Life after fast fashion

Just transition to sustainable clothing and textiles industry

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Finnwatch

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1. Introduction

Resolving the climate crisis and decline in biodiversity will require significant changes to the manner in which materials and energy are used. This will also mean a change to what kinds of products or services are used to fulfil needs. As a result, workplaces and global production structures are under unprecedented pressure to change. In order for the solution to exceeding our planetary limits to be socially sustainable, a just transition must be taken into consideration from the beginning. The need for a just transition was first recognised in fossil energy production, such as coal mines and plants, but the principle must rapidly be understood more extensively.

The clothing and textile industry is an example of a sector where there are significant environmental and labour impacts which make it susceptible to social problems during the transition. With regard to the clothing and textile industry, we often speak about fast fashion, meaning that people purchase an abundance of clothing and use single pieces very little.

According to a study by the European Environment Agency, Europeans consume more textiles than previously, although a smaller portion of one's income is used for these. The average European consumer buys an estimated 26 kilogrammes of textiles each year,[1] Correspondingly, the number of times a person wears a piece of clothing over the same time period has decreased by around one third. Consumers waste up to 460 billion dollars of clothing value each year by throwing away clothing that could still be used.[2]

Globally, emissions alone make the clothing and textile industry an environmental problem. The industry accounts for an estimated 4%-10%[3] of all greenhouse gas emissions. In addition to greenhouse gas emissions, the clothing and textile industry uses substantial amounts of natural resources, land surface and water, as well as causes emission e.g. wastewater.[4]

1 European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 11 and 22, available online at: https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy

2 Ellen MacArthur Foundation, 2017, A New Textiles Economy: Redesigning Fashion's Future, p. 18–19, available online at: https://ellenmacarthurfoundation.org/a-new-textiles-economy

3 Management consulting firm McKinsey has estimated that the emissions for the industry's entire value chain amount to around 2.1 gigatonnes, meaning 4% of global emissions: McKinsey, 2020, Fashion on Climate, p. 5, available online at: https://www.mckinsey.com/~/ media/mckinsey/industries/retail/our%20insights/fashion%20on%20climate/fashion-on-climate-full-report.pdf; Sustainability consulting firm Quantis in turn has estimated that excluding emissions for period of use, the clothing industry's emissions are around 3.3 gigatonnes, which is approximately 7% of total global emissions: Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 18, available online at: https://quantis-intl.com/wp-content/ uploads/2018/03/measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf; The UN Environment Programme (UNEP) mentions 8%-10% on their website: UNEP, 2019, UN Alliance For Sustainable Fashion addresses damage of 'fast fashion', https://www.unep.org/news-and-stories/press-release/un-alliance-sustainable-fashion-addresses-dama- ge-fast-fashion (viewed on 8 September 2021)

4 For more information on the clothing and textile industry's environmental impacts see Chapter 2.1 and its box.

Just as is the case with the industry's environmental impacts, the social impacts of the ecological transition will be both local and global. However, the measures related to mitigating environmental impacts are still in their infancy. The global transition from fossil fuels to emission-free energy production, which is slowly getting underway, will help somewhat, in addition to which there has been talk of various means for promoting a circular economy or for changing the consumer culture so there is a preference for rental and repair services.[5] In the future, an increase in the efficiency of necessary recycling processes and a change in consumer behaviour will cause negative employment impacts in both the clothing industry's traditional production and consumer countries.

According to the World Social Report published by the UN Department of Economic and Social Affairs (DESA) in 2020, a just transition to a green economy will require the integration of climate measures with labour and social policy, education and "adequate support for those who will be harmed".[6] A just transition has thus far materialised as a need for additional training caused by the change in the nature of work, in cases such as when fossil-based energy jobs decrease and jobs in renewable energy production increase. However, in the case of fast fashion, a just transition may be far more complex than modification training, as in addition to production method changes, decreasing the environmental strain caused by fast fashion may also require measures that will cause the overall demand for clothing to decrease. In this case, it won't just be a matter of one type of jobs becoming another type, but perhaps of jobs moving from Asian production countries to places near the consumer in the form of rental and repair services or even employment in the entire global sector falling.

A just transition is a corporate responsibility issue. Companies must bear responsibility for the adverse human rights impacts of climate change by radically reducing their greenhouse gas emissions and by supporting adaptation to climate change. However, emission reductions in accordance with climate science alone are not sufficient to cover their human rights responsibility. In the implementation of the measures required by climate science, human rights must be respected and adequate human rights due diligence undertaken. This means that companies cannot ignore such things as impacts on workers in their value chains when reducing emissions. Although States play a critical role in ensuring the just transition, companies must, where necessary, use their influence to promote a transition that respects human rights.[7]

5 Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

6 UN DESA, 2020, World Social Report 2020: Inequality in a Rapidly Changing World, p. 8, available online at: https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-FullReport.pdf

7 Finnwatch, 2021, Yritysten vastuu ilmastosta ja oikeudenmukaisesta siirtymästä, available online at: https://finnwatch.org/fi/julkaisut/oikeudenmukainen-siirtyma

This report examines the clothing and textile industry's transition and the responsibility of companies for a just transition. The next chapter examines the clothing and textile industry's global state, climate emissions and development trends. Chapter three covers the circular economy as a means for reducing the environmental impacts of the clothing and textile industry. Chapter four describes the principles of a just transition. Chapter five assesses what types of impacts the clothing and textile industry's sustainability revolution will have, and the starting points and readiness the clothing and textile industry's important production countries located in the global south have to weather this revolution. Chapter six examines the responsibility of clothing and textile companies for a just transition in the sector.

2. The climate crisis necessitates changes in the clothing and textile industry

The value chains for apparel and textiles are long and global. The end product the consumer gets originated from raw material production, such as the cultivation of cotton, from where it proceeded to the production of thread, the production of a textile, the production of a piece of clothing and then was sold. One or more companies may be responsible for every single stage of this process. Especially the start of the production chain can be divided into numerous chains, in which case there might be dozens of companies involved in the production of a single piece of clothing and its related logistics.

The clothing and textile industry has grown substantially over the past decades: it is estimated that global consumption more than doubled between 1975 and 2018, and that production has about doubled since 2000. The sector is expected to continue to grow. This growth is in part possible because the clothing bought is used fewer times than previously. Used products often end up as textile waste, of which 92 million tonnes is created globally each year.[8]

A report by the Ellen McArthur Foundations estimates that taking into consideration the value chain, the annual value of the clothing industry alone is 1,300 billion dollars, and its employment impact is 300 million jobs.[9] WTO's statistics indicate that in 2020 the value of

8 Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

9 Ellen MacArthur Foundation, 2017, A New Textiles Economy: Redesigning Fashion's Future, p. 36, available online at: https://ellenmacarthurfoundation.org/a-new-textiles-economy

the international trade of apparel and textiles totalled nearly 800 billion dollars. Of individual countries, China was the most significant accounting for one third of international trade.

Other significant producers included Bangladesh, the EU, India, Turkey and Vietnam.[10] According to statistics service Statista, second hand clothing accounted for around 2% of clothing trade.[11]

The EU is a significant actor in both production and consumption. According to an estimate by Euratex, the voice of the European clothing and textile industry, the EU clothing and textile industry's turnover is 162 million euros, and the sector is estimated to employ 1.5 million people in the European Union in approximately 160,000 different companies. Consumption is considerably greater in the EU area than production, as the export of apparel and textiles from the union in 2019 was 61 billion euros in value, while imports were 109 billion euros in value.[12]

In Finland, the clothing and textile industry is believed to employ around 18,000 people, half of whom are in wholesale and retail, around 35% in production and around 15% in apparel and textile maintenance positions. In 2019, the industry's turnover in Finland was 3.95 billion euros.[13]

Around 120,000 tonnes of apparel and textiles are imported to Finland each year.[14] In 2020, imports were estimated to be around 2.3 billion euros in value, of which clothes accounts for around 1.4 billion euros. China is by far the most notable country of import accounting for 38% of imports. It is followed by Bangladesh with 7%, Turkey and Germany with around 5% and Sweden with around 4%. Export is substantially smaller, totalling 551 million euros in value, and the majority is exported to European countries. The disparity between imports and exports grew between 2006 and 2020, as the import of apparel and textiles grew by 25% over this period, whereas exports declined by 13%.[15]

10 Searched for from the WTO Data Service at: https://stats.wto.org/; Euratex, 2020, Facts & Key Figures of the European Textile and Clothing Industry, p. 21–22, available online at: https://euratex.eu/wp-content/uploads/EURATEX-Facts-Key-Figures-2020-LQ.pdf

11 Statista, 2022, Global Apparel Market - Statistics & Facts, https://www.statista.com/topics/5091/apparel-market-worldwide/#dossierKeyfigures (viewed on 22 January 2022)

12 Euratex, 2020, Facts & Key Figures of the European Textile and Clothing Industry, p. 6, available online at: https:// euratex.eu/wp-content/uploads/EURATEX-Facts-Key-Figures-2020-LQ.pdf

13 Suomen Tekstiili & Muoti, Tekstiili- ja muotiala Suomessa, p. 4, available online at: https://stjm.s3.eu-west-1.amazo-naws.com/uploads/20210528095105/stjm.fi-Yritystilastot-28.5.2021.pdf

14 Dahlbo et al., 2021, Textile Flows in Finland 2019, p. 21, available online at: https://julkaisut.turkuamk.fi/isbn9789522167873.pdf

15 Suomen Tekstiili & Muoti, Tekstiilin ja muodin tavaravienti ja tuonti, https://app.powerbi.com/view?r=eyJrIjoiMTA1NzA5MmYtMTNkYi00NzhjLWJkYjktMmJlYjY1Njc0MWI3IiwidCI6IjZlOTVmZjE2LWU5NjUtNDljMC05ZGI2LTZiNjg4ZDJjZDhmZSIsImMiOjh9 (viewed on 15 June 2021)

Per capita the amount of money used on clothing and textiles more than doubled between 1993 and 2011, but has more recently stabilised at just over 800 euros a year. In 2019, a total of 4.1 billion euros was used on clothing and 0.5 billion euros on household textiles.[16] Per capita these sums are the European average.[17]

The most recent statistical publication by Statistics Finland indicates that household-specific expenditure for clothing has increased in 2001-2016 by around 27%, which is somewhat in line with the general increase in consumer expenditure, whereas the amount of money used on household textiles has remained nearly the same. Expenditure in the class including "washing, production and rental of clothing" has decreased by over one third and, in 2016, accounted for about 1% of the sum used on clothing.[18]

2.1 Climate impacts of clothing and textile industry are considerable

Globally, the textile industry is believed to be a very notable source of emissions. Estimates vary depending on what all product groups are included, as well as on whether only production or also use and end of use emissions are taken into consideration. Typically, the clothing and textile industry's share of global emissions is believed to be around 4%-10%.[19]

For example, consultancy firm McKinsey has estimated that the fashion industry's emissions were 2.1 billion tonnes in 2018. Of this, 71% were created by production, 6% by transport and retail sale, and the remaining 23% by use and discarding clothing and textiles from use. According to the estimate, the 1.5°C target would require the industry

16 Suomen Tekstiili & Muoti, Suomalaisten rahankäyttö vaatteisiin, jalkineisiin ja kodintekstiileihin, https://app.powerbi.com/ view?r=eyJrIjoiYzFkMTU0MGUtNTFmYS00ZjI0LWFmZDEtZWE0Yzk5MzViYTE2IiwidCI6IjZlOTVmZjE2LWU5NjUtNDljMC05ZGI2L- TZiNjg4ZDJjZDhmZSIsImMiOjh9&pageName=ReportSection3e131136bdcd3d87c747 (viewed on 15 June 2021)

17 Suomen Tekstiili & Muoti, Rahankäyttö vaatteisiin, jalkineisiin ja kodintekstiileihin eri Euroopan maissa, https://app.powerbi.com/view?r=eyJrIjoiNzVkY2M0MzMtY2ZiMS00YmYyLWE1ZDMtYWU2NDQ0MzczNjVmIiwidCI6IjZlOTVmZjE2LWU5NjUtNDljMC05ZGI2LTZiNjg4ZDJjZDhmZSIsImMiOjh9 (viewed on 15 June 2021)

18 Statistics Finland, Kotitalouksien kulutusmenot kotitaloustyypin mukaan 1985-2016

19 Management consulting firm McKinsey has estimated that the emissions for the industry's entire value chain amount to around 2.1 gigatonnes, meaning 4% of global emissions: McKinsey, 2020, Fashion on Climate, p. 5, available online at: https://www.mckinsey.com/~/ media/mckinsey/industries/retail/our%20insights/fashion%20on%20climate/fashion-on-climate-full-report.pdf; Sustainability consulting firm Quantis in turn has estimated that excluding emissions for period of use, the clothing industry's emissions are around 3.3 gigatonnes, which is approximately 7% of total global emissions: Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 18, available online at: https://quantis-intl.com/wp-content/uploads/2018/03/ measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf; The UN Environment Programme mentions 8%-10% on their website: UNEP, 2019, UN Alliance For Sustainable Fashion addresses damage of 'fast fashion', https://www. unep.org/news-and-stories/press-release/un-alliance-sustainable-fashion-addresses-damage-fast-fashion (viewed on 8 September 2021); different estimated on climate impacts are also discussed by Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

to halve its emissions by 2030, but without further measures, emission are expected to grow around 30%.[20]

The same report by McKinsey estimated the size and price of emissions cuts achieved with different measures. The most considerable emissions cuts would be possible to achieve in production by implementing measures such as improving energy efficiency and increasing the use of emission-free energy, and by improving the effectiveness of raw materials production e.g. by reducing the use of fertilisers and pesticides in cotton production. Substantial cuts could also be achieved by reducing the overproduction of clothing[21] and by decreasing the washing and machine drying of clothing in their use phase.[22]

The environmental impact and future of the clothing and textile industry in Finland were examined in the roadmap report Hiilineutraali tekstiiliteollisuus ('A carbon-neutral textile industry') published in 2020.[23] According to the assessment, which focused on emissions that are produced within Finland's borders, emissions from the clothing and textile industry totalled around 59,300 tonnes in 2018, meaning 0.1% of Finland's national emissions. However, it must be noted that the majority of the sector's emissions are produced in value chains that extend abroad. A report that examined the Finnish clothing and textile industry's global climate emissions in 2021, estimated that the total lifecycle emissions of domestic production of clothing and textiles and the clothing and textiles imported to Finland are around 1,689,000 tonnes.[24] In this report commissioned by Finnish Textile and Fashion and written by consulting firm Clonet, the share of emissions emitted during the production stage was estimated to be notably larger (89%) than the aforementioned assessment by McKinsey indicated (71%).

Without separate measures, the clothing and textile industry emissions created within Finland's borders are estimated to be cut in half by 2050 due, in particular to the increased availability of cleaner energy production. The sector's own emissions cut measures such as the improvement of energy efficiency, the introduction of electric vehicles in logistics, the termination of oil heating and a transition from natural gas to biogas in their own energy production could make it possible to cut national emissions to a tenth of

20 McKinsey, 2020, Fashion on Climate, p. 5–7, available online at: https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/fashion%20on%20climate/fashion-on-climate-full-report.pdf

21 According to the report, 40% of clothing is sold at a discounted price due to overproduction. This amount could be decreased e.g. by developing warehouse control and by better anticipating changes in demand.

22 McKinsey, 2020, Fashion on Climate, p. 18, available online at: https://www.mckinsey.com/~/media/mckinsey/ industries/retail/our%20insights/fashion%20on%20climate/fashion-on-climate-full-report.pdf

23 Gaia, 2020, Hiilineutraali tekstiiliala -tiekartta, p. 18–20, available online at: https://stjm.s3.eu-west-1.amazonaws. com/uploads/20200610133352/STJM-Hiilineutraali-tekstiiliala-tiekartta_FINAL.pdf

24 Suomen tekstiili ja muoti, 2021, Suomalaisen tekstiili- ja muotialan globaalit ilmastovaikutukset, p. 36, available online at: https://stjm.s3.eu-west-1.amazonaws.com/uploads/20211210112303/Suomalaisen-tekstiili-ja-muotialan-globaalit-il- mastovaikutukset_final.pdf

what they are currently. The compensation of these emissions could allow the sector to achieve carbon neutral status in 2035, at the same time with Finland's national target for a carbon neutral society.[25]

The environmental load of the clothing and textile industry can also be examined from the perspective of consumption emissions. In a report on the emissions related to consumption by Finns, it was estimated that in 2016 the clothing and footwear purchases of each Finn resulted in an average of 262 kilogrammes in emissions, which is equal to about 3% of Finland's per capita emissions. Based on the figures used in the report, it can also be estimated that clothes alone account for 90% of emissions meaning 235 kilogrammes.[26]

It has been estimated that the 1.5°C climate target means that emissions from Finnish consumption must be cut from the current ten tonnes a year to 2.5 tonnes by 2030, to 1.4 tonnes by 2040 and to 0.7 tonnes by 2050. On the other hand, it should be noted that these figures are based on the even division of the global carbon budget which only has a 50% probability of restricting warming to 1.5°C.[27] When we set the carbon budget from the IPCC's most recently published report from August 2021, which could restrict warming to 1.5°C with a certainty of 83%[28] as the starting point, weighted by the ability to pay (i.e. GDP)[29], emissions from Finnish consumption should be cut to zero in just a few years[30].

Different measures can be taken to influence the emissions of Finland's clothing and textile industry. The greatest emissions cuts could be achieved by using clothing twice as many times thus reducing the need for new clothing (a 46% reduction) and by transitioning to renewable energy in production (a 40% reduction). If all virgin cotton and polyester was replaced with recycled fibres, the emissions from value chains could decline by

25 Gaia, 2020, Hiilineutraali tekstiiliala-tiekartta, p. 29, available online at: https://stjm.s3.eu-west-1.amazonaws.com/

26 Finnish Environment Institute, 2019, Julkisten hankintojen ja kotitalouksien kulutuksen hiilijalanjälki ja luonnonvarojen käyttö, p. 33 and p. 59, available online at: https://helda.helsinki.fi/bitstream/handle/10138/300737/SYKEra_15_2019_korjattu_26_02_2020.pdf?sequence=4&isAllowed=y

27 Sitra, 2019, 1,5 asteen elämäntavat: Miten voimme pienentää hiilijalanjälkemme ilmastotavoitteiden mukaiseksi?, p. 21, available online at: https://media.sitra.fi/2019/05/15135519/1o5-asteen-elamantavat.pdf

28 IPCC, 2021, Climate Change 2021: The Physical Science Basis: Summary for Policymakers, p. 29, available online at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf

29 Intergovernmental Panel on Climate Change (IPCC), 2019, An approach to nationally determined contributions consistent with the Paris Agreement and climate science: Application to Finland and the EU, p. 13, available online at: https://www.ilmastopaneeli.fi/wp-content/ uploads/2019/10/Finlands-globally-responsible-contribution_final.pdf

30 In August 2021, the IPCC estimated that at the beginning of 2020 there was only 300 gigatonnes left in the carbon budget that would limit warming to 1.5°C. In 2020 and 2021, we used 80 gigatonnes of this. When the remaining 220 gigatonnes is divided with a method used by the national climate panel that takes into account the ability to pay (i.e. GDP), the carbon budget for each Finn is just over eight tonnes. At the current rate, the average Finn would use their budget in less than a year.

19%, However, the report finds that this cannot be achieved quickly due to the limited availability and suitability of recycled fibres.[31]

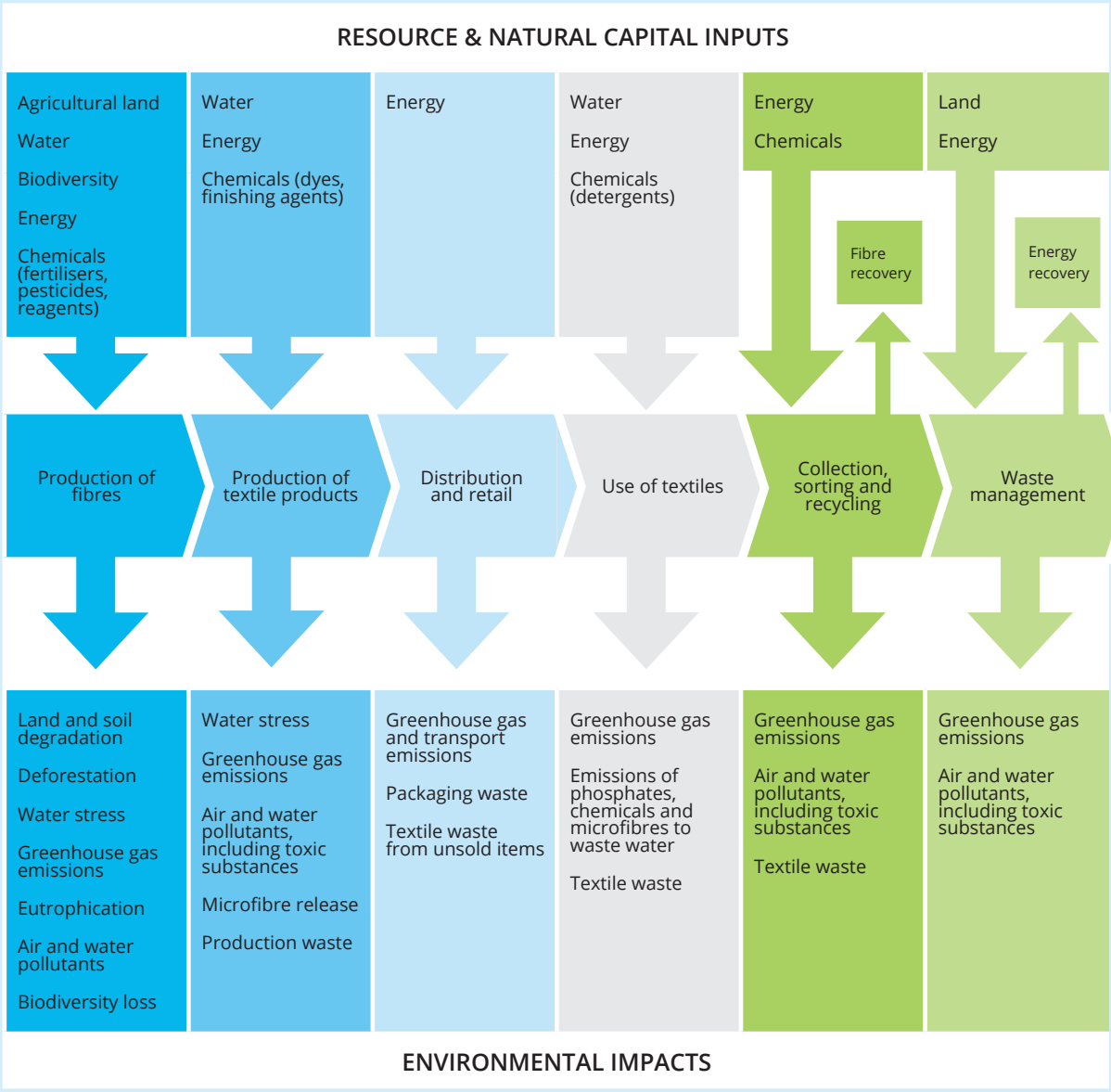
The following sections will introduce concepts and projects in the scope of which an effort has and is being made to reduce the industry's emissions. These include company-specific climate objectives as well as various other programmes and initiatives for the reduction of emissions. Chapter three gives more detail on the circular economy, under the scope of which a large number of tangible measures fall.

31 Suomen tekstiili ja muoti, 2021, Suomalaisen tekstiili ja muotialan globaalit ilmastovaikutukset, p. 46–47, available online at: https://stjm.s3.eu-west-1.amazonaws.com/uploads/20211210112303/Suomalaisen-tekstiili-ja-muotialan-globaalit-ilmastovaikutukset_final.pdf

Local environment impacts of the clothing and textile industry

The value chain for apparel and textiles is long, and each phase – production, use and discarding from use – involves use of natural and other resources and causes differing environmental impacts. Due to the sector's production structures, the impacts are greatest in developing countries.[32]

FIGURE 1: Environmental impacts of textile products at different stages of the value chain



Natural resources are consumed and the environment is polluted at every stage of the textiles value chain. (European Environment Agency, 2019, Textiles and the environment in a circular economy)

32 Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

The global clothing and textile industry uses an enormous amount of water for example in the production of fibres (especially in the irrigation of cotton plantations) and in the production of end products (especially when dyeing). It is estimated that during production the industry consumes 215 billion cubic metres of water each year.[33] Water use also means that production results in wastewater, which is then, at its worst, discharged untreated back into bodies of water. The NGO Water Witness has recently initiated a discussion on the topic in Africa's growing textile industry.[34]

The production and distribution of apparel, footwear and textiles consumed in the EU, result in the use of an average of approximately 1,300 kilogrammes of natural resources per person, when taking into consideration the infrastructure needed for the production chain. These natural resources include fossil fuels, fertilisers, minerals and metals and biomass, but water use has been calculated separately from these (see following paragraph). Compared to other product groups, the use of natural resources in the production of apparel, footwear and textiles is mostly located outside the EU, as only 15% of natural resources use is located in the EU.[35]

The water use in the apparel and textiles production chain has been estimated separately from other natural resource use, and it is believed to be around 104 cubic metres per EU resident each year.

In addition to the use of water and other natural resources, the use of clothing, footwear and textiles also takes up land surface, around 700 square metres of land surface per EU

resident. The consumption of water and land surface is even more heavily concentrated to the areas outside the EU than the consumption of natural resources, as only 10% of water and land consumption is in the EU area.[36]

Hundreds of different chemicals are used in the clothing and textile industry's value chain starting from fertilisers and pesticides used in cotton production and continuing to dye in production and then detergents during the use phase. Some of these chemicals end up in wastewater and are discharged in the surrounding environment, which causes pollution and health problems. The microfibres and microplastics that break off from synthetic textiles in the wash have also been recognised to be problematic.[37]

33 Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 23, available online at: https://quantis-intl.com/wp-content/uploads/2018/03/measuringfashion_globalimpactstudy_full-re- port_quantis_cwf_2018a.pdf

34 Water Witness, 2021, How Fair is Fashion's Water Footprint?, available online at: https://waterwitness.org/news-events/2021/7/12/how-fair-is-fashions-water-footprint

35 European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 19, available online at: https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy

36 European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 20 -21, available online at: https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy

37 CDP, 2020, Interwoven risk is, untapped opportunities: The business case for tackling water pollution in apparel and textile value chains, p. 7–9, available online at: https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/005/367/original/CDP_Water_Apparel_Report_September_2020.pdf?1602059378

In addition to the production chain the apparel and textile use phase stresses the environment through energy use, water use and wastewater. Discarding clothes from use in turn causes textile waste, which in the best case scenario ends up in recycling and at worst is burnt or becomes completely unused waste in e.g. developing countries.[38] Even when clothing ends up via recycling to reuse, this phase also causes stress to the environment at least in the form of logistics.

2.2 Climate action by clothing companies is insufficient

In companies, climate measures are usually initiated by drawing up climate objectives, which can take the form of emission cuts to reach a certain level of emissions (i.e. share of current emissions), or to reach carbon neutrality via combination of emission cuts and offsetting. Especially in recent years, net zero has become an increasingly common corporate climate target. A net zero target combines science-based emissions cut paths and offsetting of the residual emissions by removing carbon from the atmosphere.[39]

Especially in the clothing and textile industry, where the value chains are long and complex, it is essential to clearly define which of a company's emissions are included within the company's objective. When discussing a company's emissions, the GHG Protocol Corporate Standard's definitions of scope 1, 2 and 3 emissions are usually used. Scope 1 includes direct emissions from a company's own activities, scope 2 the emissions from the production of energy purchased by the company, and scope 3 emissions from the value chain. Scope 3 is further divided into so-called upstream and downstream emissions, depending on whether the emissions are created in the company's production chain (upstream) or when its products are used or discarded from use (downstream).[40]

How the emissions are actually divided between these different scopes depends on the sector in question.[41] For example, scope 1 emissions from a company's own activities can vary a great deal: In 2020, the scope 1 emissions for the Finnish airline Finnair, which burns an enormous amount of fossil fuels, was around 82% of all the company's scope

38 Nordic Council of Ministers, 2016, Exports of Nordic Used Textiles: Fate, benefits and impacts, available on line at: http://norden.diva-portal.org/smash/get/diva2:1057017/FULLTEXT03.pdf; Al Jazeera, 2021, Chile's desert dumping ground for fast fashion leftovers, https://www.aljazeera.com/amp/gallery/2021/11/8/chiles-desert-dumping-ground-for-fast- fashion-leftovers (viewed on 20 January 2022)

39 Finnwatch, 2021, Kaikki haluavat nettonollaan, mutta mitä se oikeastaan tarkoittaa?, https://finnwatch.org/fi/tutkimukset/887-kaikki-haluavat-nettonollaan,-mutta-mitae-se-oikeastaan-tarkoittaa (viewed on 29 November 2021)

40 GHG Protocol, 2015, Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, available online at: https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

41 Accenture, 2021, Reaching Net Zero by 2050, p. 9, available online at: https://www.accenture.com/_acnmedia/PDF- 164/Accenture-Europe-Research-Reaching-Net-Zero-by-2050.pdf#zoom=40

1-3 emissions[42], whereas the scope 1 emissions for the S Group, which sells products produced by other companies, were around one percent of all its emissions that same year[43].

The emissions of the apparel and textiles industry are also generally centred in supply as well as in the use of products after they are sold, meaning scope 3 emissions. For example, Levi Strauss & Co. states in their responsibility report that its scope 1 and scope 2 emissions together total just 0.55% of the company's overall emissions, and that the majority of emissions result from production (60%) and the use phase (28%), while the rest is divided between logistics and discarding from use, etc.[44]

Levi Strauss & Co. has set the target of reducing its scope 1 and 2 emissions by 90% from what they were in 2016 by 2025. The emissions from the products commissioned by the company, i.e. scope 3 upstream emissions will be reduced by 40% over the same period. The company's climate objective does not include so-called scope 3 downstream emissions, i.e. the emissions from the use phase of the clothing it sells. The most important measure for reducing scope 1 and 2 emissions from the company's own activities has been the transition to renewable energy, the share of which was already increased from 24% to 76% during the period 2016-2020 and the aim is 100% by 2025. As a result of this and other measures, scope 1 and 2 emissions have already decreased by 57%. On the other hand, the company has only managed to reduce the more significant subcontracting emissions by 14% from the level they were at in 2016. The modest cuts have been achieved by transitioning in part to more sustainable raw materials as well as with improvements to the electricity network at some production sites.

The most important tool for reducing scope 3 emissions is requiring emissions cut targets from the manufacturers of materials and clothing. According to the company, the most important suppliers have committed to reduce their emissions by 40%-60%, but the responsibility report does not specify the starting point or the time period for this to happen.[45]

The management of emissions throughout the value chain is an essential part of a company's climate responsibility. In November 2021, the United Nations Economic Commission for Europe (UNECE), highlighted the management and transparency of the supply chain as methods for identifying and reducing greenhouse gas emissions in the clothing

42 Finnair, 2021, Annual report 2020, p. 145–146, available online at: https://investors.finnair.com/~/media/Files/F/Finnair-IR/documents/fi/reports-and-presentation/2021/vuosikertomus-2020.pdf

43 S Group, 2021, Annual reports and responsibility reviews 2020, p. 55, available online at: https://s-ryhma.fi/talous-ja-hallinto/raportit

44 Levi Strauss & Co., 2021, 2020 Sustainability Report, p. 31 and p. 42–43, available online at: https://www.levistrauss.com/wp-content/uploads/2021/09/LSCo.-2020-Sustainability-Report.pdf

45 Levi Strauss & Co., 2021, 2020 Sustainability Report, p. 44, available at: https://www.levistrauss.com/wp-con- tent/uploads/2021/09/LSCo.-2020-Sustainability-Report.pdf

and textile industry.[46] In addition, a policy recommendation it approved in February 2021 calls for governments to make political decisions that promote the transparency of the clothing and textile industry's value chain covering raw materials and production processes as well as financial and social responsibility.[47]

A Finnwatch survey to which a number of Finnish clothing and textile industry companies also responded, found that very few companies require emissions reporting or measures to cut emissions from their subcontractors. As emissions are not taken into account when concluding purchase agreements or selecting subcontractors, companies find it difficult to obtain reliable figures on emissions from subcontracting.[48] Typically, scope 3 emissions are calculated with a computing tool containing default values for the emissions of different materials. In Finland, Finnish Textile & Fashion, an organisation for the industry, provides this type of calculator to companies that have joined in its Hiilineutraali tekstiiliala 2035 (a carbon-neutral textile industry 2035) commitment.[49] Although statistical calculators in general increase the knowledge and understanding companies have of value chain emissions, they cannot tell companies their actual value chain's emission or encourage actors in the value chain to cut their emissions if actual data is not used.[50]

The management of emissions from subcontracting can be promoted with e.g. Amfori BEPI, which is intended for the monitoring and management of environmental impacts. Of Finland's clothing and textile sector companies Basic-Fashion, North Outdoor and Vallila among others are involved in the initiative, but its utilisation in the monitoring of greenhouse gas emissions from production plants is still rare.[51]

The procurement and investment decisions and other choices made by companies have a direct impact on what its scope 1 and 2 emissions and scope 3 upstream emissions will be. Companies also have the opportunity to influence their scope 3 downstream emissions with measures such as product development. Net zero targets usually require that

46 UNECE, 2021, Supply chain transparency could help the clothing industry significantly reduce its GHG emissions, https://unece.org/circular-economy/news/supply-chain-transparency-could-help-clothing-industry-significantly-reduce (viewed on 20 January 2022)

47 UNECE, 2021, Recommendation No. 46: Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector, p. 8, available online at: https://unece.org/sites/default/files/2021-04/ECE_TRADE_C_CEFACT_2021_10E_Rec46-Textile_0.pdf

48 Finnwatch, 2021, Päästövähennystoimet riskimaihin suuntautuvissa arvoketjuissa täysin riittämättömiä, https://finnwatch.org/fi/tutkimukset/895-paeaestoevaehennystoimet-riskimaihin-suuntautuvissa-arvoketjuissa-taeysin-riittaemaetto-emiae (viewed on 27 December 2021)

49 STJM, Mikä sitoumus?, https://www.stjm.fi/mika-sitoumus/ (viewed on 18 January 2022)

50 For information on problems in computing statistics see e.g. Finnwatch, 2019, Supply chains black as coal, available online at https://finnwatch.org/images/pdf/Supply_chains_coal_Finnwatch.pdf

51 Finnwatch, 2021, Päästövähennystoimet riskimaihin suuntautuvissa arvoketjuissa täysin riittämättömiä, https://finnwatch.org/fi/tutkimukset/895-paeaestoevaehennystoimet-riskimaihin-suuntautuvissa-arvoketjuissa-taeysin-riittaemaetto-emiae (viewed on 27 December 2021)

the emissions for the entire value chain be taken into account.[52] When these targets are set at quite a long interval, even decades into the future, it can be stated that the emissions from the entire value chain can be managed by the company.[53]

2.3 The clothing and textile industry's joint initiatives to cut emissions

In addition to independent measures by companies, various projects have been launched to encourage and guide emissions cuts. When companies speak of things such as science-based climate objectives, they are usually speaking about the Science Based Targets initiative. For example, targets set by Levi Strauss & Co, who were described in the previous chapter, are in accordance with this initiative.

The initiative was developed in a joint project between the Carbon Disclosure Project, which monitors climate reporting by companies, the UN's Global Compact Initiative, the World Resources Institute (WRI) and the World Wildlife Fund (WWF). In January 2022, a total of 2,392 companies had joined the system, of which 1,123 had set a target in accordance with the system, and the rest had committed to setting a target within the next two years. At least 152 clothing and textile sector companies have joined the system at least at the level of a commitment, in addition to which a large part of the 125 retail operators participating in the scheme produce or at least sell clothing.[54]

When a company joins the Science Based Targets (SBT) initiative it must set a climate target for the next 5 to 10 year period that covers emissions of the entire corporate group and meets the criteria of the initiative. This climate target must include emissions cuts that are aligned with the target of limiting global warming to 1.5°C or at least 2°C. In addition, more detailed guidance has been published for certain sectors. The clothing and textile industry's guidance for example has a separate section on how emissions from clothing's use phase (meaning washing related energy consumption emissions) can be taken into account, although this is not required. The guidance recommends measures related to communication concerning material selections and users which aim at reducing the washing of clothing. The guidance also highlights the STB targets of a few of the sector's companies as examples.

52 Finnwatch, 2021, Kaikki haluavat nettonollaan, mutta mitä se oikeastaan tarkoittaa?, https://finnwatch.org/fi/tutkimukset/887-kaikki-haluavat-nettonollaan,-mutta-mitae-se-oikeastaan-tarkoittaa (viewed on 29 November 2021)

53 Example The European Commission's Joint Research Centre (JRC) estimates that 80% of a product's environmental impacts are set in stone at the design phase: European Commission, Sustainable Product Policy, https://ec.europa.eu/jrc/en/research-topic/ sustainable-product-policy (viewed on 3 December 2021)

54 Finnwatch, 2021, Mitä on tieteenmukaisuus ilmastotavoitteissa?, https://finnwatch.org/fi/tutkimukset/897-mitae-on-tieteenmukaisuus-ilmastotavoitteissa? (viewed on 27 December 2021)

Even though a large part of the clothing and textile sector's emissions are created in the value chain, this does not mean that the SBT requires the sector's companies to reduce these emissions any more than companies in other sectors. In January 2022, children's clothing company Reima announced that it was the first Finnish clothing company to set SBT targets for itself.[55] Reima's objectives will be published later in 2022, once they have been approved by the SBT initiative.

For this report, Finnwatch reviewed the SBT targets set by clothing and textile sector companies. In January 2022 there were 63 such companies including Adidas, Hugo Boss, Ralph Lauren and Zalando[56]. The targets of nearly all these companies (59) have been assessed to be in compliance with the 1.5°C climate objective. Three of the companies had SBT targets that were classified as clearly below the 2°C targets.

The initiative's rules are considerably more demanding with regard to scope 1 and 2 emissions targets, so the Finnwatch review focused on scope 3 targets, which typically include the majority of the apparel and textile company emissions and for the setting of which the SBT gives more freedom.[57] The initiative does not require absolute cuts for scope 3 emissions, but rather the company's target can be set for example in relation to the amount of purchases it makes. In addition, the company can under some conditions select whether its scope 3 emissions target will cover just purchases or also emissions resulting from the use of the product.

Nearly half of the companies (30) had not set their scope 3 emissions target for absolute emissions, but in relation to some key financial figure related to their business operations, which does not mean cutting emissions according to a given percentage target or necessarily at all, if the company's activities grow rapidly. A total of 13 companies had set an absolute emissions cut target for some part of their scope 3 emissions, often in practice for the emissions from the production of purchased products. The remaining 20 companies had set either a common target for the absolute cut in all (scope 1, 2 and 3) emissions (11), or separate targets for cutting their scope 3 emissions and scope 1 and 2 emissions (9).

Of the 33 companies that had set an absolute target to cut at least part of their scope 3 emissions, only 11 had selected an emissions cut percentage, which met with or excee-

55 Reima, 2022, Reima sitoutuu Science Based Targets -päästövähennysaloitteeseen, https://www.sttinfo.fi/tiedote/reima-sitoutuu-science-based-targets--paastovahennysaloitteeseen?publisherId=69819147&releaseId=69929078 (viewed on 20 January 2022

56 Data in table format were downloaded from the Science Based Targets website (https://sciencebasedtargets.org/companies-taking-action) in which the class "Textiles, Apparel, Footwear and Luxury Goods" included 152 companies. Thus the data also includes companies that produce footwear, jewellery and perfumes, because these could not be separated from apparel and textile companies in SBT. 89 companies were removed from the group, which had committed to setting a SBT target, but had yet to do so, which left a group of 63 assessed companies.

57 Finnwatch, 2021, Mitä on tieteenmukaisuus ilmastotavoitteissa?, https://finnwatch.org/fi/tutkimukset/897-mitae-on-tieteenmukaisuus-ilmastotavoitteissa (viewed on 23 January 2022)

ded the annual rate of emissions cuts required by SBT for scope 1 and 2 emissions. Four of the companies had set a very modest rate for cuts in scope 3 emissions, meaning 2% a year or less.[58]

In practice, few of these companies have published any very clear plans for how they would cut their scope 3 emissions. For example, fashion house Burberry, which is one of the companies that has set an absolute target for scope 3 emissions cuts[59] mentions influencing its subcontractors in its responsibility report, which it did by providing guidance to manufacturers on the use of renewable energy.[60] Many other companies that have set targets in accordance with the SBTi also have concrete descriptions on completed and planned emissions cuts mostly only on scope 1 and 2 emissions.

Science Based Targets is also part of The Fashion Pact agreed during the 2019 G7 conference in France and signed by 77 clothing and textile sector companies including Armani, Burberry, Prada and Ralph Lauren. The companies that signed the pact committed to setting an SBT target and to achieving net-zero by 2050. In addition to the climate, the commitment's two other pillars are biodiversity and the state of the seas, the promotion of which will require measures to combat forest loss and decreasing the amount of plastic used in packaging.[61]

At the UN climate conference held in Poland's Katowice in 2018, actors in the clothing and textile sector also agreed on the sector's common vision according to which net-zero emissions will be achieved by 2050.[62] The Fashion Industry Charter for Climate Action has been signed by more than one hundred companies including some of the biggest players in the sector such as Adidas, H&M, Levi Strauss, Nike ja Primark[63].

The signatories committed to investigating, monitoring and reporting their emission and decreasing emissions throughout their value chain (scopes 1, 2 and 3) by at least 30% by 2030 using the year 2015 or a later year as their point of comparison. In addition, each

58 We have used the SBT calculation rules complying with a simple equation where the target percent is divided by the number of years. When taking into account the interest-on-interest phenomena, the actual annual cut percentages required by the targets are slightly smaller.

59 The company has two overlapping targets recorded for these emissions. Its responsibility report states that their aim is a 30% cut during the period 2016-2030, whereas the target specified in the SBT initiative is a cut of 46% during the period 2018-2029.

60 Burberry, 2021, Strategic Report: Environmental, Social and Governance, p. 85, available online at: https://www.bur- berryplc.com/content/dam/burberry/corporate/oar/2021/pdf/Burberry_2020-21_ESG.pdf

61 The Fashion Pact, 2020, First Steps to Transform Our Industry, available online at: https://thefashionpact.org/wp-content/uploads/2020/10/038906e111abca13dce4c77d419e4f21.pdf

62 UNFCCC, About the Fashion Industry Charter for Climate Action, https://unfccc.int/climate-action/sectoral-engagement/global-climate-action-in-fashion/about-the-fashion-industry-charter-for-climate-action (viewed on 8 September 2021)

63 UNFCCC, Participants in the Fashion Industry Charter for Climate Action, https://unfccc.int/climate-action/sectoral-engagement/global-climate-action-in-fashion/fashion-industry-charter-for-climate-action/participants-in-the-fashion-industry-charter-for-climate-action#eq-1 (viewed on 8 September 2021)

signatory committed to promoting circular economy models and to educating consumers in particular about the environmental impacts of textile use and discarding from use.[64]

In addition to their own measures, the signatories have committed to engaging in cooperation, which is carried out in working groups that focus on such things as raw materials, financing and retail.[65] The Fashion Industry Charter for Climate Action does not include a reporting or supervision mechanism, and it mainly focuses on emissions. For this reason, it does not contain clauses on the right of workers to a just transition.

In 2021, the UN Framework Convention on Climate Change and Textile Exchange, which promotes the more sustainable use of materials in the textile industry, challenged clothing and textile industry companies to increase the share of recycled polyester they used from 14% to 45% by 2025. Emissions resulting from recycled polyester are believed to be around 70% smaller than from virgin polyester. In order to achieve the campaign's objective globally, it is recommended that participating companies set their target for 80%-100% use of recycled polyester. At the launch phase, 85 brands were involved including Adidas, H&M and Helly Hansen.[66]

In Finland, an effort has been made to accelerate climate action in the clothing and textile sector with the Hiilineutraali tekstiiliala 2035 commitment launched in connection with the preparation of the sector's so-called roadmap. Currently, 22 companies[67] have committed to this including Image Wear, Novita and Uhana. The commitment requires carbon neutral activities by 2035 for the companies' own activities and the promotion of emissions cuts in their value chains. The programme provides training and support in areas such as calculating, cutting and compensating emissions to every party that has signed the commitment.[68]

The clothing and textile sector is aware of the enormous climate impacts caused by the sector and has begun setting company-specific emissions targets and launched various initiatives to reduce the sector's emissions. For the time being, a cross-cutting problem affecting these efforts has been that too little attention is given to the emissions caused by the subcontractors, which often account for the majority of the value chain's emissions, as opposed to the company's own direct emissions. This is apparent for example

64 UNFCCC, 2018, Fashion Industry Charter for Climate Action, available online at: https://unfccc.int/sites/default/files/resource/Industry%20Charter%20%20Fashion%20and%20Climate%20Action%20-%2022102018.pdf

65 UNFCCC, Fashion Industry Charter Working Groups, https://unfccc.int/climate-action/sectoral-engagement/global-climate-action-in-fashion/fashion-industry-charter-working-groups (viewed on 22 December 2021)

66 Textile Exchange, 2025 Recycled Polyester Challenge, https://textileexchange.org/2025-recycled-polyester-challenge/ (viewed on 30 December 2021)

67 STJM, Mukana sitoumuksessa, https://www.stjm.fi/palvelut-ja-tietoa-yrityksille/hiilineutraali-tekstiiliala-2035-sitoumus/mukana-sitoumuksessa/ (viewed on 5 July 2022)

68 STJM, Hiilineutraali tekstiiliala 2035, https://www.stjm.fi/toiminta-alueemme/vastuullisuus/hiilineutraalitekstiili/ (viewed on 28 December 2021)

in Finland as preparation of a roadmap for the sector which focused on domestic emissions. This criticism also holds for Science Based Targets initiative as well as the targets set within its scope. In order for the burden caused by the sector to genuinely decrease, action to reduce value chain emissions must be accelerated.

2.4 Other trends in the clothing and textile sector

The newest emerging trends recognised in the clothing and textile sector has been the move of production from China to either Africa or back to western countries caused by a rise in labour costs, an increase in the automation and digitalisation of the production chain and more intelligent consumption models such as clothing rental and a transition to fibres that are more ecologically produced.[69]

Putting the clothing and textile industry's environmental impacts on a path to sustainability will require that in addition to all other actions production and consumption are both cut back.[70] However, this is not yet the direction we are moving in. Rather, the benefits achieved with a circular economy and other measures to curtail climate and environmental impacts will be limited due to an expectation that the sector will still experience strong growth. For example, clothing production is expected to grow this decade by 2.7% each year (see more in Chapter 2).[71] After the sector recovers from the coronavirus pandemic, growth in the sector will be based on such factors as the growing incomes of the middle class in China and as a result increased consumption.[72]

The clothing and textile industry is quite labour driven and in recent decades production costs have become an increasingly important factor of competitiveness. Factories and production countries are constantly played off against one another, and instead of being produced at a textile or clothing brand's own production facilities, products are manufactured by subcontractors. Production does not typically require highly-educated labour and or local natural resources, so supplier chains can shift very quickly to new countries for example when pay levels change.[73]

69 Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 43-44, available online at: https://quantis-intl.com/wp-content/uploads/2018/03/measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf

70 Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

71 McKinsey, 2021, State of Fashion 2021, p. 66, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

72 McKinsey, 2021, State of Fashion 2022, p. 14, available online at:: https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf

73 See e.g. Perry, P. & Wood. p. 2019, Exploring the International Fashion Supply Chain and Corporate Social Responsibility: Cost, Responsiveness and Ethical Implications, in the book Logistics and retail management (Kogan Page), available online at: https://www.researchgate.net/publication/327345380_Exploring_the_International_Fashion_Supply_Chain_and_Corporate_Social_Responsibility_Cost_Responsiveness_and_Ethical_Implications

This sensitivity to change has been apparent in the way that China's share of international clothing exports dropped during the period 2010–2020 from 36.6% to 31.6% as wages rose in China.[74] Emerging production countries have included Bangladesh, Turkey and Vietnam, as well as more recently Ethiopia, Honduras and Cambodia[75]. A study by consulting firm Quantis published in 2018, concluded that one of the clothing and textile industry's trends is a shift of production to countries with lower labour costs or back to the global north, in which the sector's overall employment would drop due to automation and robotisation. Even so, the report by Quantis states that from an environmental viewpoint, it would be better if production didn't move to Africa but instead to countries where the regulation of environmental impacts is further along.[76]

In addition to the price level, the preparedness for disruptions caused by external shocks, such as the coronavirus pandemic, will have an impact on the location of subcontracting chains in the future[77]. On the basis of interviews conducted by consulting firm McKinsey with clothing and textile industry management, this may mean that companies will aim to enter into more established subcontracting contracts. The clothing and textile sector is quite susceptible to stoppages in its subcontracting chain caused by various external disruptions, such as pandemics, extreme weather conditions or natural disasters. We can separately mention the susceptibility of Vietnam and Bangladesh to periods of extreme heat and floods.[78] The role played by various binding corporate responsibility laws and import bans on products that are produced with forced labour, which will means that treading on labour rights in production countries could learn to economic or legal consequences is growing in the risk management of subcontracting chains.[79] Laws on human rights due diligence have been adopted in countries such as France and Germany, and

74 Statista, 2021, China's share of global apparel export value in selected years between 2000 and 2020, https://www. statista.com/statistics/1204141/china-share-of-global-clothing-exports/ (viewed on 9 February 2022)

75 McKinsey, 2021, State of Fashion 2021, p. 79-82, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

76 Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 43, available online at: https://quantis-intl.com/wp-content/uploads/2018/03/measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf

77 McKinsey, 2021, State of Fashion 2021, p. 79-82, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

78 McKinsey, 2021, State of Fashion 2022, p. 84, available online at: https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf; for information on the impacts of climate change to Bangladesh see e.g. Choi et al. 2021, Near-term regional climate change over Bangladesh, available online at: https://link.springer.com/article/10.1007/s00382-021-05856-z; for information on the impacts of climate change on Vietnam, see e.g. Asian Development Bank, 2020, Climate Risk Country Profile: Vietnam, available online at: https://www.adb.org/sites/default/ files/publication/653596/climate-risk-country-profile-viet-nam.pdf

79 Finnwatch, Yritysvastuulaki, https://finnwatch.org/fi/teemat/645-yritysvastuulaki (viewed on 27 December 2021)

the preparation of a similar law is underway[80] in the EU[81] as a whole. The import of products produced by forced labour is restricted by e.g. the United States[82] and Canada[83], and the EU is planning[84] a similar regulation.

The impacts of the coronavirus pandemic hit the Asian clothing and textile industry severely. Early on in the pandemic the sale of clothing decreased by 60%-70%, which meant that production closures and millions of employees were laid off or lost their jobs. According to a survey sent to Bangladeshi clothing producers at the end of March 2020, few producers who experienced cancelled orders were paid any compensation in the acute situation from their purchasers for such things as already procured materials and most producers in their own words were unable in the acute situation to support the income of the workers who had lost their jobs.[85]

In Bangladesh alone, an estimated one million textile industry workers were left unemployed[86], in addition to which the income of employed workers decreased by around 8%[87]. It has also been estimated that the pandemic interrupted a decrease in poverty in Bangladesh.[88]

80 Preparation of a national level law on human rights and environmental due diligence was also underway in Finland until in June 2022, it was announced that Finland would put the national level project on hold and focus on the EU level law instead.

81 European Commission, Sustainable corporate governance, https://ec.europa.eu/info/law/better-regulation/have-your-say/ initiatives/12548-Sustainable-corporate-governance_en (viewed on 27 December 2021)

82 US Customs and Border Protection, Forced labour, https://www.cbp.gov/trade/forced-labor (viewed on 21 January 2022)

83 Canada Border Services Agency, Goods manufactured or produced by prison or forced labour – Memorandum D9-1-6, available online at: https://www.cbsa-asfc.gc.ca/publications/dm-md/d9/d9-1-6-eng.html

84 Reuters, EU to propose ban on products made by forced labour - von der Leyen, https://www.reuters.com/article/eu-commission-labour-idAFS8N2O6018 (viewed on 21 January 2022). In May 2022, the European Commission opened a public consultation on the development of an EU instrument to ban forced labour goods in the EU. For more information see https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13480-Effectively-banning-products-produced-extracted-or-harvested-with-forced-labour_en

85 Anner, M., 2020, Abandoned? The Impact of Covid-19 on Workers and Businesses at the Bottom of Global Garment Supply Chains, PennState Center for Global Workers' Rights Research Report, p. 6, available online at: https://www.workersrights.org/wp-content/uploads/2020/03/Abandoned-Penn-State-WRC-Report-March-27-2020-1.pdf

86 Guardian, 2020, Primark and Matalan among retailers allegedly cancelling £2.4bn orders in 'catastrophic' move for Bangladesh, https://www.theguardian.com/global-development/2020/apr/02/fashion-brands-cancellations-of-24bn-orders-catast- rophic-for-bangladesh (viewed on 9 September 2021)

87 ILO, 2021, Opportunities for a Just Transition to environmental sustainability and COVID-19 recovery in the textile and garment sector in Asia, p. 15, available online at: https://www.ilo.org/asia/publications/WCMS_823229/lang--en/index.htm

88 BILS, 2021, The World of Work amid Covid Pandemic in Bangladesh: Trade Unions' Strategic Action Priorities, p. 11, available online at: http://bilsbd.org/wp-content/uploads/2021/10/World-of-Work-amid-Covid_TU-Strategic-Actions_April-2021_Revised.pdf

The exceptional conditions caused by the pandemic accelerated the transition of trade online even more than previously. According to the report by consulting firm McKinsey, the pandemic may also lead to the clothing and textile industry being able to increase the effectiveness of its value chain, by narrowing down its product range, decreasing the need for storage and by transitioning to production that more accurately meets demand by consumers. Due to the difficulties related to predicting consumer preferences, only about 60% of clothing is sold at its normal price.[89]

In Finland, a rough outline of the textile sector's future has been set out in publications such as 2020's Low-carbon Roadmap and 2021's Future Vision. The roadmap report assessed that the apparel and textile market may be divided into different segments on the basis of such factors as whether or not customers are prepared to pay more for products that are more sustainable for the climate.[90] All consumers may not therefore be prepared to pay more to ensure a company implements emissions cuts that are necessary for resolving the climate crisis.

A research report published in August 2021 by VTT Technical Research Centre of Finland (VTT), set out an outline of a future where "a responsible and knowledge-based textile industry will emerge in Finland". The Roadmap for 2035 paints a picture of Finland as a pioneer in the development of both cellulose-based textile fibres and recycled fibres. Finland could recycle up to one fifth of the textile waste generated in the EU. The realisation of this vision could create up to 16,900 new jobs in the value chain for Finland's textile sector. According to the vision, some production would remain abroad in the future in places such as Asia, but the technology created in Finland would be utilised there as well.[91]

The commission is expected to publish the EU's textile strategy in early 2022. The strategy is expected to include measures for the promotion of the sector's competitiveness and circular economy. The project's description also mentions the possibility of incentives for the development of sustainable business models and technologies as well as for the promotion of textile recycling and green public procurement.[92]

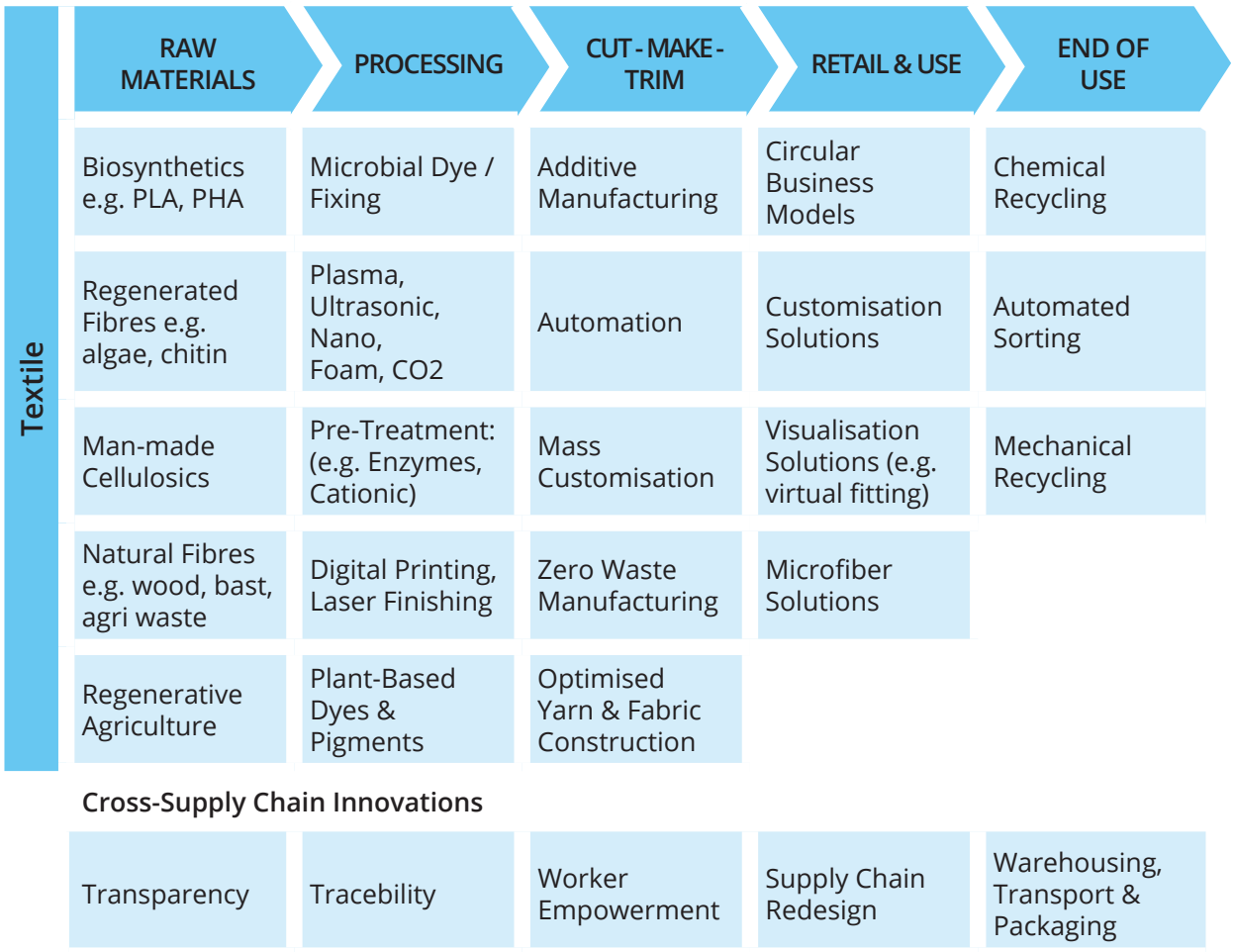
89 McKinsey, 2021, State of Fashion 2021, p. 10–17, p. 61–64 and p. 75, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

90 Gaia, 2020, Hiilineutraali tekstiiliala-tiekartta, p. 47, available online at: https://stjm.s3.eu-west-1.amazonaws.com/uploads/20200610133352/STJM-Hiilineutraali-tekstiiliala-tiekartta_FINAL.pdf

91 VTT, 2021, Finland as a forerunner in sustainable and knowledge-based textile industry – Roadmap for 2035, p. 6, 19, 21 and 27, available online at: https://cris.vtt.fi/ws/portalfiles/portal/52199670/Finland_as_a_forerunner_in_sustainable_and_kno- wledge_based_textile_industry_Roadmap_for_2035.pdf

92 European Commission, EU strategy for sustainable textiles, https://ec.europa.eu/info/law/better-regulation/have-your-say/ initiatives/12822-EU-strategy-for-sustainable-textiles_en (viewed on 9 February 2022)

FIGURE 2: Solutions brought about by new technology at different phases of the clothing and textile industry's value chain



Fashion For Good, 2019, Investing in Textile Innovation, p. 6, available online at: https://fashionforgood.com/wp-content/uploads/2019/10/FashionForGood_Investing-in-Textile-Innovation_October.pdf

3. The Circular Economy

Circular economy means an economic system, which is based on business models where the use of materials is reduced and materials are reused and recycled. A study which assessed 114 definitions of the circular economy used in literature found that there are differences in the definitions. At worst circular economy was used to refer to recycling only which ignores the systemic change that is critical for achieving the objectives typically set for the circular economy. According to researchers, a comprehensive definition of circular economy thus includes that its aim is pervasive, sustainable development that covers the environment's quality, economic wealth and societal equity.

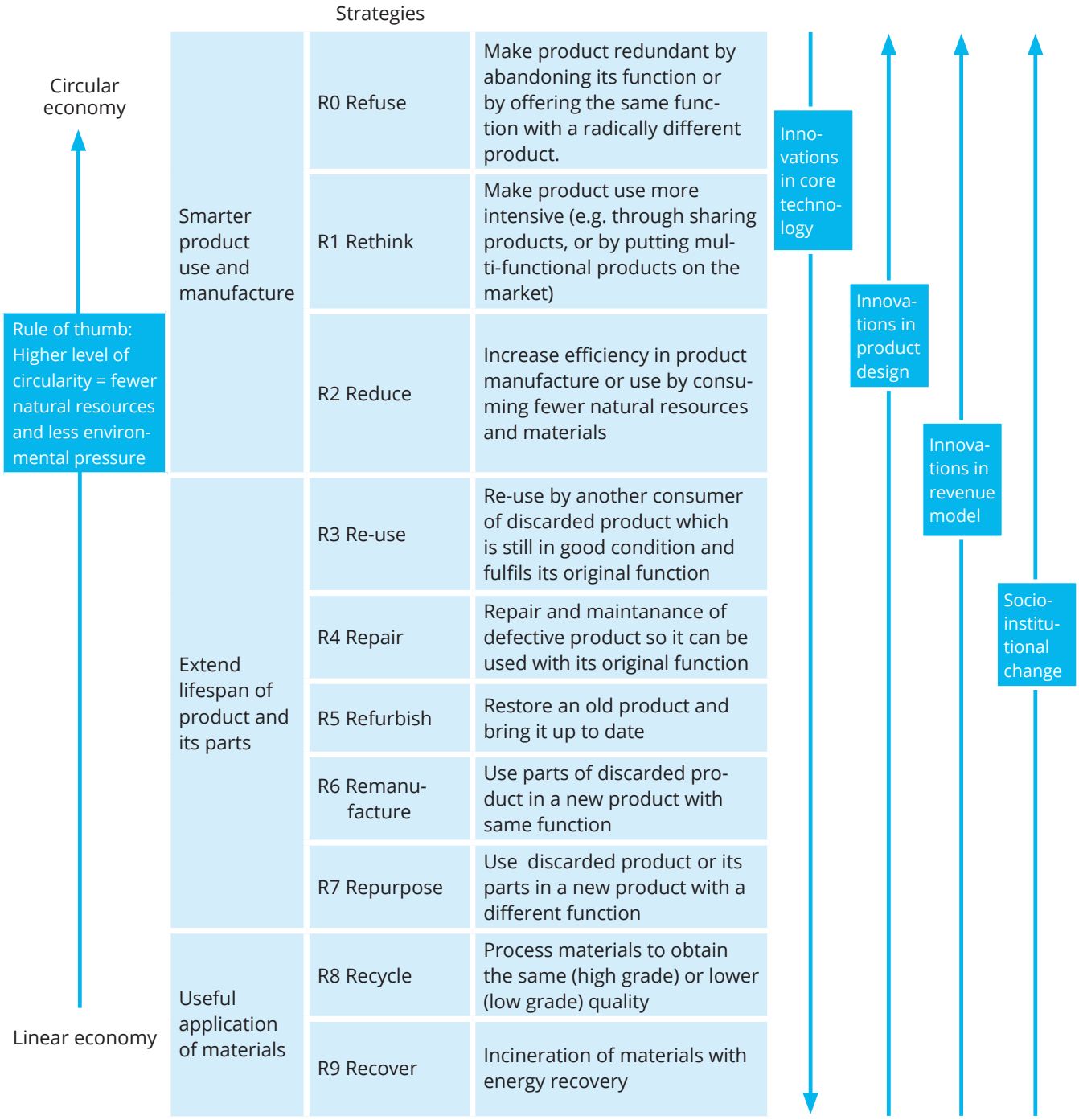
The definition includes the thought that the circular economy must benefit both the current and coming generations.[93]

Photo: Srdjan Randjelovic / Shutterstock.com

93 The definitions presented in the article in its entirety: "A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations.", Kirchherr et al., 2017, Conceptualizing the circular economy: An analysis of 114 definitions, p. 224–225, available online at: https://www.sciencedirect.com/science/article/pii/S0921344917302835

Circular economy expert Jacqueline Cramer has described[94] the comprehensiveness of the circular economy in nine areas that are shown in Figure 3:

FIGURE 3: Different levels of the circular economy



Strategies of circular economy. Potting et al. 2017, Circular Economy: Measuring innovation in the product chain, p. 5.

94 RLI, 2015, Circular Economy: From wish to practice, p. 59, available online at: https://www.rli.nl/sites/default/files/advice_rli_circular_economy_interactive_def.pdf

3.1 The circular economy in the clothing and textile industry

A shift to a circular economy has been proposed as one solution to the environmental burden caused by the clothing and textile industry. In the clothing and textile industry, circular economy refers to a system, where clothing, fabrics and fibres are valued and utilised so they are always returned for a new use without ever ending up as waste[95]. Of the clothing and textile sector managers interviewed by McKinsey in 2021, 60% said that they had invested or intended to invest in the promotion of circular economy[96], but in practice circular economy is only just starting to shift from idea to practice. For example, a report by the Ellen MacArthur Foundation in 2017 determined that only a percent of the materials used in clothing are recycled into new clothing and up to 73 % end up at landfills or are incinerated.[97] Some of this waste is entirely unused and in good enough condition to use, or products returned by customers.[98] In addition to the fact that used textiles should be better recycled, there is a need for solutions in reducing waste generated during production. It has been estimated that around one fourth of the raw materials used by the Bangladeshi clothing and textile industry is left unutilised already during production.[99]

The current modest use of recycling solutions is also evident in the utilisation of recycled materials in the production of textiles. According to an assessment carried out in 2021, the share of recycled material based on materials other than used plastic bottles of the fibres used in the clothing and textile industry is only about 0.5%.[100] In the case of cotton, the share of recycled fibre was estimated to be around 1%, and in the case of wool 6%.

The European Environment Agency's report from 2018 classifies the measures that promote circular economy in the textile industry into five categories. First, raw materials should be sustainably produced, which means the production of more ecological natural fibres and avoiding the use of toxic chemicals. Second, the clothing should be designed both structurally and stylistically to last as long as possible, in addition to which their

95 Ellen MacArthur Foundation, 2017, A New Textiles Economy: Redesigning Fashion's Future, p. 44, available online at: https://ellenmacarthurfoundation.org/a-new-textiles-economy

96 McKinsey, 2021, State of Fashion 2022, p. 19, available online at: https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2022/the-state-of-fashion-2022.pdf

97 Ellen MacArthur Foundation, 2017, A New Textiles Economy: Redesigning Fashion's Future, p. 20, available online at: https://ellenmacarthurfoundation.org/a-new-textiles-economy

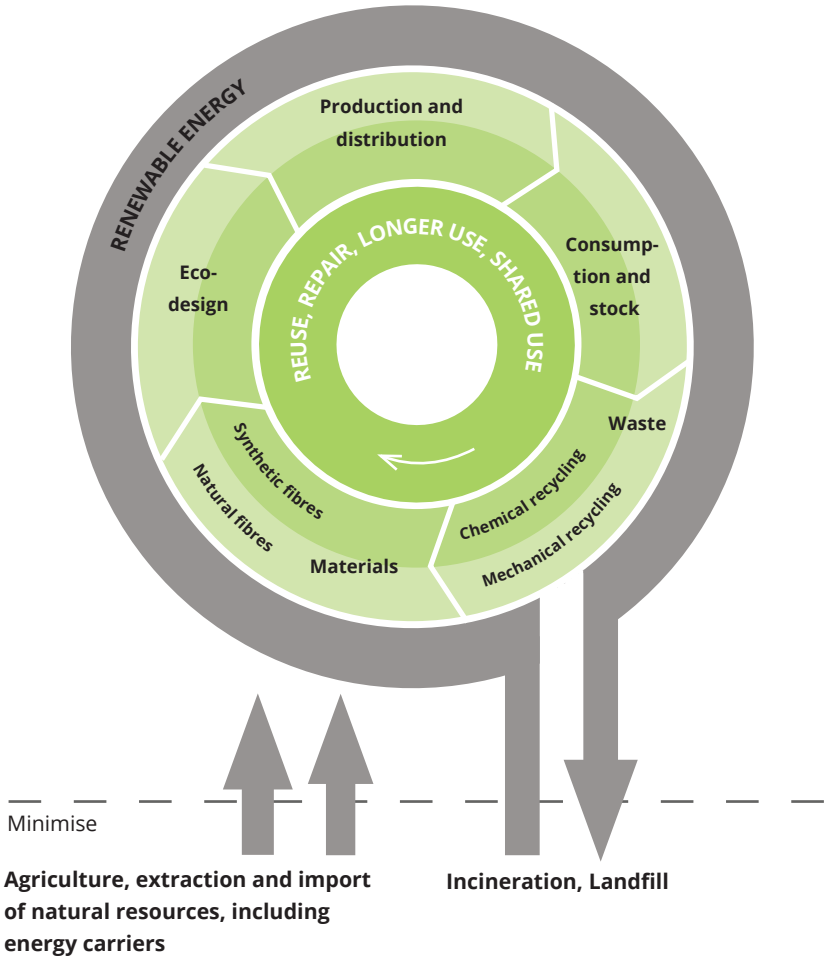
98 Optoro, 2020, Fashion has a waste problem. These companies want to fix it, https://www.optoro.com/press/fashion-has-a-waste-problem-these-companies-want-to-fix-it/ (viewed on 27 December 2021)

99 Reverse Resources, 2017, The Undiscovered Business Potential of Production Leftovers within Global Fashion Supply Chains: Creating a Digitally Enhanced Circular Economy, p. 6, available online at: https://reverseresources.net/about/ white-paper

100 Textile Exchange, 2021, Preferred Fiber & Materials: Market Report 2021, p. 10, available online at: https://textileexchange.org/wp-content/uploads/2021/08/Textile-Exchange_Preferred-Fiber-and-Materials-Market-Report_2021.pdf

recyclability must be taken into account. Third, production itself should be sustainable, which can be ensured with measures such as improving energy efficiency, reducing the use of natural resources, transitioning to renewable energy and by reducing the amount of leftover material that ends up as waste. The fourth category is sustainable use, which means that produced clothing remains in use for a longer time through promotion of recycling solutions based on reuse and the more extensive use of rental services. The last category is the collection of used clothing, and recycling as material.[101]

FIGURE 4: Circular economy in the clothing and textile industry



Circular economy means abandoning the linear economy and making an effort to achieve closed cycling of materials, where the use of virgin natural resources and the amount of waste and emissions generated is minimised or eliminated completely. (European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 4, available online at: https://www.eionet.europa.eu/etcs/ etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy)

101 European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 30 -44, available online at: https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy

According to McKinsey's report, promotion of a circular economy for ready-made clothing will require the resolution of three challenges. First, products and the materials used in them must be designed so they are easy to recycle. Second, logistics must work in both directions at the end of the consumer, meaning the producer or a party mandated by them must agree to accept and possibly even buy back used products from customers, which can then be sold as used for new use. Third, an effort must be made to overcome the preconceptions of older consumers in particular, with regard to used clothing.[102]

The Finnish textile sector's circular economy has been promoted e.g. in the VTT's Telaketju project, which identified obstacles for the promotion of circular economy at different stages of clothing's lifecycle. One obstacle identified at the production stage was that politics and the market did not provide sufficient incentives for sustainable production, although the technological solutions were already available. Obstacles highlighted at retail and consumers included the poor availability of repair services and the challenges related to finding used clothing as well as concerns related to their condition and hygiene. Obstacles identified in the phase after clothes have been discarded from use included the fact that the technological solutions related to the recycling of discarded clothes are not considered economically appealing although there is a large number of such solutions available.[103]

The Telaketju project has also assessed the challenges involved in textile recycling and the tools used for the assessment of environmental impacts. On the basis of a consumer survey, the majority of Finns expect clothing produced from recycled fibres to be the same price and more affordable that a similar product made from new raw materials. When purchasing clothing made from recycled fibres, consumers feel ease of use, price and comfortableness are substantially more important than its eco-friendliness, responsibility or image.[104]

The Telaketju project developed circular economy models also together with textile and recycling sector operators, For example, recycled textiles company Pure Waste developed and tested a concept, were the customer gets their daily clothing as a rental service. Another project sought practical solutions to how an employer's logo on work clothing could easily be changed to that of another to facilitate rental activities.[105]

102 McKinsey, 2021, State of Fashion 2021, p. 66-68, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

103 VTT, 2021, Telaketju – Business from Circularity of Textiles, p. 103-111, available online at: https://cris.vtt.fi/ws/por- talfiles/portal/52366217/Telaketju2_FinalReport_Public.pdf

104 VTT, 2021, Telaketju – Business from Circularity of Textiles, p. 24, available online at: https://cris.vtt.fi/ws/portalfiles/portal/52366217/Telaketju2_FinalReport_Public.pdf

105 VTT, 2021, Telaketju – Business from Circularity of Textiles, p. 17–18, available online at: https://cris.vtt.fi/ws/portalfiles/portal/52366217/Telaketju2_FinalReport_Public.pdf

A transition to a circular economy can reduce the risks related to the production of raw materials or those related to their availability, but will not eliminate all the problems related to fast fashion. However, comprehensive transition to a circular economy that contains a system change is still a long way off. It has been estimated that the circular economy measured implemented in the clothing and textile industry have thus far focused on the optimisation of the current system and not the change of structures.[106]

For now, it is difficult to assess how the increased use of circular economy solutions will impact the sector's production structures and in this manner developing economies such as Bangladesh, where the clothing and textile industry is currently an important employer. If clothing is maintained more than previously and recycled as clothing e.g. through rental and resale services, circular economy can mean that the clothing and textile industry's value chains will move back closer to consumers. On the other hand, where clothing is recycled into new textile fibres. a key question will be the price and need for labour and logistics. Used clothing has traditionally been transported to places such as India, Pakistan and many African countries[107], so logistics should not be an obstacle for used textiles to continue being transported to some extent to cheap labour countries, where they could be used to produce new products. On the other hand, the development of automation and robotisation may even substantially reduce the importance of labour costs in the clothing and textile industry's value chain as early as during the 2020s.[108]

3.2 Recycling and use of textile fibres in industry

Each year more than a hundred million tonnes of various fibres are produced globally for the needs of the clothing and textile industry. This is nearly two times more than at the beginning of the millennium and is equal to 14 kilogrammes per person on Earth. The most commonly used materials are polyester (52% of the total volume) and cotton (24% of the total volume). Only about 8% of all produced textile fibres are recycled. More than 90% of these recycled fibres come from outside the textile sector, predominantly from PET plastic bottles, meaning the recycling of materials used in clothing into new clothing is still very undeveloped.[109]

106 Drift, 2018,The transition to good fashion, available online at: https://drift.eur.nl/wp-content/uploads/2018/11/ FINAL_report.pdf

107 Nordic Council of Ministers, 2016, Exports of Nordic Used Textiles: Fate, benefits and impacts, p. 48, available online at: http://norden.diva-portal.org/smash/get/diva2:1057017/FULLTEXT03.pdf

108 McKinsey, 2018, Is apparel manufacturing coming home?, available online at: https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/is%20apparel%20manufacturing%20coming%20home/is-apparel-manufacturing-coming-home_vf.pdf

109 Textile Exchange, 2021, Preferred Fiber & Materials: Market Report 2021, p. 4 and p. 8, available online at: https://textileexchange.org/wp-content/uploads/2021/08/Textile-Exchange_Preferred-Fiber-and-Materials-Market-Report_2021.pdf

The Scaling Circularity report published in 2021 estimated that the technology[110] already in use would be adequate for transitioning the clothing and textile industry 80% to circular economy with regard to used materials. Of this, 75 percentile units would be realised by increasing the recycling of textiles into textile and the final 5% by utilising the material flows of other industrial sectors. This would require that 80% of clothing discarded from use would need to be collected separately worldwide in place of the current 25%.[111]

According to the report, even though recycling processes also require energy and natural resources, in the case of cotton and polyester, they burden the environment less and are more affordable than virgin raw materials. However, reaching cost efficiency will still require investments. With regard to these, the report acknowledges the which came first, the chicken or the egg issue: producers do not dare invest in the necessary equipment, while the availability of materials for recycling is uncertain, and investments in collection logistics are hindered by uncertainty on how much demand there will be for collected textiles. One proposed solution is pre-competitive cooperation between companies, which can in addition to the development of after-use recycling infrastructure involve such things as the introduction of joint recycle materials package labelling. Pre-competitive cooperation in the local recycling of textiles has been piloted in Bangladesh, and this project is covered in more details in Chapter 5.2 of this report.[112]

The visions about the future of the circular economy also have to take into consideration that competition for recycled materials will intensify when other sectors also transition to a circular economy. For example, a report from 2021 on the apparel and textile market estimated that the availability of the sector's by far most important source of recycled fibre, polyester from used plastic bottles can decline when the soft drink industry makes an effort to utilise the material from old plastic bottles as a raw material for new bottles. For this reason, the report emphasises the need to aim for a circular economy in which used textiles could be recycled as new textiles without dependency on the material flows of other sectors.[113]

In its report published in 2021, the Changing Markets Foundation, which promotes responsible business, criticised clothing brands for the abundant use of oil-based synthetic

110 The report highlights mechanical recycling of cotton and viscose fibre and methods based on heat and chemicals as the most important methods for the recycling of polyester, nylon and pulp materials.

111 Global Fashion Agenda, 2021, Scaling Circularity, p. 18, available online at: https://www.globalfashionagenda.com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/

112 Global Fashion Agenda, 2021, Scaling Circularity, p. 19–20 and p. 30–31, available online at: https://www.globalfashionagenda.com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/; for more comprehensive information on the financing of circular economy see Chatham House, 2021, Financing an inclusive circular economy, available online at: https://www.chathamhouse.org/sites/default/files/2021-07/2021-07-16-inclusive-circular-econo-my-schroder-raes.pdf

113 Textile Exchange, 2021, Preferred Fiber & Materials: Market Report 2021, p. 73, available online at: https://textileexchange.org/wp-content/uploads/2021/08/Textile-Exchange_Preferred-Fiber-and-Materials-Market-Report_2021.pdf

fibres and its related greenwashing. According to the report, companies rely too much on the use of used plastic bottles in reducing their environmental impacts and they do not have proper plans for the recycling of textile fibres. It highlighted such issues as the poorly justified claims on the recyclability of products when companies did not have a service related to the collection of used products. According to the report, marketing claims and terminology related to sustainable materials were often poorly defined and justified.[114]

In addition to polyester, at least periodical challenges may arise in the use of cotton, which is also a popular raw material these days. According to an estimate published in 2021, four of the world's six leading cotton production countries are at high or extremely hight risk of droughts, floods and wildfires.[115]

The clothing and textile industry has seen the need for developing completely new kinds of fibres. Part of the sector's circular economy vision is a transition to e.g. from fossil fuel-based polyester and from cotton, which requires a great deal of land, water and chemicals, to e.g. biosynthetic, meaning man-made natural fibres or pulp-based materials.[116] For example, VTT has developed leather-like material from mushroom mycelium.[117] Finnish company Infinited Fiber in turn develops Infinna textile fibres from cotton waste and cellulose side streams with a method for which the company also sells licences to other operators[118]. A factory, which is to open in 2024, will produce an estimated 30,000 tonnes of Infinna fibre a year, which is equal to the textile fibres in 100 million t-shirts.[119] A second domestic start-up company Spinnova produces fibres for the use of the textile industry from paper pulp and leather waste.[120] Spinnova's first factory is due to be completed in Jyväskylä by the end of 2022.[121]

114 Changing Markets, 2021, Synthetics Anonymous, Fashion brands' addiction to fossil fuels, available online at: http://changingmarkets.org/wp-content/uploads/2021/07/SyntheticsAnonymous_FinalWeb.pdf

115 Cotton 2040, 2021, Physical Climate Risk for Global Cotton Production, available online at: http://www.acclimatise.uk.com/wp-content/uploads/2021/06/Cotton2040-GAReport-FullReport-highres.pdf

116 Fab-magazine, 2021, Materiaalien mullistus – tunnetko jo nämä tulevaisuuden ihmeelliset biotekstiilit?, https://www.fab-lehti.fi/biotekstiilit/ (viewed on 27 December 2021)

117 VTT, 2019, VTT kehittää sienistä korvaajaa nahalle – tavoitteena teollinen tuotanto, https://www.vttresearch.com/fi/uutiset-ja-tarinat/vtt-kehittaa-sienista-korvaajaa-nahalle-tavoitteena-teollinen-tuotanto (viewed on 27 December 2021)

118 Sitra, 2021, Infinited Fiber synnyttää tekstiilikuidun uudelleen: "Tekstiilialan murroksen näkee ja tuntee", https://www.sitra.fi/caset/infinited-fiber-synnyttaa-tekstiilikuidun-uudelleen-tekstiilialan-murroksen-nakee-ja-tuntee/ (viewed on 20 January 2022)

119 Infinited Fiber, 2021, AFRY chosen as main engineering partner for Infinited's flagship plant, https://infinitedfiber.com/2021/12/15/afry-chosen-as-main-engineering-partner-for-infiniteds-flagship-plant/ (viewed on 20 January 2022)

120 Sitra, 2021, Spinnova tekee tekstiilikuitua sellusta: "Olemme maailman ainoa yritys, joka valmistaa tekstiilikuitua ilman haitallisia kemikaaleja", https://www.sitra.fi/caset/spinnova-tekee-tekstiilikuitua-sellusta-olemme-maailman-ainoa-yritys-joka-valmistaa-tekstiilikuitua-ilman-haitallisia-kemikaaleja/ (viewed on 20 January 2022)

121 Spinnova, 2021, Spinnovan ja Suzanon tehdashanke etenee Jyväskylässä suunnitellusti, https://news.cision.com/fi/spinnova/r/spinnovan-ja-suzanon-tehdashanke-etenee-jyvaskylassa-suunnitellusti,c3464340 (viitattu 20.1.2022)

Solutions for the recycling of textiles are also being developed in Finland. In November 2021, waste management company Lounais-Suomen Jätehuolto opened a plant in Paimio, which produces recycling fibre raw material from textiles discarded by consumers, which has been sorted by material type. Rester's handling plant, which processes textiles discarded by companies and their side streams and produces new fibres from these for the use of the domestic textile and construction industries operates in the same facilities. In 2025, Lounais-Suomen Jätehuolto also intends to open a discarded textiles refining plant in Turku.[122]

When implementing measures related to the circulation of materials companies should not forget the bigger picture. For example, in 2018 consulting firm Quantis estimated measures that aim at the use of renewable energy and an improvement in energy efficiency will reduce greenhouse gas emissions and other environmental burdens caused by the textile sector more effectively than an increase in the recycling of fibres.[123] As was stated at the beginning of the chapter, a circular economy must be thought of in a more broad-scoped sustainability transition than just recycling.

Examples of a circular economy in Finnish companies

Emmy[124]

Established in 2015, Emmy is an online second hand shop for brand clothing. It differs from online second hand shops in that Emmy assesses the quality of its products, prices them and coordinates the sale of the product and delivery to the customer. The seller and Emmy then divide the sales price.

More than one million products have been sold through the online shop starting from 2015. About one fifth of products are not sold and they are predominantly donated to charity, although for an additional fee the products can be returned to the seller.

122 Sitra, 2021, Rester on Suomen ensimmäinen suuren mittakaavan tekstiilinkierrätyslaitos: "Haluamme mullistaa teollisuuden tekstiilien raaka-aineet", https://www.sitra.fi/caset/rester-on-suomen-ensimmainen-suuren-mittakaavan-tekstiilinkierratyslaitos-haluamme-mullistaa-teollisuuden-tekstiilien-raaka-aineet/ (viewed on 20 January 2022); STJM, 2022, Kuluttaja- poistotekstiilit maanlaajuisesti uudelleenkäyttöön ja kierrätykseen ensimmäiseksi Suomessa, https://www.stjm.fi/uutiset/ kuluttajapoistotekstiilit-maanlaajuisesti-uudelleenkayttoon-ja-kierratykseen/ (viewed on 20 January 2022)

123 Quantis, 2018, Measuring Fashion: Environmental Impact of the Global Apparel and Footwear Industries Study, p. 38-40, available online at: https://quantis-intl.com/wp-content/uploads/2018/03/measuringfashion_globalimpactstudy_full-report_quantis_cwf_2018a.pdf

124 Emmy, Timo Huhtamäki, interview on 5 January 2022; Emmy website, https://store.emmy.fi/ (viewed on 3 January 2022); Sitra, 2021, Emmy tekee vaatteiden kierrosta helppoa: "On tärkeää, että laadukas tuote säilyy käytössä mahdollisimman pitkään", https://www.sitra.fi/caset/emmy-tekee-vaatteiden-kierrosta-helppoa-on-tarkeaa-etta-laadukas-tuote-sailyy-kaytossa-mah- dollisimman-pitkaan/ (viewed on 3 January 2022)

Emmy also engages in cooperation with clothing brands. Emmy sells NOSH's products, which are in good enough condition to use, but do not meet with NOSH's quality requirements. The proceeds from these sales are donated to charity. Emmy has also been involved in launching the Reima Rescue service together with Reima. This service allows Reima's customers to sell their used children's clothing.

Finlayson[125]

Established in 1820, Finlayson is a company that produces household textiles and other similar products. The company has adopted many circular economy-based models as part of its business. Traditional materials and in particular normal cotton have been determined to cause a large share of the company's emissions, so an effort has been made to replace them with other materials such as organic cotton and various recycled materials such as used plastic bottles and cutoffs from production.

The challenges identified with using recycled materials have included availability and the differing characteristics of virgin raw materials and recycled fibres, which still require research and development. Another considerable problem is that as of yet there are no established practices for the collection of recycled materials from the side streams of production or after use from customers.

Finlayson also collects consumers' old quilt covers and jeans in exchange for gift cards. The collected material is recycled for repurposing in industry, part is used as raw materials for the production of Finlayson's rag rugs and towels. In 2020, materials collected from consumers totalled 48 tonnes in weight. By 2025, Finlayson intends to extend the collection of used products to all Finlayson textile products.

Image Wear[126]

Image Wear has produced work clothing since 1959. Up to now, its products have not been produced from recycled materials, because according to the company there have not been sufficiently durable fabrics available for the work purposes and industrial washes. However, the company aims to promote the reuse and recycling of its used products.

In Tampere, the company accepts textiles that its customers have discarded from use. Products that are in good condition and do not carry logos are sold in a separate online

125 Finlayson, 2021, Vastuullisuuskatsaus, available online at: https://issuu.com/finlaysonoy/docs/finlayson_vastuulli- suuskatsaus_2020_issuu; Finlayson, Miia Silvasti, email on 12 January 2022; Finlayson website, https://www.finlayson.fi/ blogs/finlayson/tagged/ymparisto-ja-hiilijalanjalki (viewed on 4 January 2022)

126 Image Wear, Kati Tukiainen, email on 7 January 2022; Image Wear, 2021, Vastuullisuusraportti 2020, available online at: http://kuvapankki.imagewear.eu/products/Kuvat/Vastuullisuusraportti%202020.pdf; Image Wear website, https:// www.imagewear.fi/kiertotalous/ (viewed 4 January 2022)

store for used work clothing. Products at the end of their life cycle can be recycled either as raw materials for Globe Hope, which produces clothes and accessories from recycled materials or in the company's own Kierre composite product range, which includes furnishings, boards and flower boxes made from waste textiles and recycled plastic. The objective is for the recycling rate of products discarded from use to be 30% by 2022 and 70% by 2025.

Image Wear aims to promote reuse also with its Aarre service, in the scope of which work clothing is recycled in workplaces from one worker to another. Used and washed work clothing is returned to Image Wear, from whom these can be ordered for new use, when there is need again. The company also provides the Työvaatelainaamo service, through which customers can rent the work clothing they need from Image Wear's basic range for a period of the customer's choice, after which they will be returned to the warehouse after being laundered and are then rented to the next customer.

Uhana Design[127]

Uhana is a Finnish clothing and jewellery producer established in 2012. In addition to Finland, its products are produced in the Baltic countries and Portugal. The company has made an effort to select organic cotton and recycled fibres as its materials. Its clothing contains around 4.5% recycled materials. The challenge has been that these do not equal in quality to virgin materials and are not as durable in use.

In 2020, Uhana launched the Uhana Dreams clothing rental service, the aim of which is to provide its customers new consumption options and special clothing for special events. In addition to rental, the service also provides the opportunity to test interesting products in advance after which a discount is given from the sales price.

For the time being, the rental service accounts for quite a small share of Uhana's turnover, but the company believes it has great future potential. Due to the coronavirus pandemic, investment in the rental service's marketing has still been small, but a growth in customer numbers has signalled to the company that there is interest in the service. Once restrictions on gatherings eased up during the festivities of early summer 2021 a small spike was seen in rental numbers.

127 Uhana, 2021, Vastuullisuusraportti 2020, available online at: https://uhanadesign.com/app/ uploads/2021/09/2020-VASTUULLISUUSRAPORTTI.pdf; Uhana, Pipsa Kämäräinen, interview on 25 October 2021; Uhana, Pipsa Kämäräinen, email on 14 January 2022; Uhana Dreams website, https://uhanadreams.com/ (viewed on 17 January 2022)

Varusteleka[128]

Varusteleka was established in 2003 as the sales point for surplus army clothing and outdoor gear. The Kierto programme launched in 2017 allows customers to return products that they no longer use for resale. The arrangement also encourages customers to take care of the products as customers can get up to 50% of the original sales price back for returned products that are in good condition.

Use of the service increased four-fold from 2019 to 2021, but still accounts for less than 1% of the company's turnover. The Kierto recycling option has been highlighted more in marketing, and Varusteleka intends to continue its development and research its impact. For example, from the perspective of the internationalisation of the company's sales it must be determined how much logistics undermines the climate benefit gained from the extension of product lifespan.

The raw materials used for Varusteleka's own Särmä products include recycled polyester and wool. The company's Jämä clothing brand sells on a trial basis and in small batches products made from cutoff materials. The price and availability of recycled materials poses a challenge for their use as does their slow introduction due to testing needed to ensure their qualities. In 2020, Varusteleka commissioned 76,031 kilogrammes of textile products; and used 8,072 kilogrammes of recycled fibres, meaning 11% of its total fibre use.

128 Sitra, 2021, Varusteleka ostaa käytetyt tavarat takaisin myyntiin: "Koulutamme asiakkaitamme kuluttajista käyttäjiksi", https://www.sitra.fi/caset/varusteleka-ostaa-kaytetyt-tavarat-takaisin-myyntiin-koulutamme-asiakkaitamme-kuluttajista-kayttajiksi/ (viewed on 3 January 2022); Varusteleka, 2020, Operaatio Epäeettisyysohjelma 2019–2021: Hiilijalanjäljestä, https:// www.varusteleka.fi/fi/article/operaatio-epaeettisyysohjelma-2019-2021-hiilijalanjaljesta/65163 (viewed on 4 January 2022); Varusteleka website, https://www.varusteleka.fi/fi/page/yritysesittely/19791 (viewed on 3 January 2022); Varusteleka, Minja Orava, email on 11 January 2022

4. A just transition

The ecological transition needed in the clothing and textile industry will cause broad-scoped cross-border effects on the societies of production countries. Over the last decade or so the concept of a just transition has quickly become the common framework for climate action. However, the concept has been in use already from the mid-1990s, and its roots can be traced to at least the 1980s when United States trade unions and environmental organisations engaged in cooperation.[129] More recently, a just transition has been understood more broadly as a structured approach to an ecologically and socially sustainable transition.[130]

A just transition combines the agendas for sustainable development[131] and decent work[132]: uncontrolled climate change threatens the attainment of the Sustainable Development Goals whereas a just transition is a controlled process, which promotes decent work and social inclusion and decreases poverty. Human rights are at the core of the agendas for both sustainable development and decent work. In addition, one of the principles for sustainable development is that no one is left behind in development[133]. This steers us to pay special attention to groups in a vulnerable or weaker position and the implementation of their rights.[134]

A key tool that facilitates a just transition is dialogue between workers, employers and other stakeholders. Social dialogue in the planning and implementation of climate action and in the course of related decision-making will increase not only commitment to climate action but also the social acceptability of the measures.[135]

129 See e.g. Stevis D., Morena E. ja Krause D., 2019, Reclaiming the role of labour environmentalism in Just Transitions, available online at: https://www.researchgate.net/publication/337400201_Introduction_The_genealogy_and_contemporary_politics_of_just_transitions

130 Just Transition Centre, 2017, Just Transition: A Report for the OECD, available online at: https://www.oecd.org/envi- ronment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf

131 See e.g. United Nations, The Sustainable Development Agenda, https://www.un.org/sustainabledevelopment/development-agenda/ (viewed on 3 December 2021)

132 See e.g. ILO, Decent work, https://www.ilo.org/global/topics/decent-work/lang--en/index.htm (viewed on 3 December 2021)

133 UN, 2017, Leaving No One Behind: Equality and Non-Discrimination at the Heart of Sustainable Development, available online at: https://unsceb.org/sites/default/files/imported_files/CEB%20equality%20framework-A4-web-rev3.pdf; see also UNDP, 2018, What does it mean to leave no one behind? A UNDP discussion paper and framework for implementation July 2018, available online at: https://www.undp.org/publications/what-does-it-mean-leave-no-one-behind#modal-publication-download ja DESA, 2016, Leaving no one behind: the imperative of inclusive development Report on the World Social Situation 2016, available online at: https://www.un.org/esa/socdev/rwss/2016/full-report.pdf

134 For more information see e.g. https://kestavakehitys.fi/ketaan-ei-jateta-periaatteen-toteutuminen

135 See e.g. ILO, 2015, Guidelines for a just transition towards environmentally sustainable economies and societies for all, available online at: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf ja UNFCCC, 2016, Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs (Tech- inical Paper), available online at: https://unfccc.int/sites/default/files/resource/Just%20transition.pdf

The principles of a just transition have been developed in particular by the International Trade Union Confederation (ITUC)[136] and the International Labour Organization[137]. The secretariat of the UN Framework Convention on Climate Change has published a memorandum[138] on a just transition for labour force. Although it is generally accepted that a transition to a low carbon economy will require examination of its justness not only globally, nationally and locally but also sector-specifically and at the microeconomy level as well as in different time horizons, these policy guidelines mainly give general outlines for national policy measures required by a just transition, which must be implemented in dialogue with social partners. The ILO's guidelines instruct the government to initiate the macroeconomy and sector-specific measures as well as the social and labour policy measures required by an ecological transition, such as skills development policies and technical and vocational education. In addition, these emphasise the importance of labour rights and labour market dialogue.

Olivier de Schutter, the UN Special Rapporteur on extreme poverty and human rights has also published a report on a just transition. According to de Schutter, an approach to the just transition that take human rights into consideration will require a funding base built on progressive taxation, the protection of employees and communities from the negative effects of the transition to their livelihoods, inclusion of employees and communities in the planning and implementation of national transitions, as well as goal-driven eradication of societal inequality.[139]

Acknowledging the need for a just transition is furthest in sectors where core activities comprise the production and use of fossil fuels – globally particularly the coal industry and in Finland the peat sector. However, finding a solution to the climate crisis and the more extensive ecological sustainability crisis will change economic structures considerably more extensively than just energy production. Sectors such as the clothing and textile industry are susceptible to the societal effects of the ecological transition, even though their environmental footprint is not as straightforward as that of energy production. Identifying both the environmental impacts and risks associated with a just transition can be much more challenging in such sectors, where production is divided into long and constantly changing value chains, the different phases of which have different environmental impacts.

136 ITUC, 2010, Resolution on combating climate change through sustainable development and just transition, available online at: https://www.ituc-csi.org/IMG/pdf/2CO_10_Sustainable_development_and_Climate_Change_03-10-2.pdf. See also https://www.ituc-csi.org/just-transition-centre

137 ILO, 2015, Guidelines for a just transition towards environmentally sustainable economies and societies for all

138 UNFCCC, 2020, Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs (Technical Paper)

139 UN Special Rapporteur on extreme poverty and human rights, 2020 Report (UN Doc. A/75/181/Rev.1)

Both the think tank Institute for Human Rights and Business (IHRB)[140] and a Finnwatch report, published in autumn 2021, placet support for a just transition as part of a company's human rights-based climate responsibility. Companies are responsible not only for the reduction of their emissions, but also the compensation of the remaining emissions and for ensuring that when climate measures are implemented human rights due diligence as outlined in the UN Guiding Principles[141] is also undertaken. The principles for a just transition require that in addition to substantive rights, the due diligence process also takes into account both procedural rights and obligations towards vulnerable groups. States play a key role in the planning and preparation of a more extensive societal transition, but companies must, where necessary, use their influence to improve the conditions for a just transition and refrain from opposing measures that aim to promote such transition.[142] Chapter six of this report examines the just transition in more detail as a corporate responsibility issue.

5. Impacts of the transition on the clothing and textile industry

The management of the impacts of an ecological transition have been examined in numerous studies. Very few of these focus specifically on the clothing and textile industry, but in particular reports that apply the principles of a just transition to circular economy have been useful also from the perspective of the clothing and textile industry. For example, a report published by research institute Chatham House in 2020 estimated that a transition to a circular economy would change employment structures and can do so in four different ways: the creation of new jobs, the move or elimination of old jobs and the redefinition of jobs or work tasks.[143] The report outlines how to take the dimensions of a just transition into consideration when transitioning to a circular economy (see Figure 5).

140 IHRB, 2020, Just Transitions for All: Business, Human Rights, and Climate Action, p. 55, available online at: https://www.ihrb.org/uploads/reports/Just_Transitions_For_All_-_Business%2C_Human_Rights%2C_and_Climate_Action_-_IHRB_Nov2020.pdf

141 TEM, 2013, Yrityksiä ja ihmisoikeuksia koskevat ohjaavat periaatteet: Yhdistyneiden kansakuntien "suojele – kunnioita–korjaa" -kehyksen täytäntöönpano, available online at: https://tem.fi/documents/1410877/2870803/Yrityksi%C3%A4+- ja+ihmisoikeuksia+koskevat+ohjaavat+periaatteet_su.pdf/ba12d115-4b4d-47e8-a94c-af07956a032a/Yrityksi%C3%A4+ja+ih- misoikeuksia+koskevat+ohjaavat+periaatteet_su.pdf

142 Finnwatch, 2021, Yritysten vastuu ilmastosta ja oikeudenmukaisesta siirtymästä, https://finnwatch.org/fi/julkaisut/oikeudenmukainen-siirtyma (viewed on 1 December 2021)

143 Schröder, P., 2020, Promoting a Just Transition to an Inclusive Circular Economy, p. 13, Chatham House, available online at: https://www.chathamhouse.org/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf

FIGURE 5: A just transition in a circular economy

A just transition must be taken into account in every phase of the value chain (Schröder, P., 2020, Promoting a Just Transition to an Inclusive Circular Economy, p. 15, Chatham House, available online at: https://www.chathamhouse.org/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf)

According to the report, a just transition to a circular economy will require that attention be given to five perspectives. First the participation of a broad-scope group of stakeholders is needed, as a circular economy will change how welfare is distributed between countries, companies, workers and consumers. Second, if the need for a just transition is not acknowledged, a circular economy will not bring about social benefits such as better health or working conditions. Third, support mechanisms will be needed in particular for low and middle income countries, which are dependent on single sectors, of which one example is the textile industry. Fourth, just circular economy principles should acknowledged in international trade, and e.g. the WTO's Aid for Trade Programme could be utilised in supporting developing countries through the transition. Fifth, a transition to circular economy must be coordinated internationally.[144]

A just transition in the clothing and textile industry has been examined very little and even then in quite a narrow way. According to a report published by the Drift Research Institute in 2018, the clothing and textile sector's transitions to more sustainable business will take place along six paths: closer cooperation in a shorter and more transparent value chain than previously, improving the status on worker, more stringent legislation aiming e.g. to reduce environmental impacts and improve working conditions, product and production innovations, the open reporting of environmental impacts and new business models that may be based on the circular economy. The measures outlined in the report for improving the status of workers are in part similar to the principles for a just transition: e.g. training for changing work tasks and hearing of workers. Drift's report does not really touch upon the fate of the sector's jobs, which will be looked at in more detail in the following section of this report. The Drift report merely states that automation may eliminate up to a million jobs, but it may be possible to save some of these if the sector develops in a direction where the work required more professional skill and are more difficult to outsource to machines.[145]

5.1 What will happen to jobs?

There are numerous parallel trends in the clothing and textile industry, the combined effects of which on the sector's jobs in the near future are difficult to predict. It is unclear how quickly the principles of circular economy will be introduced and how a transition from a fast fashion culture to more sustainable consumer behaviour will progress. It has been estimated that in addition to changes in production, putting the sector's environmental impacts on a path to sustainability will require a cut in consumption meaning the

144 Schröder, P., 2020, Promoting a Just Transition to an Inclusive Circular Economy, p. 28–29, Chatham House, available online at: https://www.chathamhouse.org/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf

145 Drift, 2018, The transition to good fashion, p. 32–37 and p. 41, available online at: https://drift.eur.nl/wp-content/uploads/2018/11/FINAL_report.pdf

less frequent purchase of clothing and their more long-term use.[146] This is in contrast with the current expectation that the production will continue to grow.[147] In the longer term, increased automation, necessary measures to curb nature loss and climate change as well as preparation for future disruptions such as pandemics and extreme weather phenomena and increasing regulatory requirements will very probably cause a cut in jobs in the current production countries, which often are particularly vulnerable.

For example, a report published by the European Environment Agency (EEA) in 2019 found that an increase in circular economy models could shift production back to Europe, shortening production chains and reducing the harmful impacts in current production countries.[148] The ILO's report from 2016 in turn predicted that the development of automated sewing robots could move jobs back closer to consumers.[149] According to this same report, the clothing and textile sector is one of the most susceptible sectors to a loss of jobs resulting from automation. McKinsey's report estimates that the EU's upcoming carbon border adjustment may also support European jobs by promoting the local recycling of clothing instead of importing them from abroad.[150]

A report on the green transition published by the International Labour Organization (ILO) in 2019 includes an entire chapter on a just transition from the Asian clothing and textile industry. However, the premise for the report is quite unrealistic as it assumes existing production will become more sustainable and that the number of jobs will not radically change, leading to a conclusion that instead of new jobs in other sectors, what is mostly needed is development of new skills.

The same report identifies five dimensions of a just transition: politics and institutions, education, social dialogue, dissemination of information and financing.[151] A more recent report by the ILO published in autumn 2021 emphasises that a just transition from the Asian clothing and textile industry will require among other things stronger national environmental policies, which is fit in a socially sustainable manner into societies other

146 Niinimäki et al., 2020, The environmental price of fast fashion, available online at: https://finix.aalto.fi/wp-content/uploads/2021/04/Nature_review_Niinimaki-2020.pdf

147 McKinsey, 2021, State of Fashion 2021, p. 66, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

148 European Environment Agency, 2019, Textiles and the environment in a circular economy, p. 35, available online at: https://www.eionet.europa.eu/etcs/etc-wmge/products/etc-reports/textiles-and-the-environment-in-a-circular-economy

149 ILO,2016, ASEAN in transformation, Textiles, Clothing and Footwear: Redesigning Fashion's Future, p. 11 and 23, available online at: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---act_emp/documents/publication/wcms_579560. pdf

150 McKinsey, 2021, State of Fashion 2021, p. 65, available online at: https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf

151 ILO, 2019, Green Jobs and a Just Transition for Climate Action in Asia and the Pacific, p. 41–49 and p. 61–63, available online at: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf

development, as well as dialogue especially emphasising the role of women in which employees and stakeholders are invited to take part. It recognises that the transition will impact jobs and the creation of new jobs is not a given, but it does not discuss the matter in more detail.[152]

National environmental policy that reduces emissions could help protect jobs in two ways. In the manner described in Chapter 2.2, many apparel and textile companies operating in western countries will aim to reduce emissions from subcontracting, which will have an impact on their decisions on countries they purchase products from in the future. In the same manner, the countries that are able to clean their energy production more quickly may in future gain a competitive edge in those export markets that price emissions from imported products.[153]

Curtailing the consumption of new clothing would likely also reduce the need for labour. It has also been proposed that if, in future, consumers purchase fewer new clothes, recycle them and take better care of their upkeep, there are two options for the sector's jobs: either the number of jobs will decrease as demand decreases or the same amount of workers will produce a smaller amount of clothing of a higher standard and in better working conditions.[154]

On the other hand, it is believed that a circular economy will also bring with it entirely new jobs. It is estimated that in the current recycling of clothing, every million kilogrammes of clothing recycled employs around 20 people in 2015.[155]

Using the same ratio, the recycling of all clothing waste could employ more than 100,000 people in Europe. Sitra's report on the employment impacts of circular economy notes that the jobs created in this transition (e.g. in recycling, reuse of fibres or various rental and repair services) may not be located in the current production countries but e.g. in Europe where the transition to circular economy will mean a more localised production chain.[156] A report by Chatham House concerning the clothing and textile sector estimated that some of the sector's production jobs may remain in the current production count-

152 ILO, 2021, Opportunities for a Just Transition to environmental sustainability and COVID-19 recovery in the textile and garment sector in Asia, p. 23, available online at: https://www.ilo.org/asia/publications/WCMS_823229/lang--en/index. htm

153 Although, the coal duties planned by the EU will not in their early stages apply to apparel and textiles. On the other hand, a price can be put on product-specific emissions also by adopting an emissions tax for consumptions products. See Finnwatch, 2021, Reilu hinta hiilelle, available online at: https://finnwatch.org/fi/julkaisut/reilu-hinta-hiilelle

154 Schröder, P., 2019, Circular garments: What About the Workers?, https://www.ids.ac.uk/opinions/circular-garments-what-about-the-workers/ (viewed on 2 December 2021)

155 Reuse, 2015, Briefing on job creation potential in the re-use sector, p. 5, available online at: https://www.rreuse.org/wp-content/uploads/Final-briefing-on-reuse-jobs-website-2.pdf

156 Sitra, 2021, How does the Circular Economy Change Jobs in Europe?, p. 14, available online at: https://media.sitra.fi/2021/03/27163705/sitra-how-does-the-circular-economy-change-jobs-in-europe-v2.pdf

ries, but these will change and require new skills with the introduction of new technology.[157]

The increased efficiency of recycling may also have impacts on the employment related to the end-use of clothing in the global south. A report by the Nordic Council of Ministers published in 2016, estimated that the sale of Nordic clothing exported to Africa sold in marketplaces may employ and provide a livelihood for around 12,000 people. However, the report notes that the export of clothing can be a detriment to local clothing production, which would mean that the impact on employment would not be this great.[158]

5.2 Case: Bangladesh

The ecological transition will likely prove to be an enormous challenge for Bangladesh, as the country is greatly dependent on the clothing and textile industry, and the country's societal security networks for citizens are undeveloped. The country's economy and population are thus very susceptible to any changes that will occur in the near future in the clothing and textile industry's production chain and demand when various measures aimed at decreasing environmental impacts are introduced for large-scale use.

After China, Bangladesh is one of the leading clothing and textile industry production countries, the appeal of which is based in particular on its low wages.[159] In 2015, the country has around 7,000 clothing factories, but the number has more recently decreased to around 5,000 as production has been more centred in larger units than previously.[160] The sector employs 4.5 million people in Bangladesh, of whom 3.1 million work in the production of clothing. The clothing and textile sector therefore accounts for 54% of all the country's industrial jobs.[161] An aspect even more important than employment is that the clothing and textile sector as a whole was estimated to account for 87% of the country's exports in 2020.[162]

157 Chatham House, 2020, Promoting a Just Transition to an Inclusive Circular Economy, p. 18. available online at: https://circulareconomy.europa.eu/platform/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf

158 Nordic Council of Ministers, 2016, Exports of Nordic Used Textiles: Fate, benefits and impacts, p. 93, available online at: http://norden.diva-portal.org/smash/get/diva2:1057017/FULLTEXT03.pdf

159 World Bank, 2016, Stitches to Riches? Apparel Employment, Trade, and Economic Development in South Asia, p. 7, available online at: https://openknowledge.worldbank.org/handle/10986/23961

160 IHRB & Chowdhury Center for Bangladesh studies at UC Berkeley, 2021, The Weakest Link in The Global Supply Chain: How the Pandemic is Affecting Bangladesh's Garment Workers, p. 18, available online at: https://www.ihrb.org/focus- areas/covid-19/bangladesh-garment-workers

161 World Bank, 2017, Bangladesh Jobs Diagnostic, p. 69–71, available online at: https://openknowledge.world- bank.org/handle/10986/28498

162 Searched for from the WTO Data Service at: https://stats.wto.org/

A large share of exports are sent to Europe (62% of the value of export), but it has been estimated that export from Bangladesh to Europe may decrease as Vietnam's relative competitiveness increases after the country entered into a trade agreement with the EU.[163] The share of imported clothing and textiles brought directly from Bangladesh to Finland rose during the period 2006-2020 from around 2.5% to around 6.0%. At the same time it has passed e.g. Sweden and Germany, and is, after China, the second most significant country to produce textiles imported to Finland[164].

In 2016-2017, the estimated unemployment rate in Bangladesh was 4.2% (men 3.1% and women 6.7%). Even before the coronavirus pandemic, it was estimated that the population of Bangladesh would grow more quickly than the number of jobs, which was believed to lead either to a growing unemployment rate or to the working age population leaving Bangladesh to be migrant workers elsewhere.[165] Bangladesh is also very susceptible to the destructive effects of climate change, which may lead to unemployment in other sectors.[166] Coastal floods can increase the salination of the soil, which negatively impact on agriculture.

The country's clothing industry is a significant employer, but also susceptible to various disruptions. During the most difficult stages of the coronavirus pandemic, up to one in five working age people were estimated to be without employment, and the country has not yet fully recovered from this. In summer 2020, unrest related to unpaid wages or opposition to the closing of a factory was reported at nearly one hundred factories. It is estimated that the coronavirus pandemic caused up to 16.5 million primarily unofficially employment Bangladeshi residents to fall back below the poverty threshold.[167]

The impacts of various changes on the population are magnified by the country's poor and fragmented social security. There are 119 different programmes in Bangladesh that

163 McKinsey, 2021, What's next for Bangladesh's garment industry, after a decade of growth?, https://www.mckinsey.com/industries/retail/our-insights/whats-next-for-bangladeshs-garment-industry-after-a-decade-of-growth (viewed on 2 December 2021)

164 Suomen Tekstiili & Muoti, Tekstiilin ja muodin tavaravienti ja tuonti, https://app.powerbi.com/view?r=eyJrIjoiMTA1NzA5MmYtMTNkYi00NzhjLWJkYjktMmJlYjY1Njc0MWI3IiwidCI6IjZlOTVmZjE2LWU5NjUtNDljMC05ZGI2LTZiNjg4ZDJjZDhmZSIsImMiOjh9 (viewed on 15 June 2021)

165 BILS, 2021, The World of Work amid Covid Pandemic in Bangladesh: Trade Unions' Strategic Action Priorities, p. 8-9, available online at: http://bilsbd.org/wp-content/uploads/2021/10/World-of-Work-amid-Covid_TU-Strategic-Actions_ April-2021_Revised.pdf

166 Solidarity Center, 2020, The Intersection of Climate Change, Migration and Changing Economy, available online at: https://www.solidaritycenter.org/wp-content/uploads/2020/07/Bangladesh.Report.The-Intersection-of-Climate-Change-Migration-and-Changing-Economy.-June-2020.pdf

167 BILS, 2021, The World of Work amid Covid Pandemic in Bangladesh: Trade Unions' Strategic Action Priorities, p. 11 and p. 14, available online at: http://bilsbd.org/wp-content/uploads/2021/10/World-of-Work-amid-Covid_TU-Strategic-Ac- tions_ April-2021_Revised.pdf ; for more on the impacts of the coronavirus pandemic on the Bangladeshi clothing industry see also IHRB & Chowdhury Center for Bangladesh studies at UC Berkeley, 2021, The Weakest Link in The Global Supply Chain: How the Pandemic is Affecting Bangladesh's Garment Workers, available online at: https://www.ihrb.org/focus-areas/covid-19/bangla- desh-garment-workers

are considered social security, the majority of which are related to food aid and support for the elderly.[168]

Both the ILO[169] and the World Bank[170] have estimated that the wide range of different programmes is inadequately coordinated and, for this reason, the programmes do not necessarily reach those who need help most. There is no unemployment security, but its introduction in connection with formal sector jobs is being investigated in a project implemented by the ILO and financed by clothing store chain Uniqlo's parent company[171]. The report, which also assessed the impacts of the coronavirus pandemic on the country's clothing industry in 2021, ended up recommending that the country's social security should be strengthened by introducing a basic income or another mechanism that could help people who have lost their jobs from falling into poverty.[172]

The Bangladeshi tax system and policies do not support the strengthening of social security and other societal support networks, as the grey economy and numerous different loopholes in the tax base weaken the country's possibilities for collecting tax revenue. The clothing and textile industry, which is a key player in the country's economy, is entitled to a considerably lower corporate income tax rate than other businesses. The nominal corporate income tax rate in Bangladesh varies between 22.5%-30% depending on business type[173], but the clothing industry only pays 12% in corporate income tax. Tax reliefs applied since 2015 were extended yet again in 2020 citing the coronavirus.[174] The country

168 SSPS, Social Security Policy Support (SSPS) Programme, https://socialprotection.gov.bd/en/ (viewed on 23 January 2022)

169 ILO, Social protection in Bangladesh, https://www.ilo.org/dhaka/Areasofwork/social-protection/lang--en/index.htm (viewed on 2 December 2021); The project which is examining unemployment security is focusing primarily on Indonesia, but will also include lighter assessments on six other Asian countries including Bangladesh. The project is to come to an end in July 2022. For more information see e.g. Fast Retailing, 2019, Fast Retailing Partners with International Labour Organization for Social Protection and Improved Environments for Asian Workers, https://www.fastretailing.com/eng/sustainability/ news/1909040900.html (viewed on 23 January2022); ILO, Unemployment Protection in Indonesia – Quality Assistance for Workers Affected by Labour Adjustments (UNIQLO), https://www.social-protection.org/gimi/ShowProject.action?id=3096 (viewed on 23 January 2022)

170 World Bank, 2021, Bangladesh Social Protection Public Expenditure Review, available online at: https://docu- ments1.worldbank.org/curated/en/829251631088806963/pdf/Bangladesh-Social-Protection-Public-Expenditure-Review.pdf

171 ILO, Social protection in Bangladesh, https://www.ilo.org/dhaka/Areasofwork/social-protection/lang--en/index.htm (viewed on 2 December 2021); The project which is examining unemployment security is focusing primarily on Indonesia, but will also include lighter assessments on six other Asian countries including Bangladesh. The project is to come to an end in July 2022. For more information see e.g. Fast Retailing, 2019, Fast Retailing Partners with International Labour Organization for Social Protection and Improved Environments for Asian Workers, https://www.fastretailing.com/eng/sustainability/ news/1909040900.html (viewed on 23 January2022); ILO, Unemployment Protection in Indonesia – Quality Assistance for Workers Affected by Labour Adjustments (UNIQLO), https://www.social-protection.org/gimi/ShowProject.action?id=3096 (viewed on 23 January 2022)

172 IHRB & Chowdhury Center for Bangladesh studies at UC Berkeley, 2021, The Weakest Link in The Global Supply Chain: How the Pandemic is Affecting Bangladesh's Garment Workers, p. 66, available online at: https://www.ihrb.org/focus- areas/covid-19/bangladesh-garment-workers

173 Deloitte, Bangladesh Tax Highlights 2021, available online at: https://www2.deloitte.com/content/dam/Deloitte/glo- bal/Documents/Tax/dttl-tax-bangladeshhighlights-2021.pdf

174 Textile Today, RMG sector to enjoy 12% corporate tax for more two years, https://www.textiletoday.com.bd/rmg-sector-enjoy-12-corporate-tax-two-years/

also grants generous tax holidays to other business sectors. For instance, new tax holidays were entered into force in July 2021 for the food and automobile industries. New companies established in these selected sectors do not need to pay corporate income tax for a period of ten years.

The country is also attracting foreign investments with eight special economic zones (called export processing zones), where in addition to various tax holidays, companies are provided lighter permit processes and exemptions from customs duties.[175]

Bangladesh lacks many tax laws that would combat tax evasion. There are no interest deduction limitation rules or controlled foreign company rules (CFC rules) in place.[176] Corruption is rife throughout society, and in 2021 Bangladesh ranked 147th in Transparency International's Corruption Perceptions Index (c.f. Finland ranked 1st).[177] Corruption is believed to hinder the implementation of a just transition, and for example the responsible use of climate funding.[178]

According to the International Trade Union Confederation (ITUC), the opportunity of workers to collectively participate in the planning of a just transition is prevented by the numerous shortcomings in the freedom of trade union activities in Bangladesh. The country's laws allow trade union activities and negotiations on collective agreements and prohibit the discrimination of trade union members, but the details and implementation of these laws are inadequate and the right to strike is strictly limited. According to the ITUC, the freedom of trade unions is also restricted with regulations concerning their administration.[179]

Disputes between clothing and textile sector employers and employees typically concern wages and required overtime work.[180] Short and uncertain employment relationships are common in all sectors.[181]

175 Bangladesh Export Processing Zones Authority, https://www.bepza.gov.bd/content/about-bepza and https://www.bepza.gov.bd/content/at-a-glance

176 Deloitte, Bangladesh Tax Highlights 2021, available online at: https://www2.deloitte.com/content/dam/Deloitte/glo- bal/Documents/Tax/dttl-tax-bangladeshhighlights-2021.pdf

177 Transparency International, Bangladesh, https://www.transparency.org/en/cpi/2021/index/bgd (viewed on 25 January 2022)

178 Transparency International, Corruption and climate – a devasting relationship, https://www.transparency.org/en/blog/corruption-and-climate-vulnerability-a-devasting-relationship

179 ITUC, Survey of violations of Trade Union Rights, https://survey.ituc-csi.org/Bangladesh.html (viewed on 2 December 2021)

180 FES & BILS, 2016, State of Bangladesh Garment Sector Tripartism and the Scope of Harmonious Industrial and Labour Relations, p. 12, available online at: http://bilsbd.org/wp-content/uploads/2016/03/STATE-OF-BANGLA- DESH%E2%80%99S-RMG-SECTOR-TRIPARTISM-AND-THE-SCOPE-OF-HARMONIOUS-INDUSTRIAL-AND-LABOUR-RELATIONS. pdf

181 BILS, 2019, Employment Security Wage and Trade Union Rights in Four Industrial Sectors of Chittagong Region, p. 4, available online at: http://bilsbd.org/wp-content/uploads/2019/03/Employment-Security-Wage-and-Trade-Union-Rights-in-Four-Industrial-Sectors-of-Chittagong-Region.pdf

According to a study of the employees at clothing factories in the city of Chattogram (prev. Chittagong), which is the centre of the export industry, found that the rate of industrial association was low among employees and trade union activities often led to terminations. According to the same study, training provided to workers does not aim at the development of new skills but is superficial and based for the most part on fulfilling the key requirements of purchasers.[182]

In the near future, the future of jobs in Bangladesh's clothing and textile industry may be further supported as the move from China to countries with lower cost levels continues. In the longer term, trends that aim at increasing circular economy that may e.g. reduce demand for new clothing and replace this demand with repair services that are located near the end user will also begin to impact employment.

The international markets have already set some requirements related to circular economy for the Bangladeshi textile companies. These have applied to such things as waste management or the recycling of materials.[183] On the other hand, it has been found that production plants have been slow to react and invest according to the newest requirements by purchasers concerning such things as materials and more varied finishing.[184] This means that Bangladeshi dependence on the export of clothing that is simple and cheap to produce will continue.

Circular economy solutions are currently being piloted in Bangladesh's clothing and textile industry. Within the scope of the Circular Fashion Partnership project, clothing brands, clothing producers and recycling companies work together with the aim of transitioning from virgin raw materials to recycled materials. The Reverse Resources platform used in the project aims to combine the supply and demand of different material streams thus promoting the utilisation of textile materials that previously ended up as waste. Participants in the project include 43 textile sector producers, 17 recycling companies and 20 clothing brands including Benetton, H&M and Peak Performance. During the project's first phase, the aim is to determine the amount and types of materials are utilised and can be used in circular economy solutions, so that the companies interested in recycled materials dare to invest in solutions that will utilise it. At the end of 2021, it was estimated that there were 200 tonnes of textile fibres each month within the scope of material flow monitoring, which is less than 0.1% of the country's annual cotton and cotton-elastic waste. However, it is believed the share may grow to 10%–20% of all textile waste if exis-

182 BILS, 2019, Employment Security Wage and Trade Union Rights in Four Industrial Sectors of Chittagong Region, p. 33-37, available online at: http://bilsbd.org/wp-content/uploads/2019/03/Employment-Security-Wage-and-Tra- de-Union-Rights-in-Four-Industrial-Sectors-of-Chittagong-Region.pdf

183 Dhaka Times, 2019, Clothes that don't stain the environment, https://www.dhakatribune.com/opinion/op-ed/2019/04/08/clothes-that-don-t-stain-the-environment (viewed on 24 September 2021)

184 McKinsey, 2021, What's next for Bangladesh's garment industry, after a decade of growth?, https://www.mckinsey.com/industries/retail/our-insights/whats-next-for-bangladeshs-garment-industry-after-a-decade-of-growth (viewed on 2 December 2021)

ting circular economy solutions could be fully used with regard to both fibre collection and demand. In this case, the textile recycling sector could have an annual turnover of 1.2 billion dollars and employ 20,000 people. Some of these jobs would be new and require new types of skills and competence, while others, which are waste management jobs currently in the scope of the unofficial economy would become official jobs.[185]

The promotion of a circular economy will also require the dismantling of numerous obstacles. For example waste management in Bangladesh is based in great part on the unofficial economy, meaning material flows are not known well and they cannot be controlled. In addition to this, it should be noted how textile waste is utilised at present.[186] Cotton offcuts are utilised e.g. as raw materials in products less demanding than clothing such as towels and blankets, in addition to which these are exported to India and China to be used a raw materials, as these countries have more developed processing technology than Bangladesh.[187] Some cotton waste is even said to be burnt to produce energy, because there is plenty of it available and it is free. Therefore, a requirement for more developed recycling solutions is that more can be paid for materials than in the export market or when burnt ensuring enough money for financing an alternative energy source.[188]

The project has observed that promotion of circular economy will require cooperation and transparency from the clothing and textile industry so that materials flows can be utilised. In addition, it has been recognised that in addition to commercial operators, the effective promotion of the circular economy will require that political decision-makers and local communities, such as those that process waste in the scope of the unofficial economy be involved in the project. In order for local and national policy to support the promotion of circular economy, the report determines that it is necessary for the sector's companies to communicate together and consistently on the need for political reforms.[189]

However, an increased circularity in the local and national economy in Bangladesh will have quite minimal impacts on employment. Even if the Scaling Circularity report's estimate of 20,000 jobs were to become a reality and this applies solely to completely new jobs, this is still less than one percent of the entire country's clothing and textile sector's jobs, and will not be adequate to counterbalance the employment impacts that would arise from e.g. a decline in the overall demand for clothing.

185 Global Fashion Agenda, 2021, Scaling Circularity, p. 22–25, available online at: https://www.globalfashionagenda. com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/

186 Global Fashion Agenda, 2021, Scaling Circularity, p. 27, available online at: https://www.globalfashionagenda.com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/

187 Textile Today, 2020, The story of waste fabric (Jhoot): Positioning Bangladesh, https://www.textiletoday.com.bd/the-story-of-waste-fabric-jhoot-positioning-bangladesh/ (viewed on 21 January 2022)

188 Global Fashion Agenda, 2021, Scaling Circularity, p. 27-28, available online at: https://www.globalfashionagenda. com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/

189 Global Fashion Agenda, 2021, Scaling Circularity, p. 23-24, available online at: https://www.globalfashionagenda. com/fashion-can-become-80-circular-through-pre-competitive-collaboration-to-scale-textile-recycling/

6. Corporate responsibility in the clothing and textile industry's just transition

The need for a just transition described in Chapter 4 has generally been best identified in fossil-based energy production, but the same principles also apply to other sectors. For example, in the clothing and textile industry, it is possible that when a clothing brand pivots to a more rental based business model, and the clothes in its rental range are maintained locally, that will lead to negative impacts to the rights of people working in current production due to a decrease in those jobs.

International human rights due diligencestandards cover withdrawal or disengagement from a business relationship especially in situations where the company does not have the ability to influence the negative human rights impacts of the operations (e.g. a situation where forced labour is observed at the subcontractor's factory, and the subcontractor refuses to take corrective action). According to the international standards, withdrawal is justified when negative impacts cannot otherwise be prevented or mitigated even by increasing the company's leverage, or if it is not possible for the company to increase its leverage.

In the case of the clothing and textile industry transition discussed in this report, a similar situation could be if a business relationship is terminated with an operator who does not have the ability to cut emissions to a sustainable level. On the other hand, a just transition must also be taken into consideration in situations where a company shifts its business model from sales towards a rental service in which case the amount of clothing commissioned may decrease substantially as a result of a business decision and the business relationships with producers may break regardless of their ability to cut their emissions. In this case, a decision to withdraw is not made on the basis of human rights but rather for commercial reasons, but employees still have the right to a just transition. Business relationships in the clothing and textile industry just as in many other sectors are in a constant state of change, but this is not justified grounds to ignore the human rights impacts that result from the more extensive reorganisation of activities.

A just transition can be seen as being included in the UN Guiding Principles provisions on the responsibility of companies to respect human rights, as human rights refers to all internationally recognised human rights.[190] Human rights can be divided into substantive

190 UN, 2011, Guiding Principles on Business and Human Rights, available online at: https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

rights and procedural rights and certain obligations towards individuals who are members of certain groups, such as women, children and indigenous peoples. All three perspectives are also relevant to a just transition and are thus critical when planning climate action in the clothing and textile sector. In transitions the division of human rights into substantive and procedural rights is useful as this offers companies tools to integrate measures to ensure the justness of the transition into their human rights due diligence processes. At the same time, it is a method for companies not only to identify but to prioritise and manage as comprehensively as possible the human rights risks involved in the transition.

The unemployment resulting from the changes in production structure can without the appropriate safety net lead to the weakening of substantive human rights, such as losing one's livelihood. With regard to procedural rights, it is essential that the affected stakeholderss are identified and consulted, which is also one part of the due diligence process in accordance with the UN Guiding Principles . Also failing to initiate a due diligence process early enough can be seen as a human rights risk, if the affected individuals and communities do not have enough time to prepare, negotiate and be heard in matters concerning them.

For example, social dialogue and stakeholder consultation are a fundamental part of not only the principles of a just transition but also the due diligence process defined in the UN Guiding Principles. According to the UN Guiding Principles, key stakeholders who the company must make an effort to involve in their due diligence process, are especially groups affected by the (potential) negative human rights impacts. In accordance with the principles for a just transition, measures must be planned and implemented in cooperation with trade unions and other stakeholders. In the case of an international clothing brand, this means that in addition to the subcontractor meaningful stakeholder consultation should also be held with employees and their representatives such as trade unions.

According to the OECD guidelines, the negative impacts of a withdrawal must be minimised as much as possible by informing employees and local authorities as early on as possible and by participating in drafting mitigating measures[191].

Concrete preventive and mitigating measures, which a company must adopt, will depend on the situation and prevailing conditions and on such things as the comprehensiveness of the social safety net. In some cases, withdrawal decisions can even have a considerable impact on a national employment rate and tax income, which in turn may weaken a government's ability to ensure public services and especially in implementing economic, social and cultural human rights. This means that if in particular the social safety net has shortcomings, companies may have to replace social security and missing services during

191 OECD, 2011, OECD Guidelines for Multinational Enterprises, p. 36, available online at: https://www.oecd.org/investment/mne/48004323.pdf

a transition to the extent that they concern the company's employees or the communities impacted by the company's activities. Companies must take into consideration these more extensive societal impacts as part of their human rights risk assessments, and must recognise their own contribution to social security and tax income as being within the scope of their human rights responsibilities. However, fulfilling these often requires more broad-scoped cooperation with actors such as local and national administration in production countries. The UN Department of Economic and Social Affairs (DESA) emphasises the importance of social security which will soften income losses and promote the adaptation of households in a just transition. It notes that the mechanisms to support groups of people threatened by this type of changes can curb opposition to policy measures aiming at emissions cuts. According to DESA, public sector can also support the change with temporary employment programmes and by supporting companies in arranging retraining for their employees.[192]

International standards on responsible business conduct also require that companies always comply at least with national legislation.[193] This means also respecting commercial agreements, meaning that companies do not withdraw from these unilaterally or leave the costs accumulated from cancellations unpaid, as is believed to have happened during the coronavirus pandemic.[194]

Obligations related to human rights also cover obligations toward certain groups who are particularly disadvantaged or vulnerable. To ensure that all people who are particularly disadvantaged or vulnerable are able to enjoy their human rights in full, special measures or protection may be needed. Disadvantaged or vulnerable groups may also be at the greatest risk of becoming marginalised. According to the UN Guiding Principles, as part of their due diligence processes, companies must pay special attention to the rights, needs and challenges of groups who are especially vulnerable or marginalised to ensure that companies do not maintain or exacerbate the discrimination of these groups. For example, in South and Southeast Asia's clothing industry employs in particular young

192 UN DESA, 2020, World Social Report 2020: Inequality in a Rapidly Changing World, p. 106, available online at: https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-FullReport.pdf

193 UN, 2011, Guiding Principles on Business and Human Rights, p. 25, available online at: https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

194 BILS, 2021, The World of Work amid Covid Pandemic in Bangladesh: Trade Unions' Strategic Action Priorities, p. 12, available online at: http://bilsbd.org/wp-content/uploads/2021/10/World-of-Work-amid-Covid_TU-Strategic-Actions_April-2021_Revised.pdf ; IHRB & Chowdhury Center for Bangladesh studies at UC Berkeley, 2021, The Weakest Link in The Global Supply Chain: How the Pandemic is Affecting Bangladesh's Garment Workers, p. 37, available online at: https://www.ihrb.org/focus-areas/covid-19/bangladesh-garment-workers; Anner, M., 2020, Abandoned? The Impact of Covid-19 on Workers and Businesses at the Bottom of Global Garment Supply Chains, PennState Center for Global Workers' Rights Research Report, p. 5, available online at: https://www.workersrights.org/wp-content/uploads/2020/03/Abandoned-Penn-State-WRC-Report-March-27-2020-1.pdf

women[195], who are often migrants and/or, depending on the country, subject to cast discrimination. Other special groups whose employment opportunities and risk of marginalisation must be assessed separately include various religious minorities.

The principles of a just transition (see Chapter 4) also require that in transitions special attention be given to groups in the most disadvantaged position and the realisation of their rights. This will require the mapping out and assessment of existing inequality and the factors that contribute to it (e.g. age, gender, ethnicity, social group, indigenous peoples) in advance, and planning of the transition process so that equal opportunities for groups in vulnerable and disadvantaged positions to participate in the planning of measures and in decision-making can be secured.

Attention must also be given to how the measures impact different groups during planning and implementation as well as in the monitoring and reporting of impacts. For example, monitoring should include whether the jobs that will potentially be created are available to those in vulnerable or disadvantaged positions. The new jobs must also be decent jobs. Workers at these new jobs must be paid a living wage, and they must have the right to organise and to negotiate collectively on terms of employment.

A just transition often involves a structural change, which, in accordance with the Paris Agreement, must be implemented within the framework of nationally set development goals. According to the OECD guidelines for due diligence even though companies are not responsible for the inability of a national governments to act and protect human rights, a decision by companies to operate in conditions where structural problems are prevalent will affect the nature and scope of their due diligence.[196] This also applies to cases of withdrawal. According to the OECD guidelines for due diligence, companies can handle risks related to structural problems e.g. by engaging in cross-sector cooperation, identifying and supporting existing effective initiatives for preventing and mitigating risks, or by involving public administration by exerting their influence on local and national public administration. Within the scope of lobbying, companies must support the principles of a just transition and the drafting and adoption of policies that will support these, as well as refrain from opposing measures that aim to mitigate climate change and promote adaptation to it.

Not only has a just transition emerged as a key human rights and corporate responsibility issue, but the manner in which companies are prepared for the transition is now assessed as well. The World Benchmarking Alliance (WBA), which published the indicators for a just transition in summer 2021, has engaged in work that aims to produce a detailed

195 ILO,2016, ASEAN in transformation, Textiles, Clothing and Footwear: Redesigning Fashion's Future, p. 1, available online at: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---act_emp/documents/publication/wcms_579560.pdf

196 OECD, 2018, OECD Due Diligence Guidance for Responsible Business Conduct, p. 77, available online at: https:// mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf

assessment of a just transition. These cover such things as the assessment of transition planning, the jobs replacing old ones, education and more extensive social impacts.[197] In autumn 2021, the WBA published the first detailed assessments that utilised the indicators.[198] The assessment covered 180 energy and automobile industry companies and the results were poor. The average score of the companies that participated was 2.7/16 points, and 32 companies scored zero points. Also Climate Action 100+, an initiative launched by investors interested in the environmental impacts of companies they own, has included consideration for a just transition as one of the areas assessed in the net-zero criteria it is developing.[199]

6.1 Practical measures in the clothing and textile industry's companies

As the clothing and textile industry's value chains are long and complex, the identification and division of the responsibilities related to a just transition are more challenging than e.g. in coal production and consumption, where the impacts of company decisions are reflected above all else to one's own employees and those of a few of the company's closes partners. However, the same principles apply regardless of the value chain types in question.

As is described in Chapter 2, the environmental burden caused by the clothing and textile industry is at an unsustainable level, and solutions are being sought for example with various circular economy solutions. In order for this transition to the ecologically sustainable production of clothing and textiles to be just, the principles of a just transition must be taken into consideration at an early stage.

Companies must determine their climate impacts throughout their value chain and make a plan on emissions cuts and minimise the negative human rights impacts of climate measures and other actions that minimise environmental burden on employees and other groups subject to the impacts. In practice, this also means early and open discussion with partners on the direction in which activities are shifting and an assessment of the impacts of these changes. In the case of a clothing brand or store chain located close to the consumer, the need for this dialogue can mean not only suppliers and their employees but also raw material suppliers and local authorities further up in their value chain.

197 World Benchmarking Alliance, 2021, Just Transition Methodology, available online at: https://assets.worldben- chmarkingalliance.org/app/uploads/2021/07/Just-Transition-Methodology.pdf

198 World Benchmarking Alliance, 2021, Just Transition Assessment 2021, available online at: https://assets.worldbenchmarkingalliance.org/app/uploads/2021/10/2021_Just_Transition_Assessment_FINAL.pdf

199 Climate Action 100+, Background and Future Development, https://www.climateaction100.org/progress/net-zero-company-benchmark/background/ (viewed on 2 December 2021)

A guide on a just transition published in 2018 by the International Trade Union Confederation (ITUC) and The B Team organisation, which promotes sustainable business, includes eight principles that a company should take into consideration in their principles for procurements, business planning, employment planning and emissions cut strategies. The principles emphasise the anticipation of climate measure impacts, social dialogue with stakeholders and support for policies that will promote a just transition and social security.[200]

The World Resources Institute WRI has published a guide the aim of which is to help, in particular, the clothing sector's companies to identify the social impacts of measures that aim for smaller environmental impacts and in particular circular economy. The guide divides the measures into three phases: 1) The identification and definition of those in a company's own sphere of influence including business partners, employees, communities and other stakeholders. 2) Collection of data on the impacts on the aforementioned stakeholders taking, in particular into account, the available jobs, equality between men and women, living wages and local communities. 3) Development of monitoring, so that the benefits of the change are divided justly, and the determination of the company's own responsibility and possibilities to influence. The guide encourages operators to use external experts at the different phases of the process[201].

In the first phase, meaning in identifying the company's scope of influence, the World Resources Institute's report encourages paying attention to both employees who are subject to direct impacts and local communities which business decisions will impact indirectly. This review should also cover the entire production chain and include an analysis of the types of people who will be impacted, including age and gender structure, education level, being part of an especially vulnerable group, the nature of employment and the geographical location. The World Resources Institute encourages companies to also take consumers into account as a transition to circular economy can impact them e.g. by changing the amount of money required for clothing.[202]

With regard to the impacts of the transition, both direct and indirect impacts must be taken into consideration. Direct impacts refer to such things as changes to the number, nature, educational requirements, pay level and location of jobs, as well as to how these changes will impact different groups such as part-time workers and women.

With regard to consumers, it should be noted that at least how a new business model's products and their availability take the needs of various special groups into account. With regard to indirect impacts, the impacts on e.g. the local community, which can mean not

200 ITUC/Just Transition Center & The B Team, 2018, Just Transition: A Business Guide, p. 11–13, available online at: https://www.ituc-csi.org/IMG/pdf/just_transition_-_a_business_guide.pdf

201 WRI, 2020, Square your circle, p. 3, available online at: https://files.wri.org/d8/s3fs-public/square-your-circle.pdf

202 WRI, 2020, Square your circle, p. 12-16, available online at: https://files.wri.org/d8/s3fs-public/square-your-circle.pdf

only the consequences related to changes in jobs but also what kind of impact – positive or negative – it will have on the area's waters when the sector transitions from the use of new fibres to recycled. Indirect impacts can also emerge in that the money migrant workers have sent to their home countries will change with the changes to jobs.[203]

After the assessment of impacts, a company must draw up an action plan the measures of which should be prioritised in accordance with the WRI according to their severity and the company's ability to influence them. To improve their ability to influence, a company must identify stakeholders, who prevent or promote the implementation of the measures. This analysis should take into consideration various parties such as the ministries responsible for the environment, jobs and the economy, organisations, trade unions, employer organisations, competing companies, local communities as well as the media.[204]

Companies that have links to the poorest countries via purchases may also need to examine their own contribution to local social security. This may involve influencing local politics or implementing various development projects with their partners or with a more extensive network. For example, Fast Retailing, which owns clothing store chain Uniqlo has provided 1.8 million dollars in financing to a UN and International Labour Organization project that has set out to determine the labour market's functions and social security in seven Asian countries where the products it sells are produced.[205]

203 WRI, 2020, Square your circle, p. 18-20, available online at: https://files.wri.org/d8/s3fs-public/square-your-circle.pdf

204 WRI, 2020, Square your circle, p. 20-25, available online at: https://files.wri.org/d8/s3fs-public/square-your-circle.pdf

205 Fast Retailing, 2019, Fast Retailing Partners with International Labour Organization for Social Protection and Impro- ved Environments for Asian Workers, https://www.fastretailing.com/eng/sustainability/news/1909040900.html (viewed on 29 December 2021

TABLE 1: Responsibility born by clothing and textile industry companies for human rights, the climate and a just transition as well as tangible measures in the value chain

Elements of human rights due diligence		Consideration for the climate and a just transition as part of due diligence	Tangible measures applying to the value chain in purchasing clothing and textile sector companies
A human rights commitment approved by the senior management of a company including commitment to measures to prevent the climate crisis.		The company's business model, strategy and procurement policy are in line with the 1.5°C target taking the human rights impacts of transitions into account.	A target path for the absolute decrease of emissions including scope 3 emissions approved by senior management. Training of the entire personnel and ensuring their commitment to achieving the target.
Map human rights risks, social and environmental impacts; prevent and mitigate	Mapping out of greenhouse gas emissions (scopes 1-3, even when there are methodological challenges related to the calculation of indirect emissions). Net zero target and concrete plans for achieving it; in the implementation of the plan human rights must be respected and due diligence undertaken. Precautionary principle, climate science, Paris Agreement.	Possible changes to the company's business model and strategy required by net zero targets. In some cases, attaining the targets may also require responsible withdrawal from high emissions activities or business relationships. Measures to support adaptation to climate change.	Communication of emissions targets to subcontractors. Taking climate objectives into account when selecting new subcontractors. Clauses concerning the reporting and cutting emissions in purchase agreements. Design of business concepts to extend the lifespan of products (e.g. repair and rental services) Transitioning to recycled fibres. Management of value chain emissions (e.g. utilising the Amfori BEPI system). Identification of the impacts resulting from the decrease or termination of purchases at different phases of the value chain. Planning the mitigation of impacts. Being prepared for rising temperatures and extreme weather phenomena e.g. by supporting investments to air conditioning or to improvements in workers' living conditions.
	Substance rights such as the right to work and an adequate standard of living.	Supporting employment with measures such as various labour force retraining and further education projects, the decency of the new jobs arising from the transition	A living wage Identification of the training needs related to a change in work tasks, as well as support for the needed training and arranging the training.
	Substance rights such as the right to social security and other ESC rights	Social security contributions by companies and company contributions to the tax income of countries.	Reporting on tax payments by subcontractors. Select subcontractors who do not operate in special economic areas or enjoy other special tax rebates. Participation in projects that aim to improve the production country's social security system and employment security. Supporting those who have lost their jobs and their family and relatives by influencing the production country's society e.g. in cooperation with various stakeholders (decision-makers, organisations, competitors).
	Procedural rights, such as the right to participate in decision-making; stakeholder consultations as part of the due diligence process	A structured approach, the involvement of employee representatives and other stakeholders possibly affected by the impacts.	Identification of the key stakeholders in one's own value chain. The involvement of employees and trade unions in the implementation of changes required by emissions cuts at as early a stage as possible.
	Obligations towards women, children, people with disabilities, indigenous peoples; prohibition of discrimination	Decreasing societal inequality, "no one is left behind"	The involvement of recognised special groups and taking them into consideration in the planning and implementation of measures.
Monitoring and reporting		Monitoring the impacts of preventive and mitigating measures from the perspective of issues related to justness of the transition: for example, the impact of employment measures in principle on groups in the weakest position, the quality of new jobs (e.g. questions related to a living wage).	The development of indicators that cover the entire value chain and reporting on these transparently: what kinds of jobs have disappeared or been created, how have those who have lost their jobs been supported.
The right to corrective measures		Compensation of damages, restorative justice.	Monetary compensation in situations such as those where changes in business lead to terminations.

7. Summary

According to the research carried out for the report, it is clear that putting the clothing and textile industry's environmental impacts on a path to sustainability will require a swift and extensive change to how these products are produced as well as a substantial decrease to the sector's production volume. Together and separately these changes will have extensive impacts on employment in the sector. In order for the transition to be just for the sector's employees, companies in the sector must take the social impacts of climate action into account especially in Asia's production countries.

The enormous negative impact of the clothing and textile industry on the environment has been known for a long time. The sector is estimated to cause 4%-10% of global greenhouse gas emissions, and the majority of these result from the production of clothing. The average Finn causes around 262 kilogrammes in greenhouse gas emissions with their clothing and footwear purchases. Although this only accounts for a few per cent of all their consumption based emissions, a solution to the sustainability crisis requires a swift cut to all consumption based emissions. It has been estimated that the consumption based emissions in Finland should be cut to at most a quarter of what they are now during this decade after which they should decline even further. In light of the most recent climate science, even this pace is too slow.

Achieving this rapid change will require substantial changes to how clothing is produced and consumed. We must be able to transition from a linear economy, which is based on the utilisation of virgin natural resources, to a circular economy, where energy and materials are utilised efficiently without causing the consumption of natural resources and without stressing the environment with waste and emissions, which end up in the landfills, atmosphere and waters.

The actions taken by clothing and textile industry companies examined for the report to cut their emissions and promote a circular economy are still in an early phase and totally inadequate. The sector has recognised its enormous carbon footprint, and many companies have set their own targets for decreasing emissions or increasing the use of recycled materials.

However, for the time being actual measures have been mostly superficial. The focus of climate action has been on the operators' own direct emissions, although the greatest emissions are created in the value chain i.e. production. Some companies aim to profile themselves as trendsetters by setting themselves climate targets in accordance with the Science Based Targets initiative (SBTi), but even then not enough attention is given to emissions caused by subcontracting. According to the review carried out for this report, the SBTi verified target of only about half of the companies included an absolute emis-

sions cut target for value chain emissions. It has been noteworthy when examining the climate measures of the sector's companies in Finland that only a small group of the companies have committed to the Hiilineutraali tekstiiliala 2035 initiative launched by the sector's interest group Finnish Textile and Fashion.

The main focus for recycled materials has been on the utilisation of used plastic bottles as polyester, while the extensive utilisation of the sector's internal material flows, such as offcuts and used textiles, in production is in many respects in its baby shoes. The environmental effectiveness of measures implemented by companies is undermined by the fact that the sector is expected to grow in this decade.

In addition to changes in production, putting the clothing and textile industry's environmental impacts on a path to sustainability will require relinquishing fast fashion. In practice, this means steering a new direction where clothing is bought less frequently, is maintained longer and is rented particularly for single-time use and, in this way, the life cycle of a piece of clothing is extended as much as possible. Activities that aim at this goal are already being developed and piloted in many companies, but mainstreaming this will also require changes in consumer behaviour and the behaviour of other buyers such as companies and public actors.

As the clothing and textile industry is labour intensive and its value chains are long, the sector's transition from a fossil economy to a carbon-free circular economy will inevitably have enormous impacts in the different phases of the sector's value chains. The clothing and textile industry is estimated to employ up to 300 million people in the different phases of its value chains. Impact will be especially substantial in countries like Bangladesh, where the clothing and textile sector employs around 4.5 million people, which is 54% of the country's industrial jobs. The sector accounts for 87% of the country's exports.

Consumer shift from purchasing fast fashion to using repair and rental services as well as the transition of production from consuming natural resources to a sustainable circular economy will significantly alter demand for labour in the sector's value chains. This may mean that jobs will move from one country to another (e.g. from the current production countries in Asia closer to consumers in Europe), that jobs will move from one sector to another (e.g. from the cultivation of cotton to the further processing of used clothing) or that the skills required from workers will change (e.g. with a change in materials used).

Such a sizable change may also well mean that the overall number of sector's jobs will increase or decrease globally, but there are as of yet no comprehensive analyses on the overall impacts of the revolution.

Part of the human rights-based climate responsibility of companies is the responsibility to ensure a just transition. This does not mean that emission reductions or other environmental measures should be avoided when they have impacts on workers who are in a

vulnerable position, but that these workers and their families and relatives are identified and they are guaranteed a transition that respects their human rights. For this reason, the principles of a just transition must be recognised as part of the clothing and textile industry's climate measures and taken into consideration comprehensively when implementing measures aiming to decrease its environmental loading.

In order for these impacts to be taken into consideration while planning emissions cuts companies must identify who in the company's value chain will be impacted by these changes and determine what these impacts will be and how they can be mitigated. Typically the principal measure would be to engage in open dialogue, not only with other companies in the value chain, but also employees, trade unions, authorities and other stakeholders.

As the clothing and textile industry's value chains are linked in the manner described in this report to many countries where social security is non-existent or lacking, the responsibility companies bear for the human rights impacts of their decisions is heightened. Therefore, companies should examine their own role in a more broad-scoped manner than just their direct employment impacts. A proactive approach in the implementation of a just transition may require that companies take steps to ensure their share of supporting society by paying taxes in key production countries, to improve working conditions and the terms of employment, to exert political influence to improve employees' transitionsecurity as well as participate in projects such as those that aim to retrain labour force and improve mobility.

8. Recommendations

To companies

- Companies must commit to the 1.5°C climate target and achieve net zero as quickly as possible throughout their entire value chain. The reporting of emissions and setting emissions targets must be implemented by generally accepted means using international standards. For example, the Science Based Targets initiative's requirements should be considered as the minimum required level for emissions cuts. It is also recommended that companies use the Amfori BEPI or another similar system intended for the management of environmental impacts in the determination and management of value chain emissions in risk countries.

- In addition to their own climate measures and targets, companies should promote the sector's general transition by participating in joint initiatives such as The Fashion Pact or the UN's Fashion Industry Charter for Climate Action. In Finland, climate cooperation between companies is promoted by the Hiilineutraali tekstiiliala 2035 commitment (A carbon neutral textile sector 2035), led by the Finnish Textile and Fashion.
- The road towards net zero will usually require changes to a company's strategy and business model. A company must take the principles of a just transition into consideration when implementing these changes and planning emission cuts. This means assessing the impacts of measures throughout the entire value chain as well as open and broad-scoped discussions between value chain operators and stakeholders. The process of due diligence must also pay particular attention to those in a vulnerable position and groups in danger of marginalisation. Companies should also use indicators that bring to light justice-related aspects and take into consideration impacts on groups of people recognised to be the most vulnerablet when reporting climate measures.
- Companies must participate in remedying negative human rights impacts that they have caused or which they have contributed to. When possible negative impacts are recognised, an effort should be made to prevent or mitigate them.
- Companies must see to it that they and their business partners support the local communities and societies located at different phases of their value chain with measures such as paying taxes and facilitating and supporting trade union activities. When necessary, companies should also aim to exert political influence, so that politics would support emissions cuts and social security and other safety networks, which support those who will lose their jobs in the production infrastructure revolution.
- Companies should use indicators that cover justice-related aspects in their reporting. For example, when closing down production plants or when withdrawing from a certain activity, a company must list the impacts of employment and other support measures most specifically on the groups in the most vulnerable position.

To decision-makers

- In order to reduce the environmental loading caused by the clothing and textile sector, the public sector must promote a transition in the sector. This can happen by favouring recycling-based options in public procurements, such as rental services or products made from recycled materials. To reduce the climate impacts of public procurement in Finland, guidelines such as the Keino network's Vähähiilisten hankintojen pelikirja could be utilised.[206]

206 Keino, 2021, Vähähiilisten hankintojen pelikirja, available online at: https://www.hankintakeino.fi/sites/default/files/media/file/KEINO-pelikirja-08122021.pdf

- The ability of companies to determine product-specific carbon footprints must also be imrpoved. The collection of data on production emissions must be promoted for example by requiring carbon footprint data on public procurements.
- Finnish legislation concerning public procurement should be developed by including environmental and social aspects in the principles that must be taken into account in public procurement listed in section 3 of the Act on Public Procurement and Concession Contracts.
- The more sustainable use of clothing and textiles and a circular economy must be promoted by looking into the possibility for introducing a lower VAT rate for repair services, by considering bans on marketing of products that have negative impacts on the climate such as fast fashion, by investing in and eliminating bottle necks in textile recycling and by continuing to increase the textile recycling rate. In addition to developing the collection of textile waste on its own, there is also a need to investigate whether demand for recycled fibres such as the repurposing of synthetic textile fibres could be promoted with e.g. an obligation to use a certain share of recycled material in some industrial sectors.
- Circular economy solutions for the clothing and textile industry must be recognised as an important sector with immense innovation and export potential during the green transition. Instead of untargeted R&D tax subsidies that poke holes in the tax base, direct R&D aid should be allocated for this type of growth sectors that support the green transition.
- A human rights due diligence legislation must be enacted in the EU. During the negotiations for the Corporate Sustainability Due Diligence Directive, Finland must take an active role to ensure that the future directive includes binding criteria for companies' emissions cut targets, which must be in accordance with the 1.5°C target. The legislation must oblige companies to comply with due diligence with regard to human rights throughout their entire value chain, and this must include not only the pre-emptive measures but also enable victims to take legal action and seek damages from parent and lead companies in both Finland and other European Union Member States. The possibility for establishing an international fund from which victims of climate change can get compensation for damages should also be looked into.

The public

- Consumers must give up the consumption of fast fashion which causes overloading to the environment. This means that the use, maintenance and repair of current clothing that supports their long-term use is of utmost importance. When acquiring clothing, the public should favour second hand clothing or the renting of clothing according to what they need. The public should avoid purchasing new clothing for single-time use.

- When acquiring clothing, textiles and their related services, the public should pay attention to whether the environmental impacts of the product or service are openly and comprehensively reported. It is recommended that the public ask companies for information on environmental impacts also publicly, for example on social media.
- The public must require decision-makers to take swift action in drawing up and adopting human rights due diligence legislation in the EU.

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