Downscaling the Textile Industry

Master's thesis

Environmental Management and Sustainability Science

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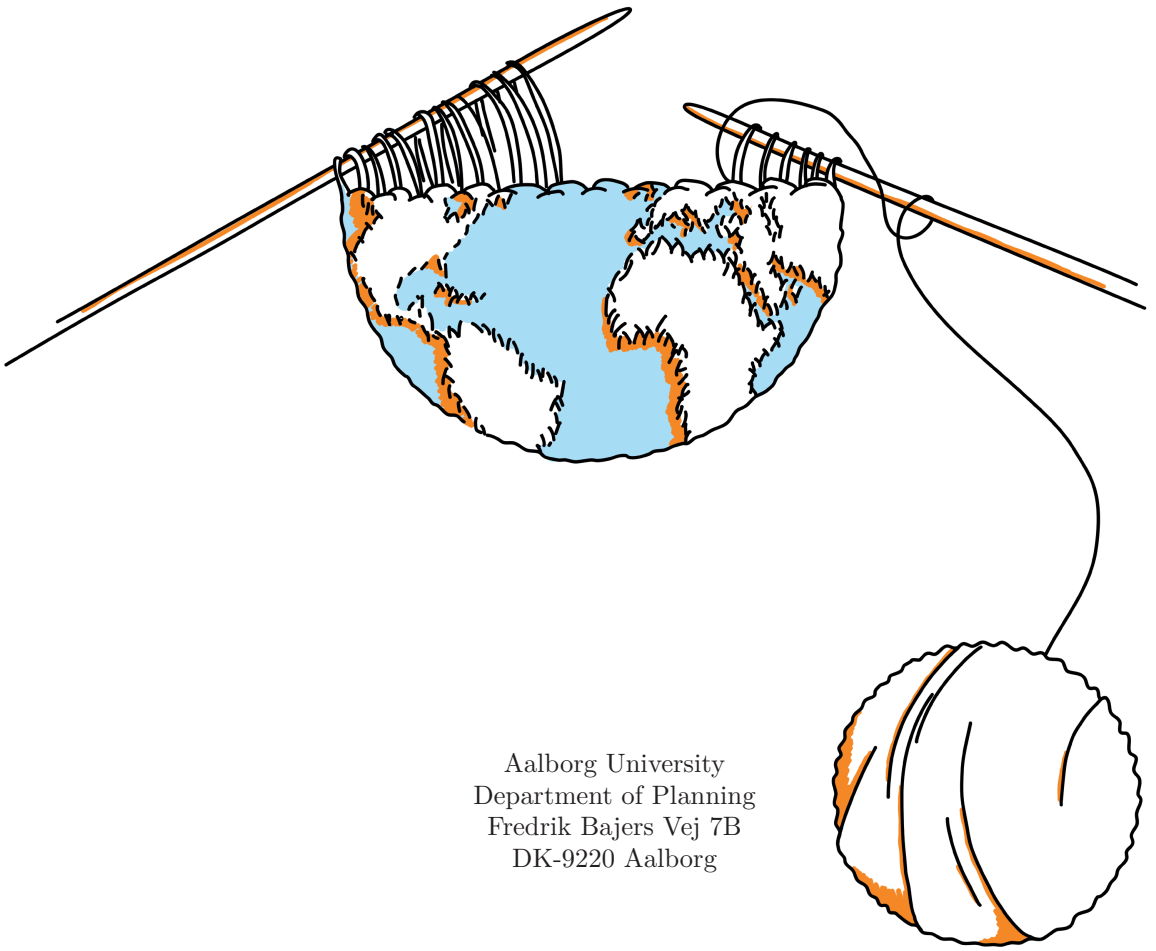

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The picture on the cover page is my own realisation.

Summary

The aim of the research is to provide a solution for addressing the overproduction problem in the textiles industry, being the root of their consequent carbon footprint and environmental impacts. The problem analysis chapter deal with the linear growth of this sector and is followed by an overview of its adverse impacts on the environment and people globally. Then, the chapter continues by analysing the over-reliance of the textile brands on the concept of a circular economy. Several circular practices and their efficiency are reviewed. The problem arising from this chapter lies in the limitations of a circular economy to alleviate environmental impacts if continuous growth is not addressed jointly. Consequently, the problem analysis concludes that a sustainable and circular system for the textile industry cannot occur in a growth-driven model. Degrowth is identified as a potential solution, and the research target how can such a new economic paradigm could be reflected at the business level in the textile industry. Emerging from the problem analysis and statement, the research question is framed and is as follows: *How can textile companies shift towards a business model approaching degrowth with the purpose to build a sustainable future for the industry?* Several subquestions are shaped to support the research question:

- *How a degrowth economic system could look like and what are its principles?*
- *What are the principles of a business model approaching degrowth?*
- *How can these principles be implemented in textile companies?*
- To what extent can the European policies support this transition?

For the purpose of answering these different subquestions, several methods are being used. A conceptual framework giving 15 principles of economic organisation for a system fitting with degrowth is reviewed. Subsequently, a state-of-the-art the current state of knowledge about the principles used to design business models approaching degrowth is performed. The state-of-the-art reflects on 5 different papers touching upon characteristics for a degrowth business model. Based on the information gathered in the state-of-the-art, a framework for business approaching degrowth is conceptualized,

summarizing principles for business model aligning with degrowth. As a result, this framework can be used as a tool to assess the compatibility of several brands with degrowth. Interview and critical analysis have been conducted to offer an assessment of 3 different brands. As the last step, policy development in regard to the textile industry is reviewed and criticised upon its relevance for supporting a shift of business model towards degrowth.

The research demonstrates the applicability of degrowth in a business model, as well as its feasibility. Indeed, the brands assessed showed compatibility and alignment with each principle defined in the framework. Furthermore, the research highlighted certain key principles to facilitate a shift towards a business model approaching degrowth. Finally, the current policy development at the European level has been deemed insufficient to leverage this shift.

Mary Hallaert
Aalborg University, June 2, 2022

Contents

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Introduction

Our current economic system relying on a growth paradigm is leading to unsustainable patterns such as over-production and over-consumption and is driving humanity far behind the physical limits of the Earth. The acceleration of human' activities is causing major disturbances in the climate regulation, putting natural and human systems at risk (IPCC 2022a). To mitigate the impacts of climate change, during the Paris Agreement, nations throughout the world, agreed on reducing their greenhouse gas (GHG) emissions to limit global warming below 2 degrees Celsius, and preferably below 1.5 degrees Celsius (United Nations Climate Change n.d). In spite of it, GHG emissions have continued to rise in the last decade, reducing the probability of achieving this goal IPCC (2022b).

Consumerism society, consistently pushing citizens to consume more, has led to the continuous extraction of the resources of the Earth. However, consumerism and the materialistic way of life have failed to provide wellbeing as described by the "wellbeing paradox". Even though consumption, involving increased GDP and carbon footprint, and wellbeing are correlated in the first place, this correlation ceases in the long-run (Fanning and O'Neill 2019). Fifty years ago, *Limits to Growth* report, was already disclosing the limitations of our current economic model and using the GDP as an indicator for human development (Alberto Garzón, A. 2022). However, ever since, the society has not evolved in the right direction and still depends on economic growth, the measurement of GDP, and increasing pressure on Earth's capacity.

The fashion industry is trapped in this growth system, from the conception of fashion itself. The industry has a considerable environmental and climate footprint. The emissions for which the industry is accountable represent more than the combined GHG emissions of Germany, France, and the United Kingdom, and are expected to increase (McKinsey & Company and Global Fashion Agenda 2020). To align with the target to limit global warming below 1.5 degrees Celsius, the fashion industry has to reduce by 50% by 2030 (Ellen MacArthur Foundation 2021). The industry is betting on a circular future to release from the environmental burden continuously growing (Kearney 2020). The circular economy is a decoupling strategy that has gained momentum in the past decades, both in the political sphere and the industry sector (Prendeville, S. and Sanders, C. and Sherry, J. and Costa, F. 2014). The circular economy is attractive

as it provides an answer to both economic and environmental problems, it is seen as a "panacea" enabling a restart in the economic growth while overcoming biophysical limits (Prendeville, S. and Sanders, C. and Sherry, J. and Costa, F. 2014).

Despite this attraction, the transition towards a circular economy is slow in the fashion industry (Östlund et al. 2020). Moreover, the reduction of environmental impacts offered by the circular economy is hampered by the increase in production and consumption (Prendeville, S. and Sanders, C. and Sherry, J. and Costa, F. 2014). A vision for an alternative economy based on degrowth can provide a solution to reduce both production and consumption (Wilkins, J. 2022). Degrowth in the textile industry has raised interest in some media (Webb, B. 2022). However, a significant gap subsists in the conditions for businesses to approach degrowth and its implementation in the textile industry. The objective of this research is to contribute to filling this gap and explore how can the textile industry can shift towards degrowth.

Chapter 1

Problem Analysis

In the first place, this chapter will serve as an overview of the different impacts the textile industry is responsible for. In the second place, the chapter will continue with an analysis of the solutions offered by the circular economy and its shortcomings.

1 The growth of the textile industry

Since 1975, the production of textiles has been multiplied by 3 (ECOS 2021). According to Ellen MacArthur Foundation (2017), due to the emergence of "fast fashion", the production of textiles has doubled over the past 15 years. The concept of fast fashion consists of creating fashion trends very regularly enticing citizens to buy, at low prices, new products again and again. Fast fashion brands, namely Uniqlo, H&M, Zara, and Primark among others, have seen their business growing extensively recently (Kearney 2020).

Moreover, the model of fast fashion relies on cheap manufacturing and non-durable garment with a short lifetime. Indeed, Changing Markets Foundation (2021) report found out these items are worn, on average, 7 or 8 times before being discarded. This model has been very successful and still is, as it is showcasing sustained growth. It allows citizens to buy new clothes more frequently for a relatively low budget (lower than before), leading to an increase of 40% in clothing purchases between 1996 and 2012 in Europe (Niinimäki et al. 2020).

The overproduction pattern of fast fashion could not have happened without the massive usage of synthetic fibers. Indeed, polyester is notably cheaper than natural fibers, on average 50% less expensive than cotton. Without these advantageous prices, the model of fast fashion relying on cheap clothes could not have been sustained (Bates-Kassatly and Baumann-Pauly 2022). Currently, synthetic fibers are representing 69% of the materials used in the textile industry (Changing Markets Foundation 2021).

Despite their adverse impacts on the environment well documented, fast-fashion brands do not hesitate to make sustainability claims, like the majority of the fashion brands (Changing Markets Foundation 2021). Even though these claims are not defined and sufficiently justified, they seem to be convincing to some extent. As a matter of fact, a recent report from Retail Week (2022), based on a survey of 1 000 UK citizens, found out that the top five most sustainable brands according to the persons surveyed were in this order: H&M, Nike, Primark, M&S and Amazon. These results are rather surprising considering that H&M, Primark, and M&S (Mark & Spencer) are fast fashion brands, and both with Nike have received negative media coverage about their workers' social conditions (Xiuzhong Xu, V. and Leibold, J. 2020).

2 Impacts of the textile industry on the environment

In 2020, considering its global life cycle, the consumption of textiles in Europe is the fourth largest impacting sector for climate change and environmental damage, after housing, mobility, and food (European Environment Agency 2022). It is, however, difficult to precisely determine the carbon footprint of the textile sector, due partly to the complexity of the value chain. Indeed, numerous activities and entities are involved across the globe which hampers the collection of data (World Resources Institute 2021). For that reason, estimations of the textile sector's GHG emissions range from 2 billion CO2e to 3.29 billion CO2e, representing between 4% and 6,7% of global CO2e emissions (World Resources Institute 2021). Although, regardless of the exact number, the textile industry needs to decarbonize and reduce its carbon emissions by half by 2030 to be on the 1.5 degrees of global warming pathway (see fig 1.1) (McKinsey & Company and Global Fashion Agenda 2020).

The fashion industry is becoming more and more aware of its considerable impacts on the environment and seems to be pressured. Indeed, brands are showing extensively their willingness to become "sustainable" via numerous pledges on their products. This willingness can be partly driven by a shift in shopping behaviours of citizens, increasingly requesting more sustainable and ethical product. The consumption has continuously increased in the past decades: 60% more in 2014 compared to 2000, that is in 15 years, in the meantime the lifetime of garment has halved (Villemain, C. 2019). Considering the increasing population and the rising incomes of countries in development, if the fashion industry remains unchanged, its carbon emissions is expected to increase by 60% by 2030(Kearney 2020).

2.1 Impacts: Production stage

The production and manufacturing phase of textile entails a succession of processes impacting the environment, starting from the cultivation stage for natural fibers. Every

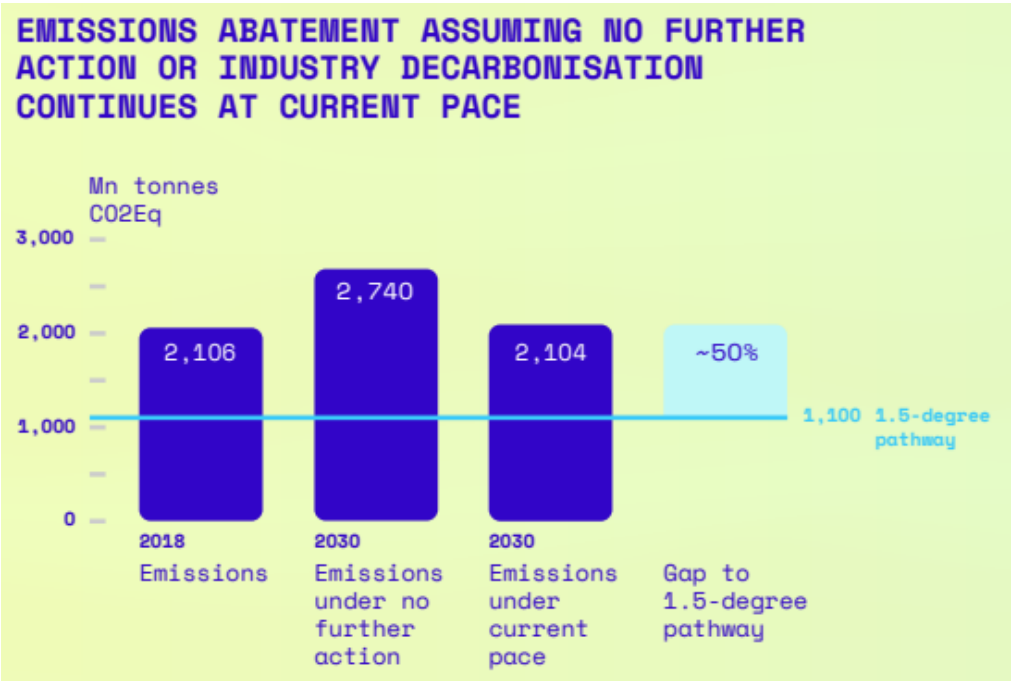

Fig. 1.1: Carbon emissions and pathways (McKinsey & Company and Global Fashion Agenda 2020)

process is demanding in terms of energy use, water, and chemicals (European Environment Agency 2022). A large part of the production and supply chain of textile consumed in Europe is happening outside of Europe. To illustrate, it is the case for around 80% of materials extraction and production (European Environment Agency 2022). This is implying that the largest part of the impacts related to the production of textiles consumed in Europe takes place outside of Europe. According to Mistra Future Fashion (2019), the production and processing stage is the most impacting one, accounting for close to 80% of the total climate impact, mostly due to high energy demand. The production and processing stage is composed of the following processes 1.2:

More precisely, the dyeing, finishing of garments, and the yarn formation are significantly impacting compared to other processes. In the fourth position comes the fiber production accounting for 15% of the total production impact (Quantis 2018). As a matter of fact, a major part of the impacts is occurring at the factory level, not at the primary fibre production.

The textile industry is recognised for being an immense consumer of freshwater, the industry itself is consuming 11% of all the freshwater used for industrial processes worldwide (Kearney 2020). Dyeing and treatment are responsible for 20% of the industrial

Fiber Production	Raw material production and processing
	Pretreament
	Sizing
Yarn Formation	Spinning
	Desizing
Fabric Formation	Warping
	Fabric formation
Finishing phase and end-of-life	Finishing
	Printing and dyeing
	End-of-life of production losses

Fig. 1.2: Different processes along the production chain

water pollution (Ellen MacArthur Foundation 2017)

Some processes in the production of textiles are highly energy-intensive such as dyeing and finishing, moreover, these processes occur in countries where the grid relies mostly on fossil-based energy. To illustrate, fossil-based energy is responsible for around 60% to 70% of the climate change impacts of these processes (Quantis 2018). However, only a few companies are addressing this problem, according to Stand.earth (2021) study, only 6 companies out of the 47 assessed have projected to deploy renewable energy on their supply chain. The production of synthetic fibers deriving from crude oil and methane gas, such as nylon and polyester, is using a method called fracking boom, therefore, it is very energy-intensive in comparison with natural fibers. The sector is also relying on ocean freight and air cargo shipments, both transports dependant on fossil fuels (Stand.earth 2020).

2.2 Impacts: User stage

Even if it is rarely assessed, the use phase is also having a major impact, contributing over 60% for some of the impacts assessed, such as human, marine, and freshwater toxicity. However, it is also the life cycle stage the most determining in reducing the environmental impact (Wiedemann et al. 2021). Indeed, according to Mistra Future

Fashion (2019), multiplying the lifetime of a garment, originally intended, by 2 will reduce its climate impact by half. In this same study, the role of the use phase in the climate impact is estimated to be accounting for just 14%.

Emphasizing how much the durability of a garment both emotionally and physically is crucial for lowering the environmental impact of clothes. However, the lifespan of a garment is very complex to measure, for example, the lifetime of a garment can be long but inactive because it is barely used, and on the contrary, a garment can have a rather short lifetime but have a longer duration of use (Laitala et al. 2018). Nevertheless, worldwide clothes have become underused, indeed, the lifetime and duration of use of garments have dropped importantly over the last decades. As depicted in the figure below 1.3, while the production and sales of garments have increased, the average clothing utilisation decreased from approximately 36% over the past 15 years (Ellen MacArthur Foundation 2017).

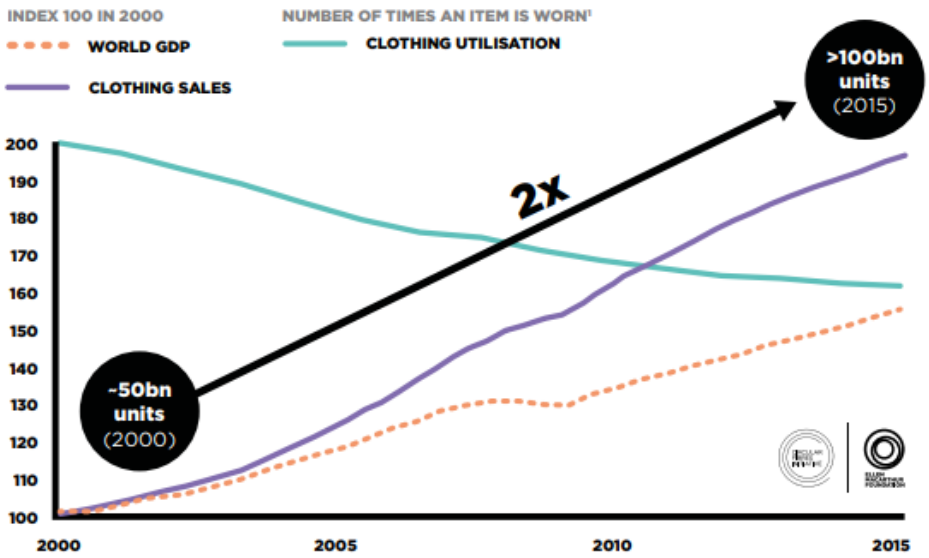

Fig. 1.3: Clothing utilisation, world GDP, and clothing sales, throughout the years (Ellen MacArthur Foundation 2017)

This trend seems to be related to the level of income of countries. Indeed, low-income countries show a higher utilisation of clothes, which is decreasing in developing and developed countries. In the case of China, clothes utilisation decreased by 70% in 15 years (Ellen MacArthur Foundation 2017).

Microplastics released during the washing of clothes containing synthetic fibres, is

accounting for a large part of the microplastics pollution in oceans, some studies revealing it could even be the biggest source of microplastics in the oceans (Bates-Kassatly and Baumann-Pauly 2022). The spread of microplastics in our environment is deeply concerning. In 2022, microplastics have even been discovered in human blood (Leslie et al. 2022). Nevertheless, instead of addressing the problem at its sources, most of the proposed solutions are end-of-pipes. These solutions take place at the user stage like installing filters in washing machines, which sounds over-optimistic considering the number of washing machines in used that would need to be retrofitted. Furthermore, if the filters effectively catch the microfibers there is still a need for properly disposing of them and it does not prevent microfibers to infiltrate the air and human body (Bates-Kassatly and Baumann-Pauly 2022).

2.3 Impacts: End-of-life

According to Kearney (2020), a person chooses to throw away a garment for diverse reasons the order of percentage represented in figure 1.4.

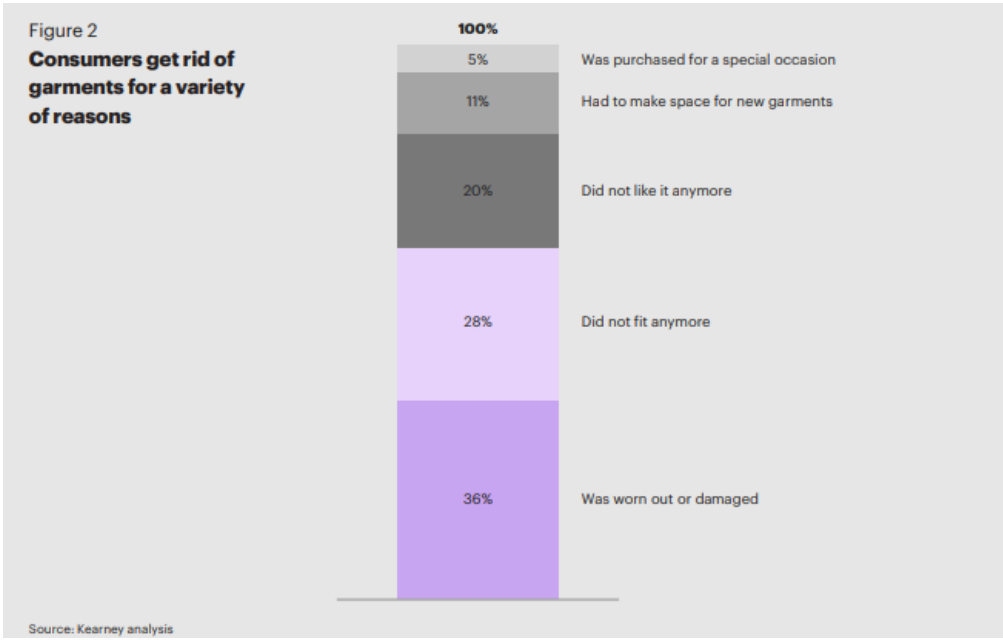

Fig. 1.4: percentage (Kearney 2020)

These numbers show that, in the majority, the reason for getting rid of a garment is not because of its physical incapacity to be worn anymore, but rather for convenience

and emotional durability. This means that in around 64% of cases, the garment thrown away is still in condition for being used. In Europe, the end-of-life of a garment is reached, on average, 6 years after the purchase (Kearney 2020). As a result, and because it is following a linear model, the fashion industry generates a large amount of waste. Every year, the industry is estimated to generate more than 92 million tonnes of waste, the majority ending up in landfill or incinerated (Niinimäki et al. 2020). An average European citizen is estimated to generate 11 kg of textile waste every year (European Environment Agency 2021a).

However, the end-of-life appears to represent a lesser share of the overall environmental impact of the textile industry. Indeed, while according Mistra Future Fashion (2019), attributes 3% to the end-of-life, in the Quantis (2018) study, disposal is assumed to be negligible in comparison with the rest of the processes. However, these assumptions are based on incineration, with co-generation of heat and electricity, and land-filling, which can alleviate the overall impact. In any case, this waste is representing lost resources and values. Unwanted clothes do not necessarily have to end up in a landfill or be incinerated, but can find a second owner, or even more. Even though the collection of textiles in Europe is happening with good collection rates, a large part of the clothes collected is exported to developing countries such as Ghana and Chile (Ellen MacArthur Foundation 2017). These clothes end up in an open sky landfill, submerging these countries in waste they do not have the capacity to handle, causing social and environmental harms (Bedat, M. 2021).

3 The Circular Economy as a panacea for the sustainability of the sector

Increasingly self-conscious of its impacts, combined with the increasing external (politics, NGO, public opinion) pressures, the fashion industry is seeking to become more sustainable. As a matter of fact, while the environmental impacts of the fashion industry are rising, more and more so-called sustainable initiatives, coalitions, and platforms are emerging. Among these initiatives, the concept of circularity is largely recognized as a solution to the fashion's detrimental impacts (Palm et al. 2021).

Such movement is followed closely by citizens, who, especially since the COVID 19 crisis, have seen their purchasing behaviours change. According to Granskog et al. (2020), individuals surveyed in the UK and in Germany consider buying more sustainable garments, repairing and keeping them longer. Moreover, some of them, particularly young people, intend to purchase more items from second-hand shops.

Nevertheless, at the moment, the clothing system is almost entirely following a linear model, inherently unsustainable and devastating for the environment, consisting of :

> resource extraction – clothes production – short time usage – landfill or incineration (Ellen MacArthur Foundation 2017).

A shift to a circular economy should allow a reduction in resource use. According to the latest Circle Economy (2022), the world is 8,6% circular, meaning that on the 101,4 gigatonnes of virgin materials consumed worldwide in 2021, more than 90% end up being wasted. Furthermore, the tendency is getting worse, as the material use increase year after year while the circularity percentage decrease (was 9,1% in 2018). Although the efficiency, recycling, and reuse are increasing, the growth in consumption rate is evolving faster, therefore, the extraction of resources outpaces those improvements by two to three times (Circle Economy 2022). The circularity concept is not by definition sustainable, as well addressed by Jonker and Faber (2021), indeed, the aim of circularity is value retention in a closed-loop, while sustainability implies a reduction in the use of resources and energy as well as a reduction in pollution and others harmful effects on the environment. Consequently, a circular and closed-loop economy could possibly not be sustainable if it demands more energy, water, and resources to be run.

However, the circularity concept is making its way into the textile sector being more and more popular and integrated into the brand's discourse. Circularity seems to be a prior and preferred strategy undertaken to make fashion more sustainable (Palm et al. 2021). Indeed, applying the circularity concepts to the textile sector can allow, to a certain extent, a decoupling between the revenue growth and the GHG emissions(World Resources Institute 2021). Although a part of the industry is claiming to become circular, the circular fashion index developed by Kearney (2020) assesses that most brands have a poor score, the average being 1.99 on a scale of 10.

3.1 Circular Economy's applications in the fashion industry

Applying the circular economy to the fashion industry should ensure products are used more, made to be recycled, and made from safe and recycled or renewable inputs, either via product design or through circular business models aiming at closing down the loop (Ellen MacArthur Foundation 2017). The current circular status and efforts set up in the fashion industry will be analyzed in the next sections.

Product level

When talking about circularity, fashion brands are most of the time focusing on the material used for making textile, while other aspects like cultural and social values are left out (Palm et al. 2021). Those values are, nevertheless, determinants of why and how fashion is used. Indeed, as highlighted previously the reasons why clothes are disposed of are principally non-material related (see paragraph 2.3). Palm et al. (2021) describe this approach as depersonalised, because the "user" and its decisions are not considered and targeted by these initiatives. Although, other solutions at the material level could be emphasized such as durability and repairability, the main initiatives are targeting innovative textile fiber and recycling of textile waste (Palm et al. 2021). As such, the next paragraphs will reflect solely on recycling and material substitution.

Product level innovation: Recycling

According to the Ellen MacArthur Foundation (2017), less than 1% of the used materials in garments are recycled to produce new garments, while around 13% are recycled via cascading into other industries and lower-value products. The way clothes are designed and made does not ease the possibility of recycling. Clothes are indeed, rarely made out of one material but from blended fibres which are very difficult to disassemble and recycle(Changing Markets Foundation 2021).

While the recycling of textiles is very limited, brands offer more and more clothing with recycled content, reflecting the usage of recycled materials from other industries (open loop). This recycled polyester is, indeed, not coming from the textile industry itself but mainly from PET bottles (Changing Markets Foundation 2021). This practice cannot be considered as a sustainable, or durable, solution because, on one hand, it creates a demand for recycled single-use plastic which should be removed from our lifestyles, on the other hand, it does not use textile waste, therefore it is not supporting advancement in that area (fiber-to-fiber recycling).

As an example, Inditex, which is the biggest fashion industry group, has made the commitment to phase out virgin polyester from their fiber mix by 2030, in the meanwhile the group intent to double its usage of synthetic fibers by using recycled plastic waste from other industries(Stand.earth 2021). Furthermore, recycling infinitely cannot be a solution since it is acknowledged that fibers quality decreases each time it is recycled(Bates-Kassatly and Baumann-Pauly 2022). To have an efficient recycling system, textiles shops and brands need to offer take-back systems, some companies already offer this possibility. However, more than half of these companies have in reality no idea of what happens to these clothes. Far from being recycled or effectively reused, some of these clothes are conveniently and blindly given to charity (Changing Markets Foundation 2021).

Product level: Material Substitution

To make a sustainable product, most of the attention is directed on the type of fiber, which is problematic considering that in the entire garment production, only 15% of the climate impacts are attributed to the fiber production (Quantis 2018). However, regarding its impact on the environment, the difference in environmental performance between fibers is rather insignificant (Östlund et al. 2020). Indeed, according to Östlund et al. (2020), most of the impacts are determined by the nature of the energy source and the implementation of environmental management systems to alleviate the production impacts. Consequently, a significant difference in environmental performance can occur for the same type of fiber. The focus needs to be redirected towards producing and using each material the most effectively and sustainably possible.

Business Models

According to the Ellen MacArthur Foundation (2021), four circular business models, which are repair, reuse, resale, and remaking could decouple production and resource use from revenue streams. In this way, the value of resources and productions would be "maximized" at the same time that environmental benefits. These business models follow two principles which are to provide "more use per user" and/or "more users per product". Reuse and rental will be touched upon in the following paragraphs, as they are considered to be the fastest-growing circular business models (Ellen MacArthur Foundation 2021).

Business Models: Reuse or Re-commerce

Re-commerce is currently representing 7% of the market share, and between 2016 and 2019, has grown 21 times faster than the rest of the apparel sector. The second-hand market is increasingly demanded by young generations (McKinsey & Company and Global Fashion Agenda 2020; Thredup 2019). Research conducted by Thredup (2019), based on a survey of two thousand American women, found out that Millenials (25-37 years old) and Gen Z (18-24 years old) are adopting second-hand clothes 2,5 times faster than others. The market share could reach 12% of the market in 2030. Second-hand markets are already beyond capacity, there are more donations that can be handled, moreover, while the number of clothes has increased, the quality has decreased (Klepp and Tobiasson 2022). More and more brands have decided to sell themselves their second-hand clothes, returned to them by clients, which allows brands to continue making a profit without producing new clothes and extracting resources. However, in exchange for a clothe returned, the person gets a store credit which may encourage to buy new products while getting rid of "old" clothes (Aoun 2022). The lifespan of second-hand clothes is rather unknown and unexplored, the same goes with the question to determine if second-hand clothes replace the purchase of new clothes. Having second-hand shops does not seem to lead to a decrease in the number of shops for new clothes. Furthermore, the Thredup (2019) report outlines that resale affects the relationship between clothes and their owner. Indeed, people do not buy with the intention to keep the clothes for a long time but rather consider the resale value before the purchase. Overall, the reuse market does not prevent over-consumption patterns, implying regular and cheap purchases along with a short lifetime.

Business Models: Rental

Considering that people tend to get rid of clothes because they do not like them anymore, renting is presented as a solution to keep providing "new" clothes to people, while decreasing the demand for the newly manufactured clothes. Currently, a survey done in western countries found that around 40% of citizens would be ready to use these systems

(Ellen MacArthur Foundation 2017). Broadly speaking, two types of rental offers exist on the market: rental subscription and short-term rental. A rental subscription consists of paying a monthly fee for getting a certain amount of garments which would be changed frequently, while a short-term rental consists of renting clothes one time for a defined, usually short, duration (Ellen MacArthur Foundation 2017). In comparison with a linear model, rental service can save GHG emissions at the production and end-of-life stage, and on the contrary, increase emissions at the transport, logistics, retail, and use phase (Ellen MacArthur Foundation 2021). Overall, rental could achieve a reduction of GHG emissions of 41% to 60%. However, currently, the environmental benefits of rental are not achieved. The durability of the clothes is determinant. Indeed, if a garment is not durable enough to extend its number of uses and get discarded rapidly, the benefits might be outweighed (Ellen MacArthur Foundation 2021).

3.2 The limitations of the Circular Economy

When interviewed in the documentary movie made by Morgan, A. and Firth, L. (2021) and called Fashionscapes: A Circular Economy, Veronica Bates Kassatly, an independent analyst, stated that when she hears about circularity related to the apparel sector she hears permission to shop" and "see no real circularity". These words mean that by making the promises of being circular, brands can incentive citizens to buy more while being free of guilt.In the seek for continuous growth, the circular economy can be used to legitimate this growth with the argument that waste can be used as a material for production endlessly. The biggest limitation of the circular economy is that it does not directly challenge economic growth and overproduction. Circular economy initiatives, like most sustainable initiatives in the fashion industry, are taking a green growth approach which has demonstrated to be unsure and worth skepticism (Parrique et al. 2019). Moreover, as the goal of a circular economy is to prolong the lifespan of clothes, it is questionable whether it makes sense in a system which has too many clothes to prolong their lifespan without addressing the number of clothes.

3.3 The common challenger: unlimited growth

The materials living standards of western countries are fuelled by an economy depending on resources and energy use, at the expense of nature and social prosperity . However, even though the material richness has increased and individuals possess more clothes than before, it cannot be claimed that people feel more satisfied and well-dressed in comparison with before.

As addressed in a recent brief from the European Environment Agency (2021b), globally the decoupling between economic growth and resource consumption and between economic growth and environmental degradation, advanced by the circular economy, is not a reality and it is very much likely that it would never be possible. European Environment Agency (2021b) further outlines the need for fundamental changes rather than

incremental efficiency gains which are currently provided and proposed by the circular economy. Although fashion brands express ambitious circularity or climate-wise goals, those same brands are still seeking growth. As a matter of fact, while “sustainability” is “trendy”, the volumes of garments sold continue to increase. Indeed, according to Sareen (2022) for Euromonitor International, growth is the top corporate objective for 2021-2022 for fashions professionals. Furthermore, in terms of economic profit, the top five performers were in the last state of Fashion from McKinsey and Company (2021): Nike, Inditex, Kering, LVMH, and Hermes. In the meanwhile, some of these brands are the same groups often claimed as being front-runners in circularity and some are partners of the Ellen MacArthur Foundation (Ellen MacArthur Foundation 2021).

Consumption rate is the major driver of environmental impacts nowadays and its growth overrun any benefices provided by technological change, therefore, by leaving this growth rate continues it will become more and more difficult to counteract its effects. Similarly, letting these groups continue on this continuous growth path while affording them the credits for being sustainable, is likely to be devastating for the future.

The circular economy can lead to better use of the resources, increase the efficiency of the supply chain, reduce the demand for new materials, and therefore reduce the environmental impacts of production and consumption of clothes. However, the circular economy does not prevent greater use of resources if the total consumption continues to increase. That is why a sustainable and successful circular economy system needs to be complemented with a sufficiency approach and could only occur in an economic model not growth-driven.

Some researchers in the textile industry are calling for a new and radical paradigm to release from, and rethink fashion outside of this growth logic (Fletcher and Tham 2019). In the book, *Earth logic*, the authors, both academics in design, are standing for a smaller fashion economy, producing within the Earth’s limits implying a reduction in scale, production, and consumption (Goldapple, L. 2020; Fletcher and Tham 2019). This radical change involving a reduction of both production and consumption, and a downsizing of the economy, could be achieved throughout a degrowth economy (Doyle, M. 2021). In the sixth assessment report from the IPCC, published in 2022, the term "degrowth" is being mentioned for the first time, in both the working group "Impacts, Adaptation, and Vulnerability", and the working group on "Mitigation of climate change", finally acknowledging the concept as a coherent and sound alternative to Green Growth (Parrique, T. 2022a,b). As such, degrowth could open a window for a circular economy free from a green growth dynamic.

Chapter 2

Scope of the Research

The problem analysis revealed the limits of the circular economy within a growth paradigm, especially how it is applied and conceptualized in the textile industry, and demonstrated the importance of a more systemic change, able to limit, slow, and downsize the linear growth of the sector.

Different economic alternatives, such as "slow fashion", "degrowth", and "regenerative fashion", have been reviewed recently in the press around the textile industry, more as a movement than a defined approach, in the hope to face the industry' challenges. (Robinson, F. 2022; Hill, M. 2022; Net Impact staff 2022; Webb, B. 2022). This research will focus on degrowth as the solution for the textile industry because it is considered a more tangible and sound concept than the others, and directly deal with the issue of unlimited growth.

Subsequently, the aim of this research is to explore the different possibilities of business models in the fashion industry in accordance with a degrowth economy, as a means to propose a realistic solution for the industry to align with the Paris agreement, and comprehend how it could practically resemble. Furthermore, in the belief that this transition needs to be assisted by policies, the research will examine current legislative policies development related to the textile industry and how these policies could serve this purpose.

Emerging from the problem analysis and statement, the research question is aiming to reflect specifically on the role of business in this shift of model and values: *How can textile companies shift towards a business model approaching degrowth with the purpose to build a sustainable future for the industry?*

The research question is supported by three sub-questions:

1. *How a degrowth economic system could look like and what are its principles?* An answer to this subquestion is developed in the chapter 3.

2. *What are the principles of a business model approaching degrowth?* An answer to this subquestion is developed in the chapter 4.

3. *How can these principles be implemented in textile companies?* An answer to this subquestion is developed in the chapter 5.

4. To what extent can the European policies support this transition? An answer to this subquestion is developed in the chapter 6.

In this research, the focus is solely made on clothing and not on others products from the textile industry. Furthermore, it has been decided to reflect on companies showing a willingness to stand out from fast fashion. As such, fast fashion brands are not part of the study.

Chapter 3

What is Degrowth?: Conceptual framework of degrowth

Degrowth is a movement and a proposal for radical change (Demaria et al. 2013). Thought to be originated from the French term "décroissance" back in the seventies, the degrowth movement is based on the belief that economic growth cannot be sustainable and that another form of progress is possible for humans without economic growth (Schneider et al. 2010; Demaria et al. 2013). Degrowth is emerging from several intellectual sources and movements, which are culturalist anthropology, the quest for democracy, ecology, ecological economics, justice, and movement around the "meaning of life" (Demaria et al. 2013). If many things at the same time, degrowth does not have a unique and strictly defined concept in practically. However, a commonly found definition used to define degrowth is from Schneider et al. (2010) who describes degrowth as an

> "Equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level, in the short and long term."

Degrowth, or its synonym "post-growth", defend sufficiency and is in opposition to the green growth concept arguing for continuous growth relying on more efficiency (Parrique et al. 2019). Even though degrowth will likely generate a diminution of the GDP, degrowth must not be understood as negative and unsustainable degrowth of the economy like an economic recession entailing social damages. Rather, degrowth is a voluntary and projected non-growing economy operating within earth limits (Alexander, S. 2014).

Furthermore, GDP is considered by degrowth academics as a wrong indicator not reflecting the level of wellbeing and satisfaction, and not taking into account environmental considerations (Schneider et al. 2010).

Within its PhD thesis at both University of Stockholm (Sweden) and the University of Clermont Auvergne (France), Timothée Parrique presents a normative theory of degrowth encompassing 15 principles of economic organisation (Parrique 2020). This normative theory is based upon the comprehensive review of five existing frameworks from the following authors: Latouche, Flipo, Lievens, Kallis, and Abraham (Parrique 2020). The aim of his work is to present a clearer, and more precise concept, intelligible to decision-makers. According to Parrique (2020), the degrowth approach is based on three values: autonomy, sufficiency, and care, and can be summarised in the 15 following universal principles:

> "(1) Resource sovereignty: Be a steward of nature. Those making decisions about resource extraction should be the communities who are most directly impacted by these decisions, who are knowledgeable about ecosystems, and who assume the responsibility of stewards towards nature.
>
> (2) Sustainability: Never deteriorate supporting ecosystems. The economy's throughput should remain within the regenerative capacities of renewable natural resources, within the stocks of non-renewable resources that one has morally allowed oneself to consume, and within the assimilative capacities of nature.
>
> (3) Circularity: Waste not, want not. The flow of energy and materials within the economy should remain as circular as possible with the goal of minimising the extraction of virgin resources and the excretion of unrecyclable and unassimilable waste.
>
> (4) Socially useful production: What is not needed should not be made. Being only a means to an end, production should satisfy needs and contribute to well-being.
>
> (5) Small, not-for-profit cooperatives: People and planet, not profit. All businesses should be centred around the pursuit of a social benefit (including ecological missions), be small enough as to allow a directly democratic governance, and take the form of a cooperative.
>
> (6) Proximity: Produce local, consume local. The shorter the distance between producers and consumers the better.
>
> (7) Convivial tools: Technology as a tool, not a master. Technology should be fit for a purpose determined outside of itself. Technology should be democratically manageable, controllable, reversible, and easily intelligible.
>
> (8) Postwork: Work less, play more. The ultimate purpose of economic organisation is to liberate time for non-economic purposes. The time and ef-

fort dedicated to activities of provision should be determined autonomously, constitute only a small part of social life, and take place in decent settings, both regarding the condition of work and its finality.

(9) Value sovereignty: Wealth is nothing but stories. The process of economic valuation should always be informed by social and moral values. What is considered “valuable” can vary in from one context to the next, with different values being fundamental incommensurable with each other.

(10) Commons: Decide together. Strategic resources should be managed as commons.

(11) Gratuity: Communities instead of commodities. The provision of goods, services, and amenities determinant for the satisfaction of needs should remain outside of the market domain and be organised politically.

(12) Sharing: Sufficiency for all, excess for none. Any surplus should be treated with caution because it bears the possibility of inequality. When in doubt, liquidate the surplus in a way that benefits the worse off.

(13) Voluntary simplicity: Outwardly simple, inwardly rich. People should regain autonomy over their needs and wants and reflect on the consequences of their consumption. They should pursue non-materialistic sources of satisfaction and meaning and adapt their relation with possessions accordingly.

(14) Relational goods: Less stuff, more relationships. People should consume with, and not against, each other. Consumption should focus on the ends (feelings, friendship, love, etc.) and not on the means (products).

(15) Joie de vivre: If I can’t dance, I don’t want to be part of your economy. There is no wealth but life (Ruskin). Economic organisation should be a means to guaranteeing joie de vivre and life should be lived by enjoying the abundance of nature and culture."

This conceptual framework by Parrique (2020) allows a clearer comprehension of what is entailed by the term "degrowth" and encompasses many perspectives to be approached. The different principles give a holistic overview of a degrowth society covering human’s relationship with the environment, work, leisure time, social life, and the economy.

Chapter 4

State of the Art and Framework Conception

In this section, a state of the art regarding the development of degrowth business models will be reviewed. Degrowth is a vision for an alternative and sustainable economy but is lack a clear definition and implementation in real-life cases. The aim is to identify similarities and divergences in the models currently developed, enabling to set up a list of common principles that could be then used as a reference for the following subquestions.

1 State-of-the-Art

Initial research in Google Scholar with the keywords: degrowth and business, and the website Connectedpapers have been used to gather similar papers to "Degrowth business framework: Implications for sustainable development". The papers selected have already performed literature review and are offering frameworks based on these reflections and are the followings, Nesterova (2020), Hinton (2021), Hankammer et al. (2021), Niessen and Bocken (2021) and Parrique (2020).

Concept of business model	
Author	**Concept & findings**
Iana Nesterova, Degrowth business framework, 2020	Based on the idea that degrowth presupposes a downscaling of economic operations, a focus on increasing wellbeing, and a radical shift in values, Nesterova propose an explanatory and comprehensive framework revolving around 3 groups: environment, people, and non-humans, and deviation from profit maximisation imperative. Under the scope of environment Nesterova outlines several attributes: reorientation within Earth's limits, frugality in the use of resources and energy, preference over renewable resources, the durability of goods, localisation of sourcing, production and exchange providing self-reliance, use of simplified and appropriate technology and the encouragement of environmental behaviour inside the firm. Under the scope of people and non-humans, Nesterova argues for the orientation towards worker's wellbeing, decrease labour productivity, democratic decision-making, societal wellbeing via the embeddedness within communities, production centered around the needs of communities, firms belonging to desirable sectors, deviation from traditional marketing and advertising, democratisation and open accessibility to technologies, and the consideration for the wellbeing of non-humans life. Finally, the author list imperatives for the deviation from profit maximisation which are the pursuit of qualitative change and shift of values such as the meaning of success and cooperation between firms instead of competition, small scale is desirable to keep a human scale, sufficiency instead of growth, and alternative ownership patterns like workers or community ownership.
Hinton, Five key dimensions of post-growth business: Putting the pieces together, 2021	Hinton identified five key dimensions that are very often discussed in the post-growth literature. Those five dimensions are the size and geographical scope, the strategy that is the goals and voluntary objectives of the firm, the governance considering the power structure of the firm and whether it is democratic or not, and the incorporation structure which represents the legally-binding institutional status of the firm, and the relation-to-profit which is also a legally-binding component of the firm. In general, post-growth literature argues for rather small and local firms, a strategy focused on sufficiency, wellbeing, and collaborative values, democratically governed, structured in cooperatives or not-for-profit incorporation (association, foundation, charity), and being not-for-profit. Hinton decrypts those dimensions and the interactions between them, for him some are more decisive and have the capability to determine, or at least influence considerably the others. Indeed, the relation-to-profit and the incorporation structure are legally binding, they can either constrain or guide other dimensions to change. The relation-to-profit is even more determinant as it reduces the choice of potential incorporation structure. Despite having a considerable weight in the changeability of a firm towards a post-growth business, those two dimensions receive less attention in the literature because of their legal nature leading to more technicality and complexity that is more difficult to grasp by multidisciplinary researchers.

Hankammer, Principles for organizations striving for sustainable degrowth: Framework development and application to four B Corps, 2021	According to Hankammer, the concept of degrowth for business is going beyond the concept of sustainable business models and is more radical. At the first step of their research, the researchers build a framework for organisations approaching degrowth based on a state-of-the-art of the literature around degrowth and sufficiency, between 2008 and 2018. This framework encompasses 11 eleven principles summed up in the following lines. The business's purpose is driven by the environment and society which entails a different vision of corporate success. The business is promoting/ normalising degrowth thinking via for example communicating another approach to life beyond materialism. The environmental impacts of the business activities are thought to be reduced with circular practices along their value chain, furthermore, the design of the product and its services seek durability and should not be subject to trends. The business must encourage sufficiency fostering the absolute reduction of demand and unnecessary resource use. Offering product as a service, which means enabling the use and share of products instead of owning is an important component of a business approaching degrowth. The organization is preferably democratically structured and owned. The organisation ensures wellbeing of its employees, with reduced working hours and more leisure time. Community embeddedness of the firm enables a more adequate use of resources depending on the community's needs and allows control over the business's activities. Businesses can empower communities by promoting autonomy and capacity development. free from competition, the business approaching degrowth should be open to collaborating and sharing knowledge with others. After developing this framework, Hankammer, test its application in four B Corps businesses. None of the four business studied explicitly approaches degrowth, although all of them are purpose-driven for the good of the environment and society, all are promoting sustainable life choices and goods that are designed responsibly, and shows some efforts for a democratic decision-making process and encourage employees to fulfill a good work-life balances, support and are committed to their communities despite being at different levels. Hankammer concludes that these B Corps are not fulfilling perfectly the principles defined, but are partly approaching degrowth. The most sensible point detected by Hankammer is the pursuit of growth, indeed, none of the companies reject corporate growth totally, the growth is believed to enable them to benefit society and the environment. As such, B Corps is more in line with a green growth approach. The authors also readjusted its framework, according to its analysis, adding solidarity in the leadership commitment and equity but also after the screening of more recent literature going from 2018 to 2020, considering three new aspects: adding a separate principle for the ownership structure being preferably collective, the incorporation of care and unpaid labour, and integrate the role of spirituality and relationship with non-humans beings.

Niessen and Bocken, How can businesses drive sufficiency?, 2021

The authors conceptualize a novel framework for business driven by sufficiency by bringing together English and German literature. As such, to build their framework, the authors merged two concepts, one following the waste hierarchy (Refuse, Reduce, Rethink) on horizontal axis and another one from the German literature following 4 dimensions as a vertical axis: less clutter, less speed, less distance and less market. The matrix has then been filled with strategies that businesses can undertake to drive sufficiency, going from incremental changes to more fundamental changes in the business strategy.

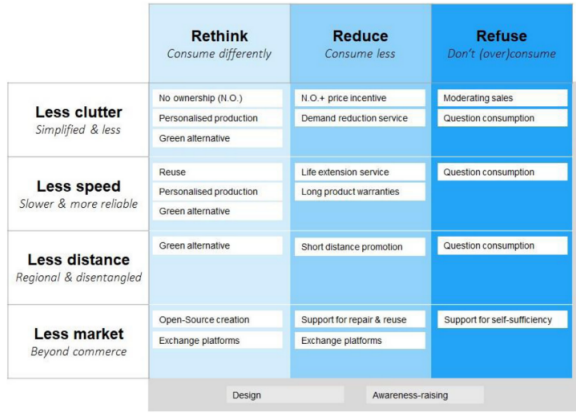

Fig. 3. Business for Sufficiency (BfS) framework.

Niessen and Bocken, analysed the practices of 105 companies. From their observations, "refuse consumption" is the less commonly applied category, while green alternative and design are the most used interventions. The authors explain this trend by the facility for businesses to turn to green alternatives rather than changing their whole business model. Some companies use awareness-raising for questioning consumption rather than moderate the sales (not offering sales). This tendency is explained, via the interviews, by the fear of companies to lost their profitability, which also explains why they do not engage in sufficiency strategies that can restrict profits. The authors also address the proximity between sufficiency strategies and the circular economy, except that sufficiency is more radical and requires a reduction in consumption. Businesses also argued that the consumerist culture was a difficult hurdle to overcome, and a broader cultural change would be necessary. Furthermore, companies pursuing sufficiency state that they need to work harder but it is feasible and that they are driven by idealism and sustainability. On the question of growth, most companies have an interest in continuing to grow but rather in the idea to replace unsustainable companies. Policies are considered to have a role to play in supporting businesses pursuing sufficiency and not the ones that are unsustainable.

Timothée Parrique, The political economy of degrowth, PhD thesis, 2020	According to Parrique, from the perspective of degrowth, firms should follow three mains characteristics, sum up by: (1) not-for-profit, deprioritising the pursuit of profit meaning the business can generates a revenue/ profit via selling good or services, but the profit is a mean and not an end, indeed, the business is expected to be mission driven with a socio-ecological goal. (2) small enough, in power, size and scale, to be democratically managed, avoiding monopolies, abusive power and disconnection with socio-ecological harm. (3) most firms should be collectively owned as cooperatives, which means the distribution of ownership and governance of the companies, leading to more equity, democracy but also others numerous advantages such as cooperation, autonomy, conviviality, labour-intensive and more performance.

The five papers reviewed offer different perspectives on a business model for approaching degrowth, with some similarities and novelties. There are no incompatibilities in the principles advanced in these papers. In the next section, the different principles advanced in the literature will be gathered and analysed to frame an overarching framework.

2 Framework for a business model approaching degrowth

A compilation of the principles identified in the state-of-the-art for a business approaching degrowth has been made with the appearance in the literature reviewed, represented in the figure 4.1 below. The principles have been classified into three categories: structure, production, and strategy. The structure category refers to characteristics that can be inherent to the legal form of a company (relation to profit and incorporation structure) but also is defined in the rules of the company and how it is governed. The second category refers to the production of the company, how clothes are being produced and how much. The third category is including all relevant characteristics that can be reflected in the strategy of the business, that is to say, the direction, aim, and scope of its production, the ethical values pursued, and how it is reflected in the communication strategy. The principles have been rephrased, and summarized, to avoid redundancy of very similar principles with very similar meanings. Underneath is represented the matrix used to reflect on the principles and how often they have been mentioned.

This matrix allows drawing some concrete observations derived from the state-of-the-art. It can be noted that most of the principles outlined in the literature have been backed up at least an additional time in the literature. Some principles are almost unanimous such as the alternative ownership model, the democratic decision-making,

Principles / Authors	Nesterova	Hinton	Hankammer	Bocken	Parrique
Structure:					
Alternative ownership model (e.g: cooperative)	X	X	X		X
Democratic decision-making	X	X	X		X
Not-for-profit institutional structure		X	(X)		X
Production:					
Decrease in productivity	X				
Circular practices (products and services)		X	X	X	
Durability of goods	X	X	X	X	
Reduction of resources, energy use and production	X		X	X	
Preference to Renewables resources	X		X		
Market Strategy:					
Collaboration and knowldege sharing	X	X	X		
Community embeddeness	X		X		X
Consideration for the wellbeing of non-humans	X	X			
Empowerement of communities			X		
Localisation	X	X	X	(X)	X
Moderating sales				X	
Normalisation of degrowth through communication			X	X	
Open source of software and open access of technology	X	X		X	
Preference to simplified and appropriate technology	X				
Production aimed at the needs of society	X			(X)	
Promotion of environmental behaviour to employees	X				
Pursuit of workers' wellbeing	X	X	X		
Shift in values (e.g: success)	X		X		
Small scale	X	X	X		X
Sufficiency driven	X	X	X	X	
Undesirability of advertising	X				

Fig. 4.1: Compilation of the several principles outlined in the literature. An X stand when the author describes, at least partly the principle. An (X) stand when the author only briefly mentioned the principle.

the durability of goods, localisation, and being driven by sufficiency. Principles mentioned only once are still considered and taken into account for the development of the framework as the frequency of appearance cannot be considered as an indicator of the relevance of the principle. For the construction of the framework underneath, some principles have been reunited under one. It is the case for the durability of goods which is considered to be integrated in the broad terms of circular practices (products and services). "Community embeddedness" and "empowerment of communities" have been merged, the same goes for "open source software" and "preference to simplified technology", and "promotion of environmental behaviour" and "normalisation of degrowth through communication".

This newly developed framework 4.2 represents the different principles that businesses can undertake to approach degrowth. It is important to note that there is no classification or hierarchy between the principles and there is no such thing as thresholds for being considered as a business approaching degrowth depending on how many principles are being met. Rather, the framework serves as an indication of the actions

Fig. 4.2: Framework for businesses approaching degrowth, with characteristics divided in 3 categories

that are considered important for a company to create a business model in line with a degrowth society.

Characteristics related to the organization's structure (governance, relation to profit, and incorporation structure)

- **Alternative ownership model**: This principle is widespread in the literature. This is a legally binding element related to the property right of the company. Cooperative structures are often referred to as a solution, particularly the ones owned by workers. (Sources indicated in 4.1)
- **Democratic decision-making**: Implementing a democratic decision-making process into the governance of the business seems very important and is backed up in most literature. This principle can go in hand with the ownership model, as for some structures such as cooperative, democratic decision making is facilitated. Some aspects defining the governance structure and by extension how decisions are taken are partly legally binding depending on the incorporation structure and

partly non legally binding as some measures to improve the democracy in a business can be undertaken no matter the incorporation status. (Sources indicated in 4.1)

- **Not-for-profit institutional structure**: The relation-to-profit is a legally binding element that depends on the incorporation structure. Being profit-driven is recognised to be problematic in most literature and not-for-profit is encouraged, however, it is stated that being for profit is not necessarily incompatible with degrowth as it depends on how these profits are used. Overall, what is important is that profit must be a means for others' purposes and not an end.(Sources indicated in 4.1)

Characteristics related to the organization's strategy

- **Collaboration and knowledge sharing**: Cooperation between firms as the antonym of competition, which is thought to be the source of capitalism, is considered desirable for degrowth. Cooperation is, indeed, an efficient practice to enable sharing of resources between firms but also sharing knowledge and best practices. (Sources indicated in 4.1)

- **Community embeddedness and empowerment**: bring benefices to the community is central, provides good for the community directly based on its needs. By being embedded in the community, the firm can share knowledge with its members and vice versa, contributing to capacity development and autonomy in the population. (Sources indicated in 4.1)

- **Localisation**: Localisation consists of having local sourcing, production, and exchange. Localisation of activities is a principle that is unanimously indicated to offer several outcomes in line with degrowth. These positive consequences are a more efficient use of resources and energy, and better control of activities that are not externalized miles away. Linked with the community embeddedness, because localisation can support community embeddedness, as well as support the independence of the community. (Sources indicated in 4.1)

- **Small scale**: There is no "rightsize" business in the degrowth literature, even though SMEs are often claimed to be around the adequate size. Rather small size is encouraged for different reasons but mainly because it is thought to favour democracy and embeddedness in the local environment. Keeping a small to medium size is also in line with limiting growth, maintaining a size rather than wishing to grow. (Sources indicated in 4.1)

- **Sufficiency driven**: Sufficiency is often mentioned and is the subject of a business model on its own by Bocken, in the remaining literature, sufficiency refers to the non-pursuit of growth in productivity, and capacity, but also to encourage sufficiency in consumption via establishing a close relationship with clients. (Sources indicated in 4.1)
- **Pursuit of workers wellbeing**: Wellbeing is at the heart of the degrowth thinking, it is therefore evident that it must be pursued by businesses to the extent the production is oriented towards wellbeing, in creating meaning-full and despecialized jobs, reduce the number of working hours and increase leisure time. (Sources indicated in 4.1)
- **Simplified and open-access technologies**: Degrowth thinking supports the idea that powerful technologies are provoking the most environmental harm, therefore, a preference for simplified technologies is shared. Additionally, technologies should be in open access to join the idea of sharing knowledge and collaboration. (Sources indicated in 4.1)
- **Shift in Values**: A shift in values is essential for approaching degrowth as currently businesses are mainly driven by maximizing profit which is a synonym for success. For approaching degrowth businesses must pursue a qualitative change. (Sources indicated in 4.1)
- **Consideration for the wellbeing of non-humans lives**: As part of coexistence with the environment idea in the degrowth movement, the wellbeing of non-human lives, and nature in general, must be respected. In practicality, this principle is translated into the good treatment of animals and non-violence. (Sources indicated in 4.1)
- **Normalisation of degrowth through communication (joined by undesirability of advertising)**: Businesses approaching degrowth should influence the consumption behaviour in a way that is promoting the absolute reduction of demand and question consumption, unsustainable options must be completely out of the offers. Advertising should be restricted as well as others marketing aimed at maximising profits. This communication should be extended to the employees to favors environmental behaviours. (Sources indicated in 4.1)
- **Production aimed at the needs of society**: The offers proposed by the businesses are encouraged to be centered around society's needs, and therefore belong to the necessary or desired sector of activity. (Sources indicated in 4.1)

Characteristics related to production choices

- **Circular Practices**: The integration of circular economy in degrowth thinking is considered essential and can be considered inherent to this alternative model of society. As the result, circular practices retaining resource's value in a closed-loop, such as repair, take-back services, design of durable and repairable products, provide services and alternatives to ownership, are omnipresent in the literature and deeply encouraged. (Sources indicated in 4.1)
- **Decrease in productivity**: A decrease in productivity is considered positively in the degrowth mindset as it allows a better share of labour between people and takes distance from the productivism mindset focused on the volume of goods produced. (Sources indicated in 4.1)
- **Preferences to renewable resources**: Use of non-renewable resources and energy should be avoided as much as possible to reduce the environmental impacts of activities. (Sources indicated in 4.1)
- **Reduction of resources, energy use, production, and consumption**: An absolute reduction in the use of resources, energy, and reduction in production is necessary to stay within the Earth's limits. This can be done by providing less resource-intensive consumption offers. (Sources indicated in 4.1)

The description of each principle highlights the interconnection between some of them. The fulfilment of one often leads to or at least contributes to the fulfilment of others. Environmental concern is central to the degrowth business model thinking, as well as social and societal matters. The degrowth business model is offering a veritable "sustainable" model encompassing social, environmental, and economic fulfilment, if economic fulfilment is considered in a different manner as it is now. The potentiality for this framework to be adopted by the textile industry is going to be analysed in the next section via critical studies based on interviews and critical analysis.

Chapter 5

A degrowth mindset in the Textile industry

A degrowth mindset is emerging in the textile industry (Webb, B. 2022). Businesses are more and more trying to sell lifelong pieces of clothes, going at the opposite of fashion based on trends. This "anti-fashion" movement relies on a timeless design with exceptional quality and is united around the credo "less but better". Terms like "slow fashion" and "slow wear" are often referred to as well. Businesses following such an approach does not necessarily called themselves as "degrowth" business, and might not even consider it. Even those who are likely in line with some degrowth characteristics for businesses, such as not-for-profit or social enterprises might not be aware of degrowth. However, businesses following a "not-for-profit" or a "social enterprise" model are difficult to find in the textile industry.

This section aims at reflecting on the conceptual framework of degrowth and its relevance for its potential agents, that is textiles firms. Brought together, degrowth's framework and agents could unveil practical examples of a society living in a degrowth economy while answering the third subquestion: *How can these principles be implemented in textile companies?*

To provide elements for answering this question, two methods have been deemed relevant to use, interviews and critical analysis of textile brands. Both methods can reveal if there is a correlation between taking strategies for reducing environmental impacts (e.g: circular practices, locality) and a predisposition for being in line with degrowth. Supplemented with the outputs from the interviews, the analysis can give insights on the current state of textile companies in their work for approaching degrowth, and reveal what kind of obstacles or advantages the textile industry might have in regards to moving towards degrowth.

1 Interview

Several companies have been contacted and invited for conducting interviews. The companies contacted were chosen either because they are claimed in the media for approaching degrowth, such as Asket by Pinnock, O. (2021) and Patagonia by Webb, B. (2022), or because they are pursuing alternative business models with a limited or non-pursuit for growth, most of them in accordance with what can be called a "slow fashion" movement. In that idea, the french label "SLOWEARE" have been contacted to direct the research toward interesting and innovative brands. An interview guide has been prepared with a set of common questions, and a few specific to each company. The companies contacted and their main characteristics are represented in the table below 5.1:

Table 5.1: Firms contacted and their main characteristics

Companies contacted and their business strategy				
Name	**Structure**	**Answer**	**Strategy**	**Size**
Ardelaine	Cooperative following a legally binding french SCOP [a]	No answer	Through its structure, Ardelaine is democratically governed. Ardelaine is engaged towards ecology, support territorial labour and activities, and fair prices along the value chain (Ardelaine n.da).	60 employees
Asket	Public limited company	Negative answer	Create "forever" clothes. Follow "Asket principles" involving full transparency and an impact receipt (Asket n.d).	?
Atelier Unes	Legally binding solidarity enterprise of social utility	No answer	Create durable clothes made for lasting and co-creation with clients (Atelier Unes n.d).	7 employees
Laines Paysannes	Cooperative following a legally binding french SCIC [b]	No answer	Aim to valorize local wool and cultural heritage throughout the making of eco-designed textile products (clothes and home) (Laines Paysannes n.d)	7 employees
Label Jaune by Les Petits Riens	Belgium ASBL [c]	Positive answer	Upcycling of collected clothes but not fitter for resale (Les Petits Riens n.da).	3 employees (see interview 9)
Les Hirondelles	Mission driven Enterprise, no legally binding	Negative answer	Aim at reducing the environmental impacts of the textile industry designing clothes from industrial waste. Governance following 6 principles inspired by "Opale entrerprise" defined by Laloux (Les Hirondelles n.d; Alvernhe, C. 2022).	?
LINportant	Cooperative following a legally binding french SCIC	Positive answer, then no answer	Aim to develop an organic, local and resilient sector for linen. Governed democratically (LINportant n.d).	4 employees
Loom	SAS, public limited company	Negative answer	Create durable, local and organic clothes in lesser quantity. Active in sufficiency communication (Loom n.d).	5 employees
Patagonia	B corps	No answer	Aim at providing durable, repairable and recyclable outdoor clothes minimizing environmental harms (Patagonia n.da).	2120 employees in 2016 (Khmara and Kronenberg 2018)

[a] SCOP= Société coopérative et participative= Cooperative and participatory company (FR)
[b] SCIC= Société coopérative d'intérêt collectif= Cooperative company of collective interest (FR)
[c] ASBL= association sans but lucratif = not for profit association (BE)

Among the 9 companies contacted, only one interview has been successfully carried out. Most companies did not provide an answer to the contact email, while some others provided a negative answer. Consequently, most of the empirical data will emerge from the critical analysis.

2 Critical analysis

Of the companies contacted for the interviews, some have been selected to be analysed in this part. It has been decided to select 3 companies for the critical analysis and deemed more insightful to select companies presenting different legal statuses. As a result, Patagonia which is a B corps, Label Jaune by Les Petits Riens which is an ASBL, and Ardelaine which is a cooperative, has been chosen for this exercise. Furthermore, these three companies are existing for a long time and some information was available easily on the internet and in the literature. Less information was available specifically for the Label Jaune but an interview has been carried out with them. The criteria "production for society's needs" has been removed from the analysis as it considered that textiles and clothing are a need of the society.

2.1 Patagonia: General overview

Patagonia is an outdoor retailer based in California, highly renowned throughout the world for taking impressive environmental actions (Isobella Wolfe 2022). Patagonia is well documented and analysed several times in the literature, especially regarding sufficiency driven business model by authors like Rattalino (2018) and Bocken and Short (2016) and regarding its status of Bcorp by Hankammer et al. (2021). Whether Patagonia is fitted for degrowth has been studied by Khmara and Kronenberg (2018). Patagonia is quite transparent and acknowledges its carbon emissions including the supply chain and aims at being net-zero by 2030 across its whole value chain (scope 1, 2, and 3) (Patagonia n.db,n). Although the company is famous for its campaign "don't buy this jacket", encouraging potential clients to rather not to buy a new jacket and keep their old, this communication raised a question about the real purpose behind it because of the rising popularity of the brand resulting from it (Gossen and Kropfeld 2022). Patagonia is certified as a B Corporation since December 2011, certifying its engagement in bringing benefits to society (B Corporation n.d). Patagonia is also engaged since 1985 in providing 1% of their sales to nature preservation and restoration projects (Patagonia n.dd). The founder of Patagonia decided in 2012 to create an NGO called "1% for the Planet" to encourage other businesses to do the same(1% for the Planet n.d). Patagonia is an international company that has experienced an important growth within just a few years, indeed, it has been estimated to have tripled its profits, and doubled the scale of its operations between 2008 and 2013 (Khmara and Kronenberg 2018). Especially because it is a private company, Patagonia lacks some transparency which makes it

difficult to accurately assess the different commitments of the company (Khmara and Kronenberg 2018).

Table 5.2: Critical Analysis of Patagonia

Analysis of each firm compared with the framework principles			
Name	**Structure**	**Strategy**	**Production**
Patagonia	• Privately (family) owned by the founder and its wife (Khmara and Kronenberg 2018). • Registered a benefit corporation in the US since 2011, adopting specific benefit purposes commitments (B Corporation n.d). • No information on the governance have been found.	• Wellbeing of animals: aligned with "Five freedoms", Responsible down standards, and claim to use non-mulesed wool (Isobella Wolfe 2022). • Workers' wellbeing: ensure living wage on 39% of their factories in 2020, data from before covid (Patagonia n.de). Friendly working environment with high satisfaction, paid parental leaves, on-site child care center, flexible working time (ONLY for employees not for the supply chain) (Khmara and Kronenberg 2018). For the rest, existence Fairtrade program but no ownership of the companies manufacturing so limited control (Patagonia n.df). • "Activist" campaign and communication for encouraging people to not buy a new jacket and internal activism with "Zero waste week" and reimbursement for commuting to work (Khmara and Kronenberg 2018; Tom & Jerry 2021). • Scope: Global, Patagonia does business all over the world and has factories and mills all over the world as well with a large share in Asia (Patagonia n.dg). • Localisation: supply chain dispatched worldwide • Shift in values: The notion of success is defined by the owner of Patagonia as buying more than making good products but also addressing environmental issues (Khmara and Kronenberg 2018). • Collaboration: Involved in several coalitions with other companies and usually share new technologies (O'Rourke and Strand 2017) • No locally and community embeddedness, but try to create a community with their "stories" (Patagonia n.dh). • Sufficiency: Still growing, had an experience of the zero-growth model but did not work out (Bocken and Short 2016). • Technology: Active in innovation for reducing the impact of their product's production like P.U.R.E manufacturing technology halving CO2 emissions (Remington, C. 2020). Patagonia is said to share its best practices with other companies including direct competitors (O'Rourke and Strand 2017).	• Renewable: 100% of renewables energy used in the US (Patagonia n.de) but 96% of their emissions are coming from their factories outside of the US. Work with synthetics but 94% of their lines is using recycled materials (Patagonia n.de) and goal to eliminate virgin petroleum fiber by 2025 and only use either renewable or recycled materials by 2025 (Patagonia n.dc). • Circularity: garantee on the products (Rattalino 2018), over 100 000 repaired product in 2020 and free online guide for repair. Worn & Wear internal reselling platform (giving credits for buying on used and new garments) (Patagonia n.di). Recycle worn out clothes (Khmara and Kronenberg 2018). • Productivity: No information found, however the supply chain is subcontracted to other companies that are most likely focused on productivity. • Reduction: encourage the reduction of consumption and offers less resource intensive options (Gossen and Kropfeld 2022). However, no clear goals is communicated.

2.2 Patagonia: Critical analysis

The table 5.2 is presenting the assessment of each principle from the framework 4.2 which serves as a basis for the following analysis.

Although Patagonia is very much aware of its environmental and social impacts, the company does not escape from the inherent problem of the globalisation system it is working in, consequently, it adopts a "mitigation strategy", trying to mitigate both its environmental and social impacts via many initiatives (Patagonia n.dj). Similarly, the company is putting a lot of effort into researching new technology that could diminish the environmental footprint of their production (O'Rourke and Strand 2017).

Even though they engage in due diligence related initiatives, eventually it is impossible to track down the product bought and the working conditions of the workers who made it. Regarding the strategy's category, some criteria are not met by Patagonia, essentially because of their large scale and their relation to profit. The scale and scope of their activities are not compatible with a localism approach and with community embeddedness. In parallel, the legal structure of Patagonia, is not framing the company to a specific governance structure offering more democracy or limiting their relationship to profit.

This problem of scale has been touched upon by the founder, Yves Chouinard, himself, he declared in the preface of his book *"Let my people go surfing: the education of a reluctant businessman"* that

> "At Patagonia we have started to prepare for what we think will become a more locally based economy. A global economy is unsustainable ... We must begin to find a way to produce our goods locally." (Chouinard 2006)

Regarding its legal status, Patagonia is privately and family-owned, which is not an alternative business model highlighted by the degrowth literature, encouraging employee ownership. Even though privately owned can be considered preferable for degrowth compared to public ownership as there is no pressure from shareholders to increase profits. By being a benefit corporation, Patagonia ensures to be driven by a social and/or environmental mission generating public benefit while still being for-profit (B Lab n.d). It is, however, difficult to determine to what extent their profits are used for these missions.

The anti-consumerism communication strategy has achieved the exact same opposite the brand was expecting and advocating for, at the sales of Patagonia exploded (MacKinnon, J. B. 2015). This result is interesting for the reflection on the impact of communication.

Yvon Chouinard has the belief that

> " If we wish to lead corporate America by example, we have to be profitable" (O'Rourke and Strand 2017).

As such they use their relationship to profit and the fact they are making profitd as an example to inspire and incentivize others companies to follow the same business model and concern for the environment.

Despite its numerous efforts, Patagonia, like other B corporations as reflected by Hankammer et al. (2021), seems to be more in line with green growth than degrowth. Patagonia is, indeed, relying on different strategies to alleviate its environmental impacts with communication, innovations, due diligence, and coalition, but is still in a growth dynamic.

2.3 Label Jaune by Les Petits Riens: General overview

Label Jaune is an upcycling brand launched in 2019 by the reselling not-for-profit association "Les petits riens", based in Belgium (Les Petits Riens n.da). Although Les petits riens is very old as its origin goes back to the thirties, created with the prospect to help disadvantaged populations, Label Jaune has been launched recently and has not been the subject of research (Les Petits Riens n.db). To gather data and information on the project, an interview has been carried out with Barbara Malik, the project coordinator of Label Jaune.

Label Jaune is a mission-driven project with a triple ambition which is to bring positive impact socially, environmentally, and economically. Les Petits Riens considered that a too large part of the donations of textiles they were collecting was destinated to be recycled or exported, thanks to the willingness to develop more value from these textiles the project Label Jaune has started (Les Petits Riens n.da). To illustrate, on an average of 6500 tonnes of textiles collected each year by the organisation, only 45% were sorted for resale (Hage, L. 2022). Label Jaune start out with subsidies from Brussels's program called "Be Circular" but it is now running without. Based in a workshop in Brussels, Label Jaune is producing in average 20 upcycled pieces per week (Hage, L. 2022).

Table 5.3: Critical Analysis of Label Jaune

Analysis of each firm compared with the framework principles			
Name	**Structure**	**Strategy**	**Production**
Label Jaune	• Not-for-profit association and social economy enterprise. • Mission-driven. • Democratic decision making very present naturally in the organisation culture, with formation today (see interview 9).	• Wellbeing of animals: is not addressed as the organisation is not using virgin materials. • Workers' wellbeing: friendly working environment where hierarchy is very little present (see interview 9). • Degrowth and sufficiency communication is not something explicitly made, although they try to change consumer behaviour via showing the value of upcycled pieces, the handicraft, timelessness, and uniqueness (see interview 9). • Scale: Small : only 3 employees with volunteers, selling clothes in Brussels (see interview 9). • Shift in values: not pursuing profit but a social mission • Collaboration with others upcycling workshop, styling schools (see interview9). • Community embeddedness and empowerment: inclusion and formation of left out people, work insertion in collaboration with local authorities and schools. Empowerment of volunteers by allowing them to work on sewing techniques (see interview 9). • Localisation: Local sourcing, the clothes collected are from Belgium, sorting, upcycling, selling in Brussels (see interview 9). • Sufficiency: No looking for exporting their clothes, want to keep a rather small outreach limited to Belgium (see interview 9). • Technology: Use of very simple machines like household sewing machines that are collected (see interview 9).	• Circularity: Upcycling: Create value and new garments out of discarded clothes destined for exportation or recycling. • Renewable: material is sourced from waste, no specific use of renewable energy (see interview 9). • Productivity: the productivity is very low as everything is made by hand, upcycling takes a lot of time, as it is a work of creation and adaptation to the uniqueness of each piece collected and sorted (see interview 9). The production is therefore low. • Reduction: Label Jaune is upcycling discarded clothes which is a practice not resource intensive.

2.4 Label Jaune: Critical Analysis

The table 5.3 is presenting the assessment of each principle from the framework 4.2 which serves as a basis for the following analysis.

Because Label Jaune is a Belgian ASBL (= not-for-profit association), the legal structure leaves no doubt about the relation to profit and the authenticity of the values carried by the group.

During the interview, it seemed that the degrowth concept was distant from the interviewee's mind, or at least not a driving force for the association. However, Label Jaune by Les Petits Riens is in reality in line with a majority of principles for a business model to approach degrowth. Indeed, at all levels of the structure and strategy, whether it is concerning collaboration, localisation, community embeddedness, or technology, the business model of Label Jaune can be considered as a business in line with a degrowth mindset.

Even though the workshop is not using renewable energy, the use of energy needed for production is certainly low considering the production and technology used. As a reselling and upcycling concept, Label Jaune is a key element of the circular economy in itself. However, it is not offering further circular options like warranty, or repair service, for its clients.

For the moment, Label Jaune is only at its beginning and intends to continue growing year after year to be able to offer a professional integration for more people while revaluing more textile waste. In spite of that, the outreach is clear, the objective is to be able to sell their upcycled products in their network in Brussels and not further (see interview 9).

2.5 Ardelaine: General Overview

Ardelaine is a cooperative, more precisly a SCOP, based in Ardèche, France. The origin of Ardelaine goes back to the seventies when a group of people stunned by the fact that wool producers were throwing their wool away, decided to create a new dynamic in the sector. It then took several years to create the cooperative and a business, officially created in 1982 (Ardelaine n.db). Because of its longevity and success, Ardelaine is well known in the cooperative's environment. As such, some information can be found on the internet, but the book *Moutons Rebelles* written by Barras (2014), one of the founders has also been used for this analysis. For the fiber, Ardelaine is working almost exclusively with wool and with organic cotton from Egypt and is taking care of a large part of the supply chain excluding the sheep farming and cotton cultivation (Ardelaine n.dc). Ardelaine has been labeled "Entreprise du Patrimoine Vivant" by the Ministry of Economy in France, for conserving exceptional craftmanship (Ardelaine n.dd). The status of a SCOOP is defined by the International Cooperative Alliance (n.d) as:

> "Cooperatives are people-centred enterprises jointly owned and democrati-

> cally controlled by and for their members to realise their common economic, social and cultural needs and aspirations. As enterprises based on values and principles, they put fairness and equality first allowing people to create sustainable enterprises that generate long-term jobs and prosperity. Managed by producers, users or workers, cooperatives are run according to the 'one member, one vote' rule."

Besides from this SCOP status, Ardelaine is ruled by several principles established by the International Cooperative Alliance (ICA) and has a clear, defined, and transparent allocation of the revenues resulting from its activities which are divided into three purposes: 45% for the employees' salaries, 45% on savings belonging to the cooperative, and 10% for return on capital (Ardelaine n.de). This capital is belonging to the salaries in the majority. Even if, at first, investing in the capital was not mandatory for the salaries, it then became an obligation (Lucie Tourette 2016). All the employees receive almost the same salary which is the SMIC (=legal minimum salary in France), except for the directors that are receiving 1,2 times the SMIC (Lucie Tourette 2016).

Beyond revitalizing the local wool sector and creating employment, Ardelaine has also developed touristic and cultural activity in the valley (Ardelaine 2016).

In terms of growth, Ardelaine went from 1 employee in 1982 to 48,5 in 2015, and is economically prosperous since 2006. Moreover, Ardelaine has multiplied its activities with a coffee-library, restaurant, workshop open to the public, and a canning factory (Ardelaine 2016).

Table 5.4: Critical Analysis

Analysis of each firm compared with the framework principles			
Name	**Structure**	**Strategy**	**Production**
Ardelaine	• SCOP = cooperative and participatory company. It is owned in majority by the employees. • governed democratically, 1 person equals 1 vote. • Profit can be made but is allocated strictly, mission-driven.	• Localisation: Local sourcing and local supply chain, refused to export their product (Barras 2014). • Scale: Around 60 employees (Ardelaine n.df). • Sufficiency driven: express the want to stay local which reduce their growing potential. • Shift in values: Mission driven, the profit not being an end but a mean. • Collaboration: Collaboration and with other cooperatives with visits organized (Ardelaine and Les Scoop n.d), collaboration with local authorities (Barras 2014). • Workers' wellbeing: The employees benefit from a democratic voice in the cooperative and a from diversity of tasks offered to them (Ardelaine n.dc). No engagement towards workers' wellbeing is made but it makes sense because the cooperative is ruled by the workers so it does not need to have further engagement. • Technology: usage of very old machinery (more than one century year old) and use and transmission of very old craftmanship (Ardelaine n.da). • Animals' wellbeing: says to work with farmers respectful of the wellbeing of animals (Ardelaine n.da). • Community embeddedness: embedded in the community and territory, created a museum about wool with workshop, organisation of festival of wool, interventions in schools and universities and library with coffee and restaurants with products from local producers (Ardelaine n.dg) (Ardelaine n.dc). • Communication: Ardelaine is selling online but also directly by their presence in local markets where they communicate about the quality of the products and the social and territorial goal of the cooperative (Ardelaine n.dc).	• Circularity: Offer very durable clothes. No use of recycled materials was communicated. Propose refurbishment for their mattress (Ardelaine n.dh). • Productivity: Craftmanship and ancient machinery so productivity is not a priority. • Renewable: use of renewables materials, almost exclusively wool, use of renewables sources of energy with hydroelectric power plant (Guedon, M. 2022). • Reduction: No specific reduction target goal but the production is low.

2.6 Ardelaine: Critical Analysis

The table 5.4 is presenting the assessment of each principle from the framework 4.2 which serves as a basis for the following analysis.

Ardelaine is born from a deep willingness to preserve and revitalize cultural local heritage. Consequently, the project is naturally integrating itself in several principles peculiar to degrowth, such as localisation, scale, and community embeddedness. Furthermore, the legal structure of the SCOP is also inherently in line with degrowth regarding the ownership and governance structure defined by this status.

What is particularly interesting in Ardelaine, for this study, is the control and responsibility of almost the complete supply chain. This can provide a good illustration of how to manage a whole textile supply chain while having a business model approaching degrowth.

Ardelaine has experienced continuous growth for the moment. It is difficult to hypothesize how can Ardelaine can grow in the future, as with the time they took care of more part of the supply and extend their activities, they might continue in the same dynamic in the future. Controlling a larger part of the supply chain could allow Ardelaine to strengthen its local approach and apply the principles more largely.

The principle weaker than the others is the one about circularity. Even though Ardelaine is manufacturing very durable and high quality, and propose refurbishment for their mattress, their offers could be extended. However, the durability of their products is the prior and most effective practice in terms of circularity to prevent waste.

2.7 Conclusion

Surprisingly, the two companies with the best affinity with a business model approaching degrowth are the companies showing no interest in degrowth. Furthermore, they do not seem to provide a lot of efforts to lower their environmental impacts either. It seems that compatibility with degrowth is not something that can be pursued with numerous initiatives if the system followed by the firm belongs to a growth-driven and global economy. The scale and the legal structure seem to be the most influential principles, actively impacting several others principles. It is, indeed, more complicated to be embedded in a community when the scale of the operations is international. As such, the size of the enterprise and its scale of operations look like an essential characteristics for building a business model approaching degrowth. Similarly, the ownership model defined by the legal structure of the company seems influential in the relation to profit and governance. However, large and for-profit corporations have the potential to perform positively in a majority of principles, as demonstrated by Patagonia. From that perspective, because even a large corporation like Patagonia succeeded in most principles, this framework for business model approaching degrowth does not seem too radical.

Even though, it is producing new clothes the example of Label Jaune is different and cannot be compared similarly to Ardelaine and Patagonia. Indeed, the work of Label

Jaune intervenes at the different stages of the product's life cycle, that is the second life of the product, whereas Ardelaine and Patagonia are responsible for the production and distribution stage involving different activities.

The three companies are growing even if the nature of this growth varies. Indeed, Ardelaine is still developing its activities, Label Jaune aims to broaden its scope to more shops, while Patagonia is making more and more profits. Ardelaine and Label Jaune are not growing for the pursuit of profits but to extend their activities serving their mission.

Even though, Patagonia is in line with most of the principles, Ardelaine and Label Jaune seem to be the best examples of a business approaching degrowth which illustrates how can such a business look like in practicality and demonstrate its feasibility. Both companies are very different, even in the legal structure, and are not models to be reproduced but rather serve as examples.

Chapter 6

Discussion

In the wake of concluding remarks to the previous chapters and subquestions, this chapter will consider to what extent the Strategy for Sustainable and Circular Textiles can be supported by a shift in business model to approach degrowth, as a discussion point.

As highlighted in this research, business models approaching degrowth stand out from "usual" or "mainstream" business models in the textile industry. Assuming they represent exceptions in the sector, there is a need to support and encourage the industry to shift its model towards one more compatible with degrowth. In that regard, legislative and financial measures initiated by the European Union are necessary to leverage this shift.

The European Commission published The EU Strategy for sustainable and circular textiles on the 30 of March 2022, part of the Circular Action Plan from 2020 (European Commission 2022a). This strategy is a horizontal framework presenting actions and policy development in the sector of Textiles for the upcoming years. The figure below 6.1 gives an overview of the different actions and policies announced in this strategy.

The following paragraphs will discuss how can some of these actions and policy instruments, as announced in this strategy, could support a shift in the industry towards a business model approaching degrowth. Some policy instruments will be discussed in more detail: ecodesign requirements, extended producer responsibility, and creating enabling conditions for the industry.

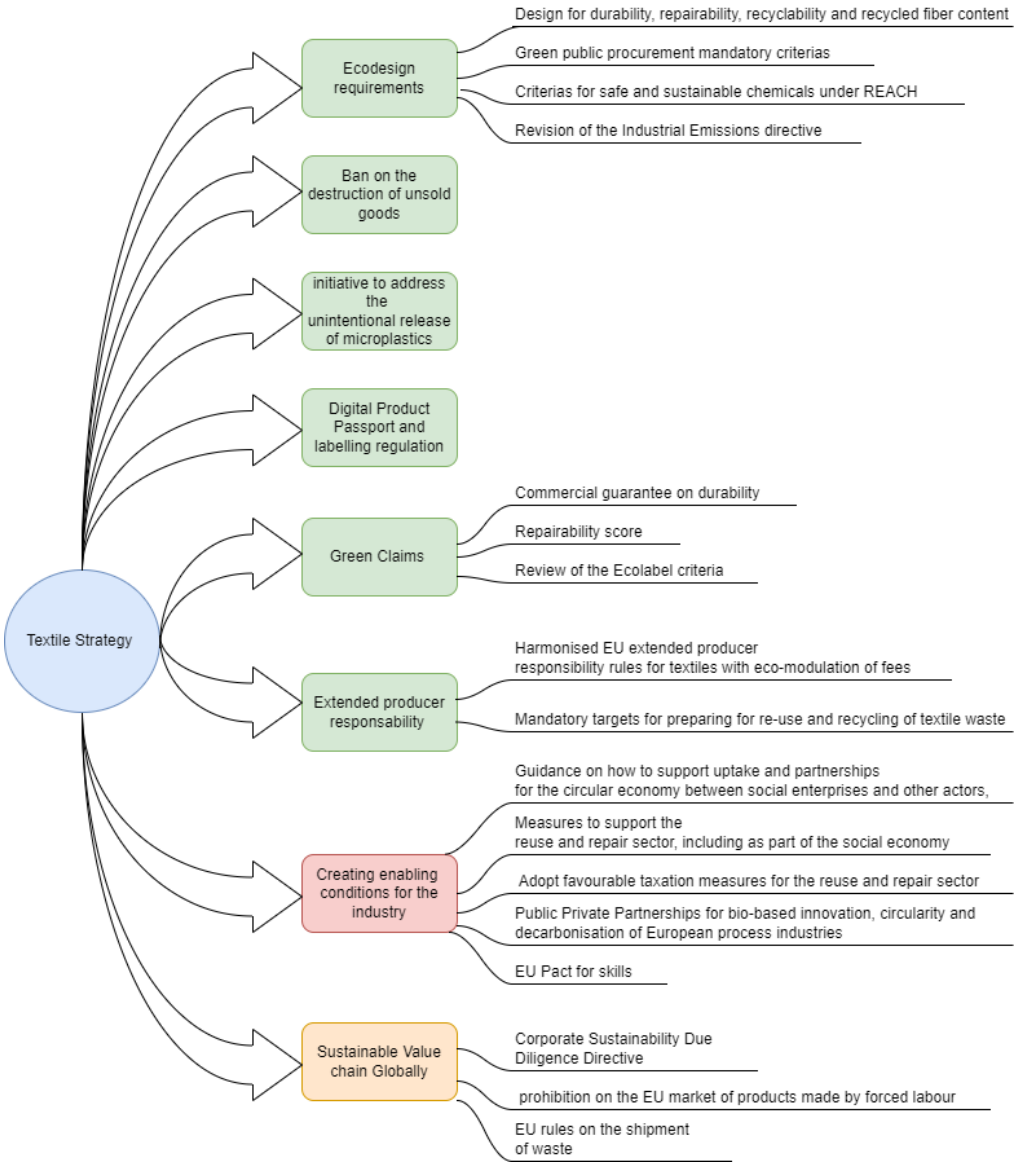

Fig. 6.1: Policies and actions described in the European Commission (2022a). The colors representing the different categories of action.

1 Eco-design requirements

Eco-design requirements are direct regulations at the product level and are not directly linked to the business model. However, regulations and directives at the product level can have a large impact and steer changes in the business model. Indeed, it has been demonstrated that ecodesign dilemma leads to business model innovations (Prendeville et al. 2017).

Here are the listed ecodesign requirements in the European Commission (2022a) that can potentially affect positively the business model towards degrowth: durability, material composition (avoid certain blending like natural fibers with synthetics), reusability, repairability, fibre-to-fibre recyclability, and mandatory recycled fibre content.

Most of these ecodesign requirements are likely to have an extensive impact and create hurdles for fast fashion, representing a large part of the industry. Durability, and reusability which as a prior criterion requires durability, are requirements that will impose a rethinking of the business models. Indeed, durable and good quality products need more time and effort to be produced, but also extend the number of use, which is the complete opposite of the business model of fast fashion. Moreover, more durable clothes leading to more uses per garment should logically reduce the pace of consumption habits of European citizens.

On the occasion where these clothes will be disposed of, a greater quality will also imply a better condition for reuse. Enterprises working with reuse such as Label Jaune, studied in this research, should receive a lesser quantity of discarded clothes but of better quality. In that sense, their work should be alleviated from sorting and easier.

Localisation of the supply chain and local sourcing are not included in this ecodesign requirement. However, this could be implemented by requiring a certain distance in km to not exceed between different production stages. An ecodesign requirement on local sourcing and/ or local production could significantly change the textile industry and effectively steer businesses towards degrowth.

2 Extended producer responsibility

The extended producer responsibility (EPR) consists of shifting the cost from the end-of-life management from the public authorities, such as municipalities, towards the producer of the targeted product, moreover, the EPR should make provision for incentivizing companies to increase the environmental performance of their design (Eunomia 2022). European Commission is planning to create an eco-modulation of fees, without further precision (European Commission 2022a).

Even though the modularity of this fee remains uncertain at this point, EPR with modular fees is supposed to make the biggest companies, responsible for a high generation of waste, pay the most (Klepp, I. G. and Tobiasson, T. S. 2022). As such, companies

producing clothes with a short service lifetime and in large quantities will have to pay a more expensive fee than company selling durable products. The calculation of this fee can be based on the actual amount of waste produced by the company, or in the future based on information from the digital product passport (Klepp, I. G. and Tobiasson, T. S. 2022).

EPR should boost reuse and recycling but preferably reuse to a greater extent (Sachdeva, A. and Araujo, A. and Hirschnitz-Garbers, M. 2021). To ensure this, criteria defining preparation for reuse have to lead to fees more interesting than for recycling (Sachdeva, A. and Araujo, A. and Hirschnitz-Garbers, M. 2021). One of the main criteria for reusability should be based on the durability of the product.

In addition to how the modularity will work, the potential proportion of the fees in comparison to the overall end-of-life management costs is unknown. However, a large proportion leading to considerable fees is thought to steer greater design improvements (Eunomia 2022).

Throughout the different actions of EPR described, this policy instrument can have indirect consequences related to business model choices and degrowth. Even though the EPR is not impacting the number of clothes produced, this policy instrument has an important potential to incentivize brands to produce more durable clothes to effectively reduce their end-of-life costs. Increased durability of products should, indeed, lead to reduced production as encouraged in the framework for a business model approaching degrowth.

3 Enabling conditions for social enterprises

Enabling conditions consist of creating an environment favoring circular business models with taxation incentives, research funding, and guidance for supporting social enterprises in reuse and repair. The definition of social enterprises as explained by the European Commission (2022b) is:

> " A social enterprise is an operator in the social economy whose main objective is to have a social impact rather than make a profit for their owners or shareholders."

The Commission further describes 4 fields in which the social enterprise can operate:

- "Work integration - training and integration of people with disabilities and unemployed people
- Personal social services - health, well-being and medical care, professional training, education, health services, childcare services, services for elderly people, or aid for disadvantaged people

- Local development of disadvantaged areas - social enterprises in remote rural areas, neighbourhood development/rehabilitation schemes in urban areas, development aid and development cooperation with third countries
- Other - including recycling, environmental protection, sports, arts, culture or historical preservation, science, research and innovation, consumer protection and amateur sports"

According to the definition of social enterprise by the European Commission, it seems that a cooperative, like Ardelaine studied in this research, is included. However, the Textile Strategy seems to focus exclusively on social enterprises involved in reuse and repair, consequently, to take the same example of Ardelaine, this cooperative might be left out of the targeted help.

To encourage degrowth, the strategy should include any kind of social enterprise, indeed, social enterprises can be focused on boosting the local development and not on reuse or repair, although boosting local development is a key element in degrowth, as highlighted in 5. Furthermore, encouraging social enterprises to be represented in the whole supply chain could challenge the monopoly of big corporations. The production stage of clothes should not be exclusively reserved for big corporations and social enterprises should also become the norm at the production stage.

Supporting social enterprises amount to supporting several aspects of a business model approaching degrowth, such as community embeddedness and empowerment, and shift of values. Consequently, creating favorable conditions for social enterprises could support businesses in their approach towards degrowth.

4 Concluding remarks

The EU textile strategy continues in the trend of technological optimism in the policies development of the European Union as argued by Gaziulusoy and Houtbeckers (2018). Indeed, there are no direct measures to tackle over-consumption and overproduction, while there is considerable attention on technological innovation such as fibre-to-fibre recycling, a technology which far from being a reality (European Commission 2022a).

Furthermore, the strategy promotes and works to enable reuse and repair business model but these circular practices can only alleviate the environmental burden of overproduction. The strategy should target the business model of the whole supply chain and encourage more broadly social enterprises.

To address directly the overproduction problem, the strategy is missing legal instruments, one which could have been proposed is to impose a quota or reduction target on/in resource use. This kind of legislation could drive sufficiency, impose a reduction in production and affect the business model of textile companies.

Workers' wellbeing is not addressed in the strategy, only for the due diligence initiative which is especially targeting workers outside of the EU (European Commission 2022a). There is no sufficient support for farmers, and craftsmanship, which, as exemplified by Ardelaine in 5, leads to a reduction in productivity, higher quality of products, and technology sobriety.

As criticized by the Clothing Research (2022), while acknowledging Europe is a large importer of clothing, the Textile Strategy is not enough or even not at all focusing on local and small production of textiles (European Commission 2022a). Even though localisation is a major enabler for fitness with degrowth, but also contribute to the resilience of European territories.

The EU strategy has a strong focus on eliminating the worst products from the market but should similarly consider eliminating the worst business model from the market. Even though some instruments go in the right direction, eventually, there is not enough to support and drive companies towards business models approaching degrowth.

Chapter 7

Conclusion

The problem analysis demonstrated how continuous and unlimited growth jeopardizes environmental benefits provided by a circular economy and highlighted the need for a new economic paradigm. Consequently, this research aimed at providing a solution for the textile industry to escape from the growth paradigm and approach degrowth with the framing of a research question.

This chapter will serve as providing an answer to this research question based on elements of this report: *How can textile companies, shift towards a business model approaching degrowth with the purpose to build a sustainable future for the industry?*

For answering this question, the present research has been divided into different parts, each bringing a piece of the answer. In the first place, clarification on what the degrowth movement is implying for the society and human activities, was necessary to address how businesses can belong within it. Then, a framework for a business model to approach degrowth has been designed based on a state-of-the-art. This framework offers several principles that a business can undertake to align with this new economic paradigm. To assess the potential implementation of those principles, an interview and critical analysis of textiles companies have been carried out, demonstrating the compatibility between the textile industry and a degrowth society. Finally, because it is assumed the shift needs to be supported by policies to allow a level playing field for businesses approaching degrowth, the discussion investigated how the current European policy development regarding the textile industry can leverage this shift.

Several elements for answering the research question can be concluded based on this research. The research explored the degrowth movement, deemed it a realistic solution to the problems emerging from the infinite growth, and showed its practicality via presenting a holistic and clear conceptual framework. While not officially agreed upon, literature on business model for approaching degrowth disclosed a certain consensus on many aspects such model should meet. Even though degrowth is presented as a radi-

cal change, the framework conception and the following critical analysis based on this framework, revealed some businesses are already aligned with the principles advanced. More than being feasible, degrowth in the textile industry is already a reality, as spare as it is. Despite its global outreach, the brand Patagonia demonstrated certain compatibility with degrowth, although this compatibility demands more efforts to be attained. Consequently, some principles, the scale, and the legal structure have been identified as more determinants than others in this path towards degrowth. However, those principles are demanding a radical change in the business model, while some other principles can be met with different initiatives. The direction of European legislation, regrettably, is not radical enough to address the over-production problem of the industry and falls short of the necessary actions to encourage businesses to shift towards a business model aligned with degrowth.

To complement this research, further investigation could be effectuated. While the businesses selected and analysed in this research show positive compatibility with degrowth, further research with a broader selection could lead to a quantitative reflection highlighting what percentage of the textile industry is composed of companies ready to shift towards a business model approaching degrowth. Because the shift will demand more than a series of businesses with affinities with degrowth, a study on the role of agents towards this change could complement this research and bring forward recommendations to leverage this transition.

Chapter 8

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Chapter 9

Appendix: Transcript of Interview

Interview with Label Jaune

Mary: On va commencer par une présentation générale de l'entreprise, pour bien dissocier le Label Jaune des Petits Riens et comment ça fonctionne pour vous

Barbara : Le label jaune c'est un projet des Petits Riens qui vient s'intégrer directement dans not activité. Les petits riens c'est une asbl d'économie sociale, et notre activité principale est de collecter, de trier et de vendre les dons reçus, et donc on revend tout ce qui est en bon état dans notre réseau commercial. On a plus ou moins 30 points de vente aujourd'hui et tous les bénéfices générés par les ventes sont injectés dans nos actions sociales qui est la lutte contre la précarité en Belgique, on a principalement 3 maisons d'accueil sur Bruxelles. Le label jaune est assez récent dans l'histoire de l'asbl, on est venu ajouter un maillon, un nouveau projet dans l'asbl, c'est-à-dire qu'on va récupérer une partie du gisement qu'on ne peut pas vendre directement dans nos boutiques, qui serait destiné au recyclage principalement, ou qui n'est pas assez en bon état ou trop démodé pour être vendu dans nos boutiques. Le label jaune est un atelier de création et de couture, on va créer des pièces upcycling à partir de ce gisement non utilisé qu'on va vendre également dans notre réseau de boutique Les Petits Riens. C'est vraiment un projet et commercial et circulaire et d'insertion comme le reste de nos services au Petits Riens.

Mary : Est-ce que cela suit le même schéma que pour les petits riens, c'est-à-dire que tous les bénéfices servent à la même cause ? Barbara : Tout à fait. Alors le milieu de l'upcycling est un milieu très compliqué, ce n'est pas évident même pour les Petits riens qui ont tout le gisement à disposition. Il y a tout le travail de récupération, c'est

un travail d'artisan qui prend beaucoup de temps, on arrive à une pièce qui en valeur ajoutée, en prix de vente qui n'est pas accessible à tout le monde non plus, donc il y a tout ce travail de sensibilisation du consommateur, de consommer de l'upcycling. On a une clientèle qui est très adepte de la seconde main, l'upcycling c'est encore un pas au-dessus, avec un prix de vente au-dessus aussi. Après on travaille avec des bénévoles dans l'atelier, mais on veut défendre et pas dévaloriser l'upcycling parce qu'il y a beaucoup de démarche personnelle dans ce milieu là et on va dévaloriser du tout ce travail là donc on veut les vendre à un prix raisonnable qui soit accessible pour notre clientèle.

Mary : Est-ce que vous arrivez à générer des bénéfices avec cette activité du Label Jaune ? Barbara : C'est le but d'en faire un projet rentable, et un des axes du projet c'est que ce soit rentable et que ce soit un projet d'insertion où l'on peut aussi injecter nos bénéfices dans nos actions sociales également.

Mary : Vous travaillez avec des bénévoles qui ne sont pas rééenumérés, quel est le bénéfice de leur côté ? Barbara : Un bénévole c'est vraiment une personne qui vient donner un coup de main de temps en temps pour faire grandir le projet avec nous donc il y a aucune obligation. C'est des personnes qui ont des compétences en couture à la base et qui ont envie et adhèrent au projet d'upcycling ou au projet Petits Riens, et qui investissent 4h par semaine en général dans ce projet là avec nous.

Mary : Est-ce que par la suite vous avez la volonté d'employer plus d'employés ou de continuer sur cette base ?

Barbara : On a 3 salariés aujourd'hui sur l'atelier couture, on a un 15aines de bénévoles, un des axes du projet c'est de faire un maximum d'insertion, acquérir des personnes qui sont éloignés du marché du travail, donc on aimerais en faire un axe d'insertion aux métiers ou de la couture, du modélisme, du stylisme, de les accompagner pendant 1 an et de revaloriser ces métiers là.

Mary : J'aimerais bien aller maintenant sur les critères du framework, bien que certains sont déjà mis en évidence. Par rapport à la structure de l'organisation et au modèle de propriété, à qui appartient l'asbl ?

Barbara : Ca appartient à personne, c'est une structure où c'est nos activités économiques qui financent nos projets.

Mary : Est-ce que vous avez mis en place des systèmes de décisions, un peu plus démocratique, comment se font les décisions ?

Barbara : On est passé depuis quelques années dans de la gouvernance très participative au niveau de l'asbl, en fait c'est quelque chose qu'on met en place aujourd'hui à travers des formations au niveau organisationel de l'organisation. Mais comme on dit, moi ça fait très longtemps que je fais les petits riens et de manière naturelle, c'est notre manière de fonctionner en fait, on prend les décisions ensemble, c'est très participatif. Le lien hiérarchique n'est pas du tout ancré. La plupart de nos décisions sont prises de manière commune.

Mary : D'accord, après il y a la question de la relation au profit mais vous n'êtes pas à but lucratif et vous reversez vos profits à une mission sociale. Ensuite il y a tout ce qui

est question de collaboration et partage de connaissances, avec le système d'insertion, vous partagez beaucoup de connaissances avec les gens qui travaillent pour vous ?

Barbara : Tout a fait, c'est un axe vraiment, dans le sens notre projet c'est vraiment de lutter contre la précarité, où il y a cette mission d'insertion, et où on collabore avec les cpas bruxellois ou des candidats, pendant 1 an ou 2 an en fonction de leur âge, de stages où ils viennent apprendre un métier chez nous.

Mary : Donc vous travaillez aussi avec les autorités locales ?

Barbara : Donc nous ce qu'on appelle les cpas, c'est des personnes éloignées du travail qui n'a pas le droit au chômage, il a le revenu minimum au cpas et là il y a un accompagnement de la part des cpas où ils dirigent les personnes vers différentes structures tel que la nôtre pour un programme d'insertion. Et la il y a tout un plan d'accompagnement sur le trajet chez les Petits riens.

Mary : Est-ce que vous collaborez aussi, partagez des connaissances avec d'autres structures qui font du travail d'upcycling par exemple ?

Barbara : On ouvre notre porte. Les petits riens sont très connus pour leurs connaissances donc ça fait très longtemps qu'on collabore avec ou des stylistes, ou des pièces de théatres, on a beaucoup de demande externe pour avoir de la matière première. Et pour le projet label jaune on collabore par exemple avec R fabrik ou avec des élèves et des étudiants en stylisme, en couture.

Mary : Très bien. Par rapport à la source des vêtements, d'où viennent les vêtements que vous récupérez ?

Barbara : Ils ne viennent que de Belgique, on a des containers partout en Belgique et on collecte tout ce que les personnes veulent donner aux Petits Riens.

Mary : Comment vous traitez du bien-être des employés ? Barbara : Honnêtement c'est un travail d'équipe , qu'on collabore tous, on choisit aussi en fonctions des valeurs sociales, la solidarité, le respect de l'autre.

Mary : Par rapport a la communication, est que vous traitez du sujet de l'impact environnemental que ce soit au sein de la structure ou envers la clientèle ?

Barbara : Si, c'est la base de notre activité. C'est un peu un mouvement actuel de redire qu'on zero dechet, circulaire, ou qu'on est dans le recyclage. On existe depuis tellement longtemps que pour nous c'est évident. On profite entre guillemets de ce mouvement depuis quelques années mais nous ce qu'on a envie de mettre en valeur c'est que même une pièce qui n'est pas vendable on sait encore en faire quelque chose. On a beaucoup de sensibilisation sur notre réseau, il y a notre clientèle qui est déjà adepte de seconde main et l'upcycling c'est encore un pas en plus. La clientèle de l'upcycling est plus sensible, a la surconsommation et qui cherche vraiment une piece unique. Dans ce modèle de mass market et fast fashion, il y a une clientèle qui a envie de se démarquer aussi avec un prix accessible aussi. Effet mode aussi avec la pièce unique, et qui finance un projet social aussi.

Mary : Il y a aussi une idée de suffisance, pour vous expliquer, c'est l'idée qu'a un moment vous ne cherchez plus à croitre, même si pour le moment vous êtes une toute

petite équipe qui cherche à croitre, est ce que vous savez vous poser des objectifs dans le temps à quel vous aurez accompli votre mission ?

Barbara : Oui je pense qu'il y a plusieurs objectifs là-dedans, de 1 on veut pas en faire un travail de production à la chaine, sinon ça n'a plus de sens non plus si on veut vraiment mettre en avant un travail artistique de création, et des métiers de l'artisanat. L'objectif c'est d'évoluer d'année en année en récupérant de plus en plus de matière et grandir au niveau de l'insertion, d'accueillir de plus en plus de personne. Maintenant notre objectif c'est de vendre nos créations sur l'ensemble de notre réseau Bruxellois, ce serait déjà pas mal.

Mary : Ensuite au niveau des technologies utilisés, est ce que vous faites au plus simple ?

Barbara : On est super basique, on récupère quasiment tout, on a pu investir dans quelques bonnes machines mais sinon on est très basique. On s'adapte de toute façon aux compétences de l'équipe. Les bénévoles ont tous des objectifs différents, certains c'est pour le lien social, pour le projet des petits riens, d'autres pour pratiquer des techniques. Cependant, aujourd'hui on est pas un atelier de formation, ça c'est vraiment un des projets prochain pour l'atelier donc on demande un minimum de connaissance sur l'utilisation d'une machine.

Mary : Je vais passer à la dernière question sur le framework, c'est de savoir si vous utilisez des ressources renouvelables, notamment sur l'énergie vu que vos ressources proviennent des déchets ?

Barbara : Pas spécialement à l'atelier.

Mary : Maintenant est ce que vous rencontrez des difficultés spécifiques par rapport à votre structure et les principes mis en œuvre ?

Barbara : La vraie complexité c'est l'upcycling, chaque pièce est unique, on doit être adapté une création sur des vêtements différents.

Mary : Vous n'avez pas de difficultés d'approvisionnement ?

Barbara : Ah non on a de quoi faire.

Mary : Un peu trop ?

Barbara : Non c'est de trouver la bonne idée avec le bon gisement, mais on collecte quasi 7000 tonnes par an de textiles. On a vraiment de quoi faire. Mais il faut trouver la matière ou le modèle qui peut correspondre à la création qu'on a envie de faire.

Mary : Par rapport vous disiez que les pièces d'upcycling sont un peu plus difficiles à vendre, est ce que là ça peut entrainer une difficulté financière ?

Barbara : Oui et non, le souci c'est surtout la sensibilisation, et la connaissance des gens de revenir aux valeurs d'une pièce qui a demandé du temps et qui perdurer dans le temps. C'est dans la démarche de consommation où il y a un vrai travail à faire. Si on explique bien le travail au client, en general il craque, il va comprendre pourquoi va être à plus de 50 ou 60 euros. Les gens ne sont plus habitués à consommer comme ça, ils veulent des petits prix, une pièce qu'ils vont mettre un ou deux jours et après qu'ils vont jeter ou donner.

Mary : Est-ce que vous avez déjà entendu du concept de décroissance, bien qu'il ne soit pas à l'initiative de votre projet ?

Barbara : On est bien dans ce qu'on fait, on fait face à la concurrence, la seconde main il y en a de plus en plus, les enseignes qui vont faire des rayons de seconde main. On va collecter moins, et d'une qualité moindre. On peut parler de 3e main parce qu'une pièce de fast fashion qui a été porté n'est plus dans un état pour être revendu. On est très bon dans ce qu'on fait avec un personnel exceptionnel qui reconnait très bien les pièces.

Mary : Label Jaune existe depuis combien de temps ? Et est ce que vous rentrez dans vos frais ?

Barbara : 2 ans et demie, on a commencé juste avant le covid. On fonctionne bien depuis vraiment 1 an, on arrive bientôt à l'équilibre mais on y est pas encore, donc on a encore des choses à adapter et ça reste une nouvelle activité pour nous. On a la chance d'avoir un réseau existant ce qui nous à nous adapter à la demande de la clientèle et on a aussi déjà une clientèle existante, c'est un avantage par rapport à d'autres qui pourraient se lancer dans l'upcycling.