with **vocational training sector to-reskill workers** and their hard-skills.

3. Develop stakeholder mapping and collaborations.

- **identify direct and indirect stakeholders** both up- and down-stream of company value chain. & **Identify where collaborations can be developed** to address together social and environmental impacts.



ANNEXE & REFERENCES

Accenture Strategy & Fashion For Good. (2019). The Future of Circular Fashion: Assessing the Viability of Circular Business Models.

Achterberg, E., & Bañales, A. R. (2022). Financing Circular Services: How are circular service businesses currently financed? And if not, why not? Sustainable Finance Lab.

AERESS. (2020). Análisis de la generación de empleo de calidad entre colectivos desfavorecidos en las actividades de reutilización y gestión de residuos: La contribución de los recuperadores de economía social a los ODS. Ministerio de Trabajo, Migraciones y Seguridad Social.

Bairagi, N. (2018). Recycling of Post-Consumer Apparel Waste in India: Channels for Textile Reuse. *Journal of Textile Science & Engineering*, 08(01). <https://doi.org/10.4172/2165-8064.1000331>

CBS. (2022). More shops for the first time in years. <https://www.cbs.nl/en-gb/news/2022/18/more-shops-for-the-first-time-in-years>

Changing Markets Foundation. (2023). Trashion: The stealth export of waste plastic clothes to Kenya. www.changingmarkets.org

Clean Clothes Campaign. (2020). Another wage is possible: A cross-border base living wage in Europe. –Clean Clothes Campaign. https://cleanclothes.org/file-repository/ccp_policy-paper_eng-23nov.pdf/view

Common Objective. (2018). Faces and Figures: Who Makes Our Clothes? Common Objective. <https://www.commonobjective.co/article/faces-and-figures-who-makes-our-clothes>

Drost, F. (2004). The decline of the Dutch textile industry. CBS Statistics Netherlands. <https://www.cbs.nl/en-gb/news/2004/05/the-decline-of-the-dutch-textile-industry>



-Ebert, I., Wilks, S., & Teufel, J. (2018). European textile industry and human rights due diligence: Key developments, human rights allegations & best practices. Business & Human Rights Resource Centre. <https://www.business-humanrights.org/en/sectors/apparel-textile>

Elia, V., Gnani, M. G., & Tornese, F. (2017). Measuring circular economy strategies through index methods: A critical analysis. *Journal of Cleaner Production*, 142, 2741–2751. <https://doi.org/10.1016/J.JCLEPRO.2016.10.196>

Guldman, E. (2016). Best practice examples of Circular Business Models (No. 9788793435865). Danish Environmental Protection Agency.

Henry, M., Bauwens, T., Hekkert, M., & Kirchherr, J. (2020). A typology of circular start-ups: An Analysis of 128 circular business models. *Journal of Cleaner Production*, 245, 118528–118528. <https://doi.org/10.1016/J.JCLEPRO.2019.118528>

ILO. (2019). The future of work in textiles, clothing, leather and footwear.

ILO. (2020). COVID-19 and global supply chains: How the jobs crisis propagates across borders. https://www.wto.org/english/news_e/pres20_e/pr855_e.htm.

International Labour Organization. (2014). Wages and Working Hours in the Textiles, Clothing, Leather and Footwear Industries (No. 9789221287735). www.ilo.org/publns.

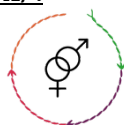
Jung, S., & Jin, B. (2016). Sustainable Development of Slow Fashion Businesses: Customer Value Approach. <https://doi.org/10.3390/su8060540>

Labfresh. (2019). The Fashion Waste Index. <https://labfresh.eu/pages/fashion-waste-index>

Manshoven, S., Smeets, A., Malarciuc, C., Tenhunen, A., & Mortensen, L. F. (2022). Microplastic pollution from textile consumption in Europe

<https://www.researchgate.net/publication/358500880>

Metabolic. (2021). Creating a circular and regenerative textile sector. www.circularinnovationcollective.nl/.



Millar, N., Mclaughlin, E., & Börger, T. (n.d.). The Circular Economy: Swings and Roundabouts?

Ministry for Infrastructure and Water Management. (2017). National Agreement on the Circular Economy Letter of intent to develop transition agendas for the Circular Economy together Partners.

Ministry of Infrastructure and Water Management. (2020). C-233 Green Deal on Circular Denim 'Denim Deal'.

Ministry of Infrastructure and Water Management. (2021). Updated Circular Economy Implementation Programme 2021-2023.

<https://www.government.nl/topics/circular-economy/documents/reports/2021/10/21/updated-circular-economy-implementation-programme-2021-2023-summary>

Noor, F., Peters, S., Stingelin, N., & Smith, P. (2008). Going against the Grain: The Dematurity of the European textile industry.

<https://www.researchgate.net/publication/237377549>

PACE. (2021). Circular Economy Action Agenda: Textiles.

Papú Carrone, N., Sosa Lagunes, L., van Duijn, H., Wilting, J., Novak, M., Metta, J., Goesaert, T., & Bachus, K. (2021). Putting Circular Textiles to Work.

Peters, G., Li, M., & Lenzen, M. (2021). The need to decelerate fast fashion in a hot climate—A global sustainability perspective on the garment industry. *Journal of Cleaner Production*, 295. <https://doi.org/10.1016/J.JCLEPRO.2021.126390>

Priya, S., & Gupta, S. (n.d.). THE STATE OF INFORMAL WASTE WORKERS IN INDIA.

Šajn, N. (2022). Right to repair. European Parliamentary Research Service.

Stahel, W. R., & Clift, R. (2015). Stocks and flows in the performance economy. *Taking Stock of Industrial Ecology*, 137–158. https://doi.org/10.1007/978-3-319-20571-7_7/FIGURES/5



Roy Choudhury, A. K. (2014). Environmental Impacts of the Textile Industry and Its Assessment Through Life Cycle Assessment. 1-39. https://doi.org/10.1007/978-981-287-110-7_1

Saja, N (2019). Environmental impact of textile and clothes industry. European Parliamentary Research Service.

Statista Research Department. (2022). Global: Fashion consumer spending per capita 2021 | Statista. Statista. <https://www.statista.com/forecasts/1156462/real-fashion-consumer-spending-per-capita-by-country>

Suarez-Visbal, L., Stuckrath, C., & Rosales Carreón, J. (2022a). Assessing through a gender-inclusion lens the social Impact of circular strategies in the Apparel Value Chain: The Dutch case

Suarez-Visbal, L. J., Carreón, J. R., Corona, B., & Worrell, E. (2022b). The Social Impacts of Circular Strategies in the Apparel Value Chain; a Comparative Study Between Three Countries. Circular Economy and Sustainability. <https://doi.org/10.1007/s43615-022-00203-8>

Suarez-Visbal, L., Stuckrath, C., & Rosales Carreón, J. (2023) Circular Economy: An overview of global trends, challenges and opportunities. In Accelerating Sustainability in Fashion Apparel & Textiles. Chapter 22. April 2023

WTO. (2022). World Trade Statistical Review 2022. World Trade Organisation. https://www.wto.org/english/res_e/publications_e/wtsr_2022_e.htm

