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***“The Shift to Sustainable Luxury Fashion”***

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# ***“The Shift to Sustainable Luxury Fashion”***

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## ABSTRACT

This thesis examines how sustainability is being integrated into the luxury fashion industry, with a focus on changing consumer attitudes towards transparency, ethical production, and environmental stewardship. Luxury clothing industry is responding to climate change and resource depletion by embracing sustainable practices. The research also looks at eco-friendly materials, fair labor standards and innovative recycling processes. The importance of transparency as well as third party certifications in establishing consumer confidence and dealing with the problem of greenwashing are highlighted. Furthermore, the paper investigates how advanced technologies such as blockchain can be used to improve supply chain accountability and guarantee the authenticity of sustainability efforts. As such this dissertation concludes that convergence between luxury goods and sustainability represents a significant rupture rather than a passing trend; consequently, it contends that high end fashion could become an influential platform for promoting environment consciousness and public welfare activities. Through bringing high-end fashion in line with sustainable norms, not only does the industry meet contemporary consumers' expectations but it also contributes to a more sustainable and just future. This study provides an all-inclusive analysis of the strategies and procedures created to epitomize new types of luxuriousness connected to ecological responsibility that will indicate prospects for making a better world through fashion.

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## INTRODUCTION

When “sustainable luxury fashion” combines these opposing concepts, an industry is revolutionized, old beliefs are challenged, and a future standard is set. These principles of sustainability similarly stand on issues of quality, durability and careful use of resources which are shared by luxury fashion at its core rooted in longevity focus, impeccable craftsmanship and distinctiveness in design. Luxury items such as high-end handbags have a value that goes beyond aesthetics; they have an enduring quality rather than being disposable which makes them timeless. On the same note sustainable luxury also focuses on the utilization of fine eco-friendly materials and production techniques that reduce waste and minimize environmental damages.

Sustainable luxury was transformed from a niche to a global movement due to the urgency for addressing ecological imbalances and climate change. The fashion industry recognized as second largest pollution industry after oil has witnessed a dramatic change as consumers increasingly desire transparency, ethical production practices and environmental stewardship. Gucci, Chanel, and Ralph Lauren among other top-tier brands have enrolled into initiatives like Fashion Pact with commitments to fight against climate change, save biodiversity and protect oceans. This common action demonstrates how far the sector has changed since without it; by 2050 fashion could take up more than 50% of our carbon budget.

Amongst some main pillars in sustainable luxury is transparency. Modern consumers are striving to find out more about their luxury items’ origins, materials & production process so that they can make choices that align with their values. Consequently, industry leaders had to consider this demand for authenticity and clarity by making sure their supply chains were open books while their claims about sustainability were valid. The luxury brands have put more emphasis on maintaining consumer trust as well as brand integrity through increasing transparency concerning responsible sourcing.

Additionally integrating sustainability features in luxurious fashions goes beyond just environmental aspect but also social aspect together with economic aspects. True sustainability involves ethical labor practices, fair wages for workers and safe working environments within which production occurs. The ethical treatment of workers across supply chains is a moral necessity, but it also increases the reputation and loyalty of businesses and brands.

The journey towards sustainable luxury fashion is a transformation and hope. It challenges the industry to re-imagine what it means to be luxurious in ways that are beautiful and responsible while at the same time, uniting high fashion's glamour with an allegiance to the people of this earth. Sustainable luxury is one of the proofs that innovation, ethics and collective action are major forces in creating a better world. When embracing sustainability, luxurious labels can lead the way, contributing towards a more ethical, transparent, and ecologically sensitive fashion industry that agrees with modern consumer values.

In conclusion, the integration of luxury and sustainability is more than just a fad but rather the future destiny for fashion business practices. In addition to meeting consumers' growing appetite for responsible luxuries, this change also goes hand in hand with broader movements toward greater sustainability and equity on our planet. While delving more into this issue we will examine various strategies as well as practices embraced by luxury brands towards incorporating sustainability into their operations thereby setting new benchmarks for an industry moving towards a more sustainable tomorrow.

## CHAPTER 1

In this section, we delve into the transformation occurring in the fashion industry, as it merges high-end luxury with eco-friendly practices to pave the way toward a brighter future. We explore how the fusion of luxury and sustainability revolutionizes the industry, breaking away from old traditions and establishing new trends that promote fairness and environmental consciousness. We discuss the growing emphasis on transparency regarding the origins and production methods of clothing, resource conservation, and the selection of materials that are good for the planet, as well as the significance of treating workers ethically and adhering to regulations. Furthermore, we examine how the fashion industry is collaborating with the United Nations' objectives to address major global issues, such as combating climate change and ensuring equitable treatment for all. This includes showcasing stories of fashion brands that create remarkable products in a manner that benefits both the planet and its inhabitants, such as utilizing recycled materials and ensuring fair compensation and treatment for everyone involved in the production process. By piecing together all these elements, this section provides a comprehensive overview of how the glamorous fashion that many adore is increasingly prioritizing environmental and social concerns, demonstrating that style and sustainability can coexist harmoniously.

### 1.1 The Fusion of Luxury and Sustainability in Fashion

In today's fashion, mixing sustainability and luxury fashion creates a complex and detailed story. The term luxury traditionally evokes images of extravagance and privilege, synonyms with couture, excess, and the lifestyle of the elite. On the other side, sustainability suggests conservancy, long-term thinking, environmental safeguarding, and a response to climate change. Combining these contradictory concepts into "sustainable luxury fashion" represents a revolutionary shift in the industry, challenging biased notions and setting a new pattern for the future.

The blend of luxury and sustainability is not as paradoxical as it initially appears. Luxury fashion, with its trademark of longevity, impeccable craftsmanship, and unique design, shares common ground with sustainability principles, focusing on quality, durability, and the cautious use of resources. A luxury item such as a 2500\$ Gucci bag is valued for its aesthetic appeal enduring quality and timeless design. Similarly, sustainable luxury emphasizes the use of high-

quality, environmentally friendly materials and production methods that minimize waste and reduce environmental impact.

Jean-Noel Kapferer, a distinguished French marketing professor, also the author of “Kapferer on Luxury”, articulates the synergy between luxury and sustainability noting that luxury values rarity and beauty, which aligns with sustainable principles of conservation and preservation. This relationship highlights the philosophy that true luxury should enrich both the individual and the world, embodying the saying “Ethics + Aesthetics = Sustainable Luxury”<sup>1</sup>.

In the contemporary landscape, the urgency of addressing ecological asymmetries and climate change has tossed sustainable luxury from a niche interest to a global movement.

The fashion industry, recognized as the second-largest polluter after the oil industry, as stated by the documentary 'The True Cost,' has seen a decisive shift as consumers increasingly demand transparency, ethical production, and environmental supervision<sup>2</sup>. Leading luxury, but also fast fashion such as Gucci, Chanel, Ralph Lauren, Prada, H&M, and Zara, have united under initiatives like the Fashion Pact, committing to fight climate change, protect biodiversity, and preserve the oceans. This collective action reflects a profound transformation in the industry, acknowledging that without such efforts, fashion could consume a quarter of the world’s carbon budget by 2050.

A significant driver of the sustainable luxury movement is the changing preferences of younger generations. Gen Z and Millennials, who currently account for at least 30% of luxury brand sales (a figure projected to rise to 45% by 2025), are more inclined than their ancestors to support brands that demonstrate a commitment to sustainability and social responsibility. Research made by Nielsen revealed that 73% of millennial consumers are willing to pay a premium for products from sustainable or socially conscious brands, highlighting a shift towards more conscious consumption<sup>3</sup>.

In the sphere of sustainable luxury, transparency has become one of the main cornerstones. Modern consumers seek in-depth knowledge about the origins, materials, and production processes of their luxury goods, aspiring to make purchases that align with their values. This demand for clarity and authenticity has prompted industry leaders to reevaluate their practices with figures like Andy Hart, the head of Diamond Supply at Tiffany, emphasizing the

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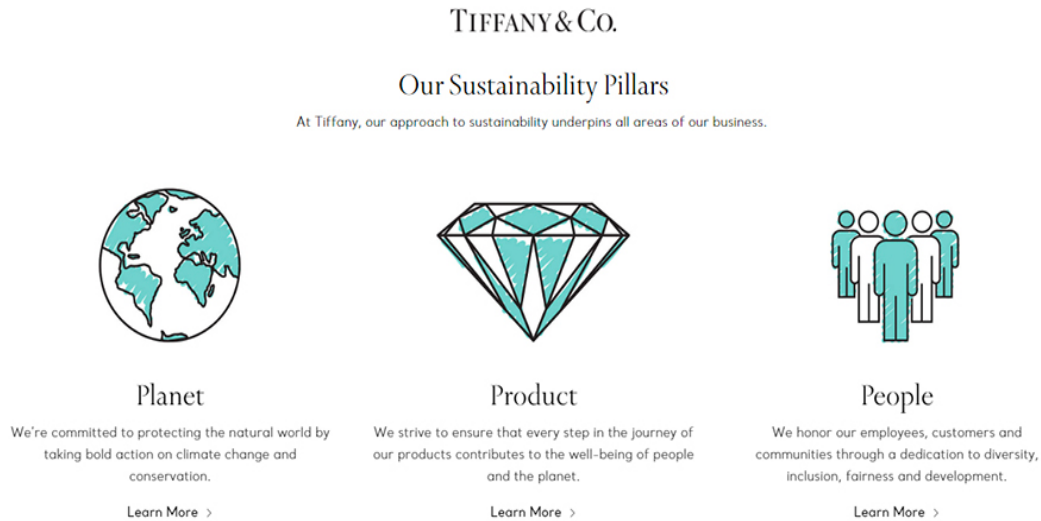
<sup>1</sup> Olga and Paul Garibian (2023), "What is Sustainable Luxury Fashion in 2023?", The Classic T-Shirt Company (Los Angeles)

<sup>2</sup> Morgan, Andrew (2015), "The True Cost".

<sup>3</sup> Nielsen (2018), "What Sustainability Means Today", Nielsen (New York)

importance of transparency and ethical sourcing in maintaining consumer trust and brand integrity as represented in Figure 1.

*Figure 1: The image is about Tiffany & Co.'s efforts to help the environment, create jewelry responsibly, and support people involved in their business. There are pictures of the earth, a diamond, and a group of people to show these three main goals.*



Nevertheless, these challenges also present opportunities. Sustainable luxury is not a transitory trend but a fundamental shift in the industry's trajectory. By embracing sustainability, luxury brands can lead by example, fostering a more ethical, transparent, and environmentally conscious fashion industry. This transformation not only satisfies the consumer demand for responsible luxury but also contributes to a larger movement towards a more sustainable and equitable world.

The journey of sustainable luxury fashion is one of hope and transformation. It challenges the industry to reimagine luxury in a way that honors both beauty and responsibility, marrying the magnetism of high fashion with a commitment to the planet and its people.

As we look to the future, sustainable luxury stands as a testament to the power of innovation, ethics, and collective action in shaping a better world<sup>4</sup>.

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<sup>4</sup> LuxuryAbode, "What is Sustainable Luxury?", LuxuryAbode.com



## 1.2 Building the Framework for Sustainable Fashion

Today's fashion scene is being reshaped by innovative ideas and frameworks, pushing the industry to use sustainable kinds of production and consumption practices. This shift is a response to issues concerning labor practices, ethical allocation of resources, and animal rights. As fashion brands navigate the difficulties of today's environmentally conscious world, foundational principles guide their journey toward sustainability, offering a draft for a more equitable and responsible industry.

Central to the move towards sustainability is the idea of transparency. This concept goes beyond just being a popular trend, it involves a deep understanding of a product's entire journey, from the beginning to the point of purchase. It goes further than just knowing where a product is made, it encourages a deeper understanding of where materials come from, how products are created, and how they are transported. True transparency includes recognizing fair trade certifications, explaining where materials originate from, providing clear information on every step of the supply chain, and building a relationship of trust and accountability between brands and consumers. Chapter 2 will specifically focus on this important issue of transparency. Resource efficiency plays a critical role in reducing the fashion industry's environmental impact. Recognizing the sector as a significant polluter, there is a pressing need to reevaluate the use of water, energy, and chemicals. By investing in innovative technologies and selecting the right materials, brands can acutely reduce their consumption and emissions, making an actual difference in their ecological footprint.

The choice of material is decisive in this sustainable transformation. Moving away from fabrics that harm the environment and human and animal health, sustainable brands are committed to adopting recyclable, organic, and environmentally friendly alternatives. This shift does not only address the ethical concerns associated with traditional materials like acrylic and leather but also signifies a broader commitment to sustainability.

Worker safety and fairness are equally crucial components of a sustainable brand. True sustainability extends beyond environmental considerations to embrace the human aspects of the industry. Ensuring that workers receive fair wages, work in safe conditions, and have access to adequate insurance is fundamental, reflecting a commitment to the dignity and well-being of those who work in this industry.

Another essential part of sustainability is compliance with local regulations. Brands must operate the legal and regulatory landscape of each country they operate in, adhering to local labor laws, environmental standards, and community rights. This respect for local norms and

regulations underscores the comprehensive nature of sustainability, encompassing every stage from design to production.

Recycling plays a crucial role in the approach to sustainable fashion. By embracing recyclable materials for both products and packaging, brands can reduce waste and resource depletion. This commitment to recycling is a critical step in closing the loop of the fashion ecosystem, contributing to a more sustainable future.

Moreover, the fourth industrial revolution, also called Revolution 4.0, presents both challenges and opportunities for the fashion industry. As digital transformation and automation continue to reshape the sector, sustainable brands must consider the implications for employment and skill development. Preparing workers for the future through courses and programs is an essential part of a sustainable brand's responsibility.

Implementing these principles requires a significant investment of time, effort, and resources, but the rewards are immeasurable. A sustainable fashion brand not only lessens its environmental impact but also promotes social equity and economic viability, initiating a cycle of continuous improvement. By embracing these guidelines, fashion brands can lead the transformation of the industry<sup>5</sup>.

### **1.3 Luxury Fashion Brands Embrace Sustainability**

Moving from the theoretical foundations of sustainability, we shift our focus to examining practical instances in which top fashion labels are putting these principles into action, proving that luxury and environmental awareness can successfully come together. Nowadays, many fashion brands are stepping up to redefine what true luxury means in an environmentally conscious world. For example, the big company LVMH, which owns brands like Louis Vuitton and Dior, got a top score from an organization called the Carbon Disclosure Project for doing an incredible job at protecting the environment. They are leading the way in making fashion more about caring for the planet. Even with all the pollution produced, the fashion world is trying to do better. Some luxury brands are leading the charge by using materials that are better for the Earth and changing the way they make their products.

Stella McCartney is a big name in eco-friendly luxury fashion. Since the beginning, she has always mixed materials that do not harm the planet with cool designs. She has been a leader in finding and using new materials but still makes her clothes and accessories last long and feel

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<sup>5</sup> Freja Solberg (2020), "The 7 Principles of Sustainable Fashion", Medium

luxurious. A great example is her famous “Falabella” bag, made from vegan leather. She also uses materials like organic cotton, fake silk, recycled faux fur, and recycled polyester. Stella McCartney works with groups that make sure clothes are made fairly and helps with projects that protect our planet, like Parley for the Oceans and Code REDD.

In short, Stella McCartney has been a major force in pushing fashion towards being more eco-conscious, inspiring many other designers and brands that will be mentioned next to follow in her footsteps.

Gucci is another big name in fashion that’s working hard to be greener. Known for its unique style and top-quality Italian craftsmanship, Gucci is making big moves to protect the planet. They are part of the French Kering Group and are working to make sure 95% of the materials they use to make clothes can be traced back to where they came from. They stopped using animal fur and are trying to cut down on pollution. Gucci is also working with Canopy Style, a group that helps stop forests from being cut down for fashion. Additionally, in June 2020, it brought out its first wholly sustainable collection called “Gucci Off the Grid”. This collection includes items made from organic cotton, recycled metal, regenerated fabric, and Econyl, which is a material made from second-hand resources like old fishing nets and carpets.

Another brand that since starting in 2015 has contributed to the improvement of climate change is Gabriela Hearst, a designer from Uruguay. In 2017, she had her first big fashion show using 30% leftover fabrics. Then in 2018, she opened her first store in New York City, inside the famous Carlyle Hotel, using only natural oak wood, without fake materials or harmful chemicals. She also made sure to recycle 90% of the waste from building the store. By 2019, her brand was not using any plastic at all. They did this by being the first to use a kind of plastic for all their packaging that breaks down in compost in about 180 days.

In addition, Vivienne Westwood started her brand in the 70s, mixing her unique punk style with green ideas. She liked using old materials again and making fewer clothes to avoid waste. The brand still follows the idea of “buy less, choose well, make it last”. The brand also works closely with local makers around the world to source textiles in smaller amounts. Even though Vivienne Westwood is no longer leading her brand, her values are still very important in the company management.

Acne Studios, a brand from Stockholm born in the 1990s has become very popular for its simple yet modern designs. The brand focuses on making clothes that last a long time, choosing materials and ways of making clothes that are good for the planet. In 2020, Acne Studios launched a special environmentally conscious collection called “Repurposed”, using leftover

materials to make new clothes. This approach has made Acne Studios known as a brand that cares about the environment.

These brands and many more are now innovating the way to make luxury fashion more sustainable. Each brand in its unique way, is working hard to use better materials, reduce waste, make high-quality clothes, and follow some of the frameworks cited before. They are setting an example in the whole luxury fashion industry, showing that it is possible to be stylish and environmentally responsible at the same time<sup>6</sup>.

#### **1.4 Luxury Brands and Their Alignment with the UN SDGs**

Some fashion creatives around the world are now coming up with ways to make fashion help achieve the United Nation's big goals for a better world. The clothes we wear affect the earth significantly. Making and delivering clothing and accessories causes about 8% to 10% of the world's total harmful gas emissions, making luxury and fashion in general one of the top sources of pollution<sup>7</sup>. It also uses huge amounts of water, more than almost any other industry, drinking up to about 79 trillion liters of water every year<sup>8</sup>. On top of harming the environment, luxury fashion has problems with mistreating people, like forcing them to work under poor conditions.

These issues make some people doubt if luxury fashion could ever benefit the planet. Each consumer can help by choosing what to wear and buy, and more and more shoppers are changing their habits to protect the environment. A study found that 57% of people have already changed how they live to reduce their harm to the earth<sup>9</sup>. There are also innovators coming up with smart fashion ideas that not only aim to reduce harm but also help achieve the United Nations' big goals for a healthier planet. Luxury Fashion, like many other industries, needs to change for the good of the planet quickly, but these firms show us the possibility that we can make the developments we need: for example, by making better choices, luxury fashion can help fight poverty, making a big difference in the world as part of the UN's first big goal

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<sup>6</sup> Sarah Powless (2023), "From Gucci to Stella McCartney: Luxury Labels Leading the Charge on Sustainable Fashion", Worth (New York)

<sup>7</sup> Ellen MacArthur Foundation (2017), "A New Textiles Economy: Redesigning Fashion's Future", Ellen MacArthur Foundation (Coves)

<sup>8</sup> Favela, Leah (2021), "Fashion Industry Uses 79 trillion L Of Water A Year. How You Can Reduce Its Impact", Peaceful Dumpling (New York)

<sup>9</sup> Pew Research Center (2021), "Climate Change Concerns Make Many Around the World Willing to Alter How They Live and Work", Pew Research Center (Washington, D.C.)

(No Poverty). Luxury fashion brands, with their considerable influence and resources, are uniquely positioned to lead by example in the fight against poverty. Brands like Kering<sup>10</sup> have placed sustainability at the core of their business strategy, emphasizing that luxury and sustainability are intrinsically linked. Kering's approach to sustainability includes a comprehensive 2025 strategy focused on three main pillars: Care, Collaborate, and Create. This strategy not only aims to reduce the environmental and social challenges. The entire fashion industry, including luxury brands, can contribute to the ending of poverty by adopting fair trade practices, investing in sustainable technologies, and ensuring that workers throughout the supply chain are paid a living wage. As consumers become more aware of the environmental and social impacts of their purchases, they are driving demand for brands that prioritize sustainability and ethical practices. This shift in consumer behavior underscores the importance of integrating the UN's SDGs into business models to achieve not only environmental sustainability but also social equity and economic growth for all stakeholders involved. By actively participating in global efforts to eradicate poverty, luxury brands can demonstrate their commitment to a more equitable world, aligning their business models with the broader objectives of the UN SDGs.<sup>11</sup>

Improving the economic lives of communities and fighting poverty (SDG 1) also means ensuring the health and well-being (SDG 3) of those who make our clothes. Factories making textiles and clothes need to be checked by outside groups to make sure they are safe places to work. Laws also need to be stronger on harmful chemicals used by these factors, as these can hurt the health of people living nearby by polluting their water.

These brands should also focus on informing consumers about fashion's impact and how to make choices that are better for the world, which directly supports SDG 4: Quality Education. They should explain why it's important to buy wisely, care for, and fix clothes. These brands have a responsibility to offer job training in less wealthy areas and ensure their workers are paid well enough to support their families' education and childcare needs, highlighting the connection between ethical fashion practices and promoting education for all.

In Figure 2, which is set to represent the proportion of women and men across different pay quartiles in the luxury fashion industry, we observe a trend towards closing the gender pay gap. This trend underscores the industry's potential role in championing SDG 5's mission of economic empowerment and ending discrimination against women, reflecting a commitment

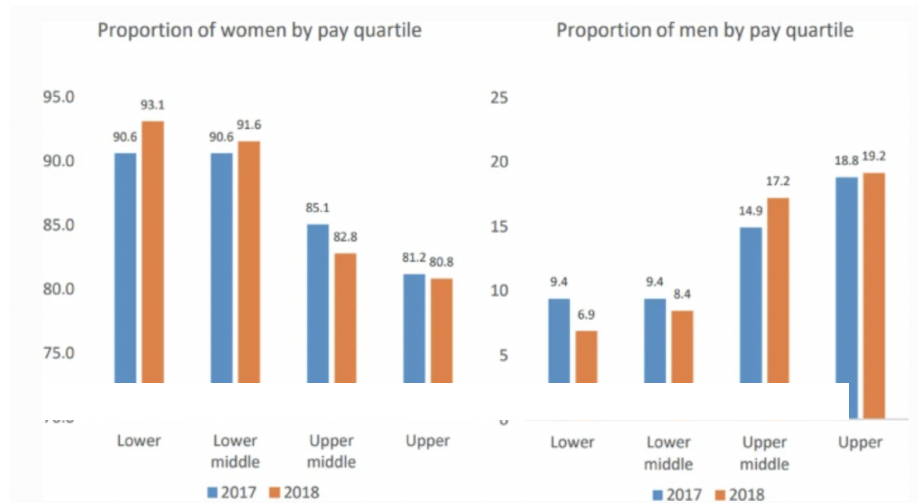
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<sup>10</sup> Kering (2024), "Sustainability strategy and initiatives", Kering (Paris)

<sup>11</sup> Fashion Takes Action (2024), "Sustainable Development Goals", Fashion Takes Action (Toronto)

to gender equality through equitable pay distribution. For example, the Danish startup Shift is creating jewelry that's not just stylish but also serves as a personal safety device, directly contributing to women's safety. On the economic front, Alsama Studio, a Lebanese social enterprise, offers women refugees the chance to transform old clothes into new designs through embroidery, providing them with a vital source of income. Also, big names such as Chanel and Michael Kors operate Gender Pay Gap Reporting procedures that track average pay differential between genders across all roles. Since women are the majority in the artisan community and are disproportionately affected by poverty, initiatives like these not only foster economic independence for women but also highlight the luxury fashion industry's role in advancing SDG 5 by promoting gender equality through innovative practices.

**Figure 2:** This graph compares the proportion of women and men by pay quartile over two years, 2017 and 2018. It shows that in both years, women make up a higher percentage in the lower pay quartiles, and men dominate the higher pay quartiles, suggesting a Gender pay gap.



In this industry, we face many challenges. Other examples of potential impacts on SDGs may be making jobs safe and fair (SDG 8) and making sure everyone, no matter their background, gets to join in and benefit (SDG 10). SDG 10 is about making sure no one gets left out because of where they come from, the color of their skin, or any other reason. It's about making the fashion world a place where everyone can succeed. Some companies are already doing great work here. For instance, “Yard + Parish” in the UK shows off luxury fashion made by Black entrepreneurs, and Black Owned Everything in the US is a shopping and culture spot that lifts diverse creators.

Putting these two goals together, luxury fashion can lead the way. By focusing on SDG 8, luxury brands can make sure the fashion world is a good place to work, where everyone is treated fairly. And by embracing SDG 10, these brands can help break down barriers, making fashion a force for bringing people together and celebrating diversity.

SDG 12 focuses on responsible consumption and production, urging industries, including luxury fashion, to reduce waste and make more with less. This goal is crucial for the planet, as it challenges us to rethink how we grow economically without depleting our natural resources. Each year, we consume millions of tons of non-renewable resources, with a small fraction of materials being recycled. Manteco, an Italian luxury fabric company, is a standout example of how the industry can embrace SDG 12. They specialize in turning pre-consumer scraps, post-consumer garments, and industrial waste into high-quality, sustainable yarns and fabrics. Their innovative process not only gives new life to materials that would otherwise be discarded but also reduces the demand for virgin resources. Their commitment demonstrates a shift towards circular fashion, where waste is minimized, and materials are kept in use for as long as possible. By supporting companies like this one, consumers can play a part in promoting a more sustainable fashion industry that prioritizes the environment.

The goal of SDG 14 aims to safeguard and protect marine and coastal ecosystems. Luxury and Fashion might not seem related to the ocean at first, but some innovative people are finding ways to connect the two positively. For example, a startup in Florida (USA) named Inversa is creating a new type of leather from lionfish, which is bad for the coral reefs there. Another company, in Canada, called Leze the Label, uses old fishing nets, which are dangerous to marine life, to make comfortable clothes for work. Plus, with so many tiny pieces of plastic in our oceans (24 trillion, according to the ultimate studies), fashion companies need to avoid the use of plastic<sup>12</sup>. These efforts show how the luxury fashion industry can help with SDG 14 by using and promoting materials that protect our oceans and the creatures that live in them.

SDG 17 emphasizes collaboration across various sectors (governments, private entities, educational institutions, NGOs, and major corporations) to fulfill ambitious global targets. The luxury fashion industry exemplifies how such partnerships can lead to significant positive impacts. For example, the ice cream company Magnum is starting a cool project with the Leeds Institute of Textiles and Color. They want to use leftover stuff from making chocolate to create new materials for clothes. Also, a big group that includes research places, farming groups, and small and big businesses is working together to turn leftover food into bioplastic for beauty products. And in New Zealand, a bunch of organizations that think alike are figuring out how to share what they must recycle cotton locally.

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<sup>12</sup> Kyushu University (2021), "Twenty-Four Trillion Pieces of Microplastics in the Ocean and Counting", ScienceDaily (Rockville)

The journey of luxury fashion toward sustainability and social responsibility reflects the industry's evolving commitment to the planet and its people. By aligning with the United Nations Sustainable Development Goals, luxury brands are not only redefining the essence of style but also championing a future where luxury coexists with environmental care, social equity, and economic inclusivity. From innovating with sustainable materials and championing fair labor practices to fostering partnerships that amplify positive change, the luxury fashion industry stands at the forefront of a transformative movement. As consumers, designers, and stakeholders continue to unite under the banner of sustainability, luxury fashion emerges not just as a marker of elegance and exclusivity, but as a force for good, paving the way for a more sustainable, equitable, and prosperous world for all. This collective journey underscores the power of collaboration, innovation, and shared vision in shaping a future where fashion and sustainability are inextricably linked, showcasing that luxury can indeed lead the way in making the world a better place.<sup>13</sup>

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<sup>13</sup> Matthew Hempstead (2022), "Fashion and the UN SDGs", Springwise (London)



## CHAPTER 2

This chapter discusses the history of sustainable development in fashion. It will focus on eco-friendly materials, advanced textile dyeing technologies, and circular economy models. We will look at new materials such as Tencel Modal, algae-based bioplastics, and different vegan leather options that have set higher levels of sustainability for the industry. Also, it explores innovative approaches to dyeing textiles where no water is used, or microbial pigments are employed instead among other things. The concept of a closed-loop system that treats products as resources which value should be maintained for as long as possible through strategies like recycling, renting, and reselling is also analyzed concerning its role in sustainable fashion ecosystem creation. Furthermore, it is essential to acknowledge the potential of blockchain technology in enhancing supply chain transparency. This, in turn, facilitates ethical sourcing practices and fosters trust between customers and luxury brands by providing verifiable evidence of the original claims made by these reputable companies. Given these compelling reasons, it becomes evident that a more responsible approach is required in addressing the challenges within this industry. However, the significance of blockchain extends beyond these factors, offering even more advantages.

### 2.1 The Evolution of Sustainable Fabrics

Environmentally friendly materials and innovative ideas are leading the way towards a more sustainable future. These ground-breaking solutions are not just fads, but rather precursors to a revolution in sustainable fashion. The high-end fashion industry is a buzz with eco-conscious concepts such as cutting-edge plant-based leathers and fibers made from agricultural waste<sup>14</sup>. Among many other eco-friendly options, one material stands out both for its environmental friendliness and luxuriousness: Tencel Modal. It is harvested from renewable plants; this means that it is produced in such a way that it saves resources through capturing and reusing key elements while minimizing wastage and pollution that may occur during production processes (Sustainable Apparel Coalition). Its texture can be strong like cotton yet soft enough at the same time which makes it perfect not only for clothes but also for bedding sets too<sup>15</sup>. Another company breaking ground on recycling technology is Renewcell who takes used cotton

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<sup>14</sup> Sanvt (2023), "The Future of Sustainable Fashion: New Biofabrics and Biomaterials", Sanvt (Online)

<sup>15</sup> Lenzing AG (2024), "TENCEL™ Modal", Lenzing AG (Lenzing)

alongside other cellulose fibers breaking them down before spinning them into new biodegradable materials – either higher quality viscose or lyocell fibers can be produced through this process. This innovation does more than just save resources; it closes loops within fashion cycles thereby reducing demand for virgin materials therefore lowering impacts associated with their extraction processing use disposal, etc.<sup>16</sup> In terms of sustainability, Ambercycle and Infinite Fiber lead by example by transforming textile waste into fresh, eco-friendly yarns. Such endeavors help tackle issues surrounding waste produced by fast-moving consumer goods including clothing items particularly those made from fabric material since they still contribute significantly towards environmental pollution when disposed of improperly leading up to emissions of greenhouse gases such as carbon dioxide, methane, nitrous oxide, etc. (World Wildlife Fund)<sup>17</sup>. Also, Agraloop's development of BioFibre from agricultural waste represents significant progress because it provides sustainable fiber alternatives while reducing reliance on conventional destructive inputs typically used within this sector.

Another candidate for a game changer in sustainable fashion could be an unusual bioplastic called Algae. Saltwater-dwelling algae can thrive without having to compete for scarce freshwater resources which makes them perfect candidates as feedstocks for manufacturing environmentally friendly plastics. Materials based on algae have positive environmental implications and contribute towards sequestering carbon dioxide from the atmosphere, thereby playing their part in combating climate change<sup>18</sup>. This kind of innovation substitutes harmful substances with new ones that offer additional functionalities and benefits thereby demonstrating how much can be achieved through sustainable fashion made from natural resources alone. Perhaps one of the most unconventional examples, when it comes down to sustainability within clothing design, has something to do with using sweat produced by human bodies themselves to create decorative crystals. Alice Potts' approach challenges traditional notions surrounding waste management whilst simultaneously redefining what we mean by 'sustainable'. Taking sweat left behind on clothes people wear each day, she turns it into

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<sup>16</sup> Eco-Innovate (2024), "Closing the Loop with Renewcell's Fiber Recycling," GreenPress (Stockholm)

<sup>17</sup> World Wildlife Fund (2024), "Sustainability in the Textile Industry", World Wildlife Fund (Washington, D.C.)

<sup>18</sup> World Wildlife Fund (2024), "The Algae Advantage: Bioplastics in Sustainable Fashion," World Wildlife Fund (Washington, D.C.)

beautiful pieces such as jewelry or even sculptures thus providing us with alternative sources for obtaining gems which also tackles some ethical concerns tied up around mining practices. Moreover, there have been numerous developments in vegan leather alternatives, and plant-based silks: mushroom leather and lab-grown silk are among the most noticeable. These resources present themselves as cruelty-free substitutes while also showing that luxury fashion can be sustainable without sacrificing quality or aesthetics. Another remarkable advancement is the development of plant-based cashmere made from soy waste; it is biodegradable and does not harm animals. Such materials do not only possess properties like antibacterial and moth resistance but also demonstrate how eco-friendly fabrics can match conventional textiles in terms of performance and quality. Additionally, Econyl is another significant recyclable nylon alternative that was used mostly in the Gucci Sustainable Collection<sup>19</sup>. This material converts waste such as abandoned fishing nets into high-quality nylon thus challenging traditional linear fashion production models. Its capability to be recycled indefinitely without losing value points out the fact that sustainable practices have the potential to completely transform this industry by reducing waste and conserving resources. As people become more conscious of the environmental impact and ethical implications behind what they buy or wear, demand for sustainable fashion will continue growing day after day. The adoption of bio-based materials, recycling technologies as well as ethical approaches by the sector, marks a turning point towards more sustainability in future fashion evolution according to various researchers' studies conducted across different parts of our globe (see below).

## **2.2 New Technologies in Textile Dyeing**

While the fashion industry is becoming more eco-conscious by using sustainable materials, it should also address another challenge in terms of its environmental impact: the dyeing process, which has always been a cause for concern as far as ecology is considered. People have been adding color to their clothes since 3500 BC<sup>20</sup>. The discovery of synthetic dyes by W.H. Perkins in 1856 completely changed the landscape of dyeing and led us to where we are today: about 90% of our clothing is dyed synthetically now. However, there are still major issues within this industry, most notably excessive water usage and pollution. For example, dyeing cotton requires a lot of water, around 125 liters per kilogram of fibers used. Energy requirements are equally

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<sup>19</sup> Maekan (2021), "How ECONYL Became Fashion's Favorite Eco-Friendly Material", Maekan (Online)

<sup>20</sup> Ari Hidayat (2023), "Eco-Dyeing Techniques in Sustainable Fashion: A Comprehensive Analysis of Natural and Low-Impact Dyeing Methods", Kurdish Studies (Online)

high, huge amounts of water mixed with steam need to be heated up so that desired finishes can be achieved on fabrics produced later down the line. At present what happens during dyeing means that some 200k tons of dyes (£1bn worth) are lost into effluent streams each year; this represents not only an enormous waste environmentally but also economically speaking since such materials could have been re-used or sold elsewhere<sup>21</sup>.

Numerous freshwater sources become polluted with hazardous chemicals upon contact with these dyes, as they contain various carcinogenic compounds. Additionally, the use of chlorobenzenes in dyeing and finishing processes poses certain health risks, along with the presence of formaldehyde and other substances. It is important to mention the utilization of chlorinated paraffin during these stages, as it can also lead to adverse effects on individuals over time. The lack of information regarding nearly thirty percent of the ingredients used in textile production further complicates efforts to understand and mitigate the environmental health impacts caused by these substances. This issue is exacerbated by the fact that most supply chains operate outside the strict regulatory frameworks of the USA and EU, resulting in limited transparency regarding the chemical composition of dyes<sup>22</sup>.

Furthermore, approximately thirty % of the chemical substances employed in textile manufacturing are kept confidential, making it even more challenging to address these concerns effectively. As consumers become more aware of the environmental issues surrounding them, there is a growing need for better ways to dye clothes, not only must these methods be sustainable, but they should also be efficient and cheap. New technologies being developed range from pretreating cotton to reduce water, energy, and chemical use; to using pressurized CO<sub>2</sub> during the application process right down to harvesting natural pigments via microbial sources; all these breakthroughs seek to revolutionize current practices to make them greener<sup>23</sup>. However, amongst such pioneering solutions come a few start-ups that stand out because their contributions are not only unique but also impactful: Color Zen leads the pack when talking about re-using fiber optic cables; this is achieved by introducing a new kind of reactive molecule into a solution which then causes the change to occur within the fabric itself thus allowing easier penetration, etc. Dye Coo uses CO<sub>2</sub> in its supercritical state as a dyeing medium, which is a new solution. In that condition, CO<sub>2</sub> has different properties that make it

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<sup>21</sup> Sofia Willis (2023), "How Sustainable Dyeing is Changing the Textile Industry", Plug and Play Tech Center (Online)

<sup>22</sup> H. Liao, X. Li, Y. Zhou, Y. Wu, Y. Cao, J. Yang, & J. Zhang (2023), "Biomonitoring, exposure routes and risk assessment of chlorinated paraffins in humans: a mini review," Environmental Science: Processes & Impacts, Royal Society of Chemistry (Washington, D.C.)

<sup>23</sup> Greentech Textiles (2024), "Revolutionizing Textile Dyeing Methods for Sustainability", Greentech Textiles (New York)

possible for dyes to dissolve better and soak into the fibers more deeply so that they can be uniformly bright. Another thing about this closed-loop system is that it does not use water hence no production of wastewater. The utilization of microbial pigments in dyeing textiles represents an exciting sustainable frontier too. Under this method, bacteria are allowed to produce natural pigments which could result in various colors depending on how *Streptomyces* spp grows. What sets apart this technique from others is its low water consumption during dyeing compared with conventional methods and it also offers new avenues for patterning fabrics<sup>24</sup>.

Partnerships between giants in fashion like Living Color and emerging companies are crucial for the widespread adoption of environmentally friendly dyeing techniques. Living Color uses bacteria that produce pigments when dyeing clothes thereby conserving water at the same time reducing the chemicals used. Joint ventures with well-known brands such as their recent collaboration on a sports range dyed by bacteria with Puma demonstrate the profitability and eco-friendliness these technologies offer. Sustainable dye practices cannot be achieved alone; they require collective action through investment, innovation, and industry-wide partnership. Supporting enterprises or startups like these will help the fashion industry move towards being greener by shrinking its environmental footprints, cutting costs, while saving natural resources necessary for tomorrow's survival<sup>25</sup>.

### **2.3 The Circular Economy Model**

It has been reiterated numerous times that individuals are currently more environmentally aware than ever. As a result, the fashion industry must adapt its practices to produce and utilize products more sustainably, particularly within the luxury sector. The focus is on establishing a sustainable framework that prioritizes enduring fashion and longevity. Students like Chloé Janssens studying Luxury Brand Strategy & Business are leading this charge by asking how we can apply a circular economy to luxury fashion<sup>26</sup>.

A circular economy seeks to extend the life of clothing so that it does not wind up in landfills; a method achieved through things such as renting, reusing, or reselling garments within brands themselves or via third-party luxury resale firms. This method not only aids in maintaining a

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<sup>24</sup> Fabriclore Team (2023), "Sustainable Dyeing and Finishing Methods in Textile Industry", Fabriclore (Jaipur)

<sup>25</sup> Living Color (2024), "The Power of Partnerships: Revolutionizing Fashion Dyeing Techniques," Sustainable Textiles Review (London)

<sup>26</sup> Janssens, C. (2024), "Leading the Charge: Applying Circular Economy to Luxury Fashion," Sustainable Luxury Journal (Paris)

cleaner environment through extending the lifespan of products but also entices financially savvy ethical consumers who desire a return on their investment, making sustainability attractive.

The overarching implication is that when investing in something expensive, one should anticipate both desirability and sustainability. Luxury brands have been at the forefront of addressing growing social consciousness around environmental issues with initiatives like resale programs and recycling campaigns designed specifically for them. Many businesses prefer to use new materials instead of recycled ones, which is believed to have a significant negative impact on the environment. However, there is a growing trend among companies to realize this issue and take action to minimize damage<sup>27</sup>. Some businesses have chosen a different approach by not only recycling, but also reusing materials whenever possible. This not only reduces the impact on the Earth's resources but also maximizes profit margins.

McKinsey & Company estimates that the global secondhand market generates an average of 25-30 billion \$ in sales each year, with an annual growth rate of 10-15% since 2013<sup>28</sup>. This demonstrates that businesses can economically benefit while also being environmentally conscious. Fabienne Lupo, Founder and CEO of ReLuxury, offers “Luxury is meant to last forever. We need to raise awareness about a new way of consuming. Buying new has lost its shine”<sup>29</sup> which indicates an increased desire for environmentally friendly luxury items over traditional ones.

Gucci's launch of the Gucci Vault exemplifies the transformative shift in the luxury fashion industry towards sustainability, spearheaded by its last creative director, Alessandro Michele. This innovative initiative merges historical, contemporary, and futuristic elements of fashion into a unified, eco-friendly platform. The Vault, accessible both online and in physical spaces, serves as a showcase for vintage Gucci items that have been creatively upcycled and reinterpreted by a selection of emerging designers. This approach not only breathes new life into pre-existing pieces, but also aligns perfectly with the values and digital proficiency of the Gen Z audience, who are increasingly conscious of sustainability issues. By doing so, Gucci Vault demonstrates the significant role that sustainability can play in sparking innovation and

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<sup>27</sup>Chloé Janssen (2023), "Luxury Circularity: How Brands are Changing the Mould of Consumption", Conde Nast College (London)

<sup>28</sup>Anita Balchandani, Marco Beltrami, Achim Berg, Saskia Hedrich, Felix Rölkens, Imran Amed (2019), "The End of Ownership for Fashion Products", McKinsey & Company (New York)

<sup>29</sup>Fabienne Lupo (2024), "Redefining Luxury Consumption: Embracing Sustainability in the Fashion Industry," EcoLuxury Magazine (New York)

maintaining consumer interest within the luxury fashion sector, proving that eco-conscious practices can coexist with luxury and exclusivity.

In addition to company-initiated sustainability efforts, there are now other resale platforms such as The RealReal that are making an impact. These platforms have set a higher standard for luxury resale by ensuring authenticity and curating a unique selection of second-hand items. The move towards a circular economy in fashion is not only tackling climate change head-on but also celebrating the artistic excellence and historical relevance embedded within high-end clothing. As Julie Wainwright, CEO of The RealReal, puts it “Addressing the climate crisis means creating permanent change within the fashion industry and reversing the damage we’ve done.”<sup>30</sup>. This view highlights the two-fold benefits of circularity: lessening environmental harm while preserving the cultural and aesthetic significance of luxury garments.

Until recently, the market for reselling luxurious goods experienced tremendous growth. This boom can be attributed to more individuals being environmentally conscious and cost-consciousness with the rising cost of living. According to Forbes, the global worth of pre-owned designer items hit 38 billion \$ last year<sup>31</sup>. Traditionally luxury brands were afraid that selling used products would ruin their exclusive image. However, they have embraced this idea because The RealReal or Vestiaire Collective showed them people love buying real second-hand merchandise.

Nevertheless, there are some problems within the reselling business which were demonstrated through legal battles between Chanel and What Goes Around Comes Around (WGACA) - a luxury vintage retailer offering high-end pre-owned accessories and apparel from top brands. Chanel claimed that WGACA was misleading customers by insinuating a connection with Chanel thus harming its reputation. This instance indicates the need for verification as well as original purchase from the brand when dealing with resales to avoid legal issues.

The luxury fashion industry has also become dynamic whereby people not only buy things but rent or remodel them too. The main driver for this change is a desire for freshness combined with affordability and eco-friendliness. There are predictions that in the next ten years, the resale market might outgrow fast fashion. This shift in consumer behavior is significant because people want fashion more accessible rather than owning it outright like before. This is equivalent to conceptualize Spotify or Netflix but for clothes; that is the direction fashion is heading towards. Young consumers these days crave new styles whilst keeping sustainability

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<sup>30</sup> Julie Wainwright (2024), "Driving Permanent Change: The Intersection of Fashion and Climate Action," Sustainable Fashion Review (London)

<sup>31</sup> Forbes (2024), "The Global Market for Pre-Owned Designer Items Reaches \$38 Billion," Forbes

at heart meaning they buy lots of clothes only to keep them for short durations. Going forward, there will be more players entering into rental, second-hand sale, and refurbishment space among brands. This is not just a fad but rather a change in how we view ownership and enjoyment of fashion. Brands need to think strategically about their approach toward this new reality including partnering up with other organizations, establishing their platforms, or even engaging in mergers and acquisitions.

At last, the fashion industry is going through a tremendous change regarding sustainability and affordability through second-hand selling, leasing, or restoration. People are more likely to choose these substitutes due to several reasons such as novelty, eco-friendliness, and saving money. In response to this development, high-end brands have started transforming themselves so that they can provide used or rented articles on top of brand-new ones. Such a transformation indicates wider changes in consumer preferences and actions thus showing that the luxury fashion industry needs to become sustainable and inclusive<sup>32</sup>.

## 2.4 Ethical Sourcing

The fashion world has a long history of facing ethical challenges, often leading to significant changes in how the industry operates and is regulated. Take the tragic Triangle Shirtwaist Factory fire in New York back in 1911; this disaster was a wake-up call that led to the creation of laws to ensure the safety of factory workers across the USA. Then there is Rachel Carson's influential book "Silent Spring" from 1962, which exposed the harmful effects of pesticides like DDT on the environment, including how they were used on cotton farms. Carson's work led to tighter controls on pesticide use and helped kick off the environmental movement in the late 60s, aiming for cleaner ways to produce materials.

More recently, the 2013 collapse of Rana Plaza catalyzed pushing the global fashion industry towards greater transparency in its supply chains, striving to improve the working conditions of garment workers everywhere. Despite all the hard work put into it, there are still obstacles that persist, often hidden within the intricate web of global supply chains<sup>33</sup>. However, suppose the industry comes together. In that case, it can eliminate harmful practices by committing to supply chains that can be traced and are transparent, guaranteeing that every single step of the process is easily understood and accessible.

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<sup>32</sup> Hannah Fawcett (2023), "Luxury Brands and the Circular Economy", Brabners (Liverpool)

<sup>33</sup> Fashion Ethics (2024), "A Historical Perspective: Ethical Challenges in the Fashion Industry," FashionEthics Magazine (New York)



When we talk about 'transparency' and 'traceability' in the context of ethical fashion sourcing, we refer to two interconnected ideas. 'Transparency' means openly sharing information about how a business operates. This includes providing details about the entire supply chain and how it impacts workers, the environment, and society at large. 'Traceability', on the other hand, is about being able to track the journey of a product from its very beginning (like the farm where cotton is grown or the mine where gold is extracted) right through to when it is sold to a customer. In simple terms, traceability lets you track the path of a product, and transparency is about openly sharing that path along with other details about how a company works. Embracing these concepts is a key step for any business aiming to operate ethically, as it helps them understand and lessen their impact on both people and the planet. Orsola de Castro, who co-founded Fashion Revolution, perfectly captures this sentiment: "Demand quality not just in the product you buy, but in the life of the person who made it."<sup>34</sup> This powerful statement highlights the importance of considering the wider impact of our fashion choices, emphasizing that the quality of a product is not just about the item itself but also about the conditions under which it was made.

Talking openly about the origins and production processes of goods may seem like revealing confidential information for certain companies. Some brands may worry about uncovering potential problems in the public eye. Nevertheless, in today's market where ethical consumption is valued, being honest can greatly help a brand. This transparency can address issues concerning labor rights, environmental impact, and animal welfare. Additionally, there is a rising desire among customers for ethical fashion. For example, a study conducted by Fashion Revolution in 2020 revealed that 75% of consumers expect fashion labels to improve the conditions of garment workers, and 69% are interested in learning about the manufacturing of their clothes. The same research has also shown that individuals are willing to spend more on items from companies that are open about their supply chains<sup>35</sup>. Transparency is an essential factor in safeguarding a brand's reputation. Uncovering instances of human rights abuses or environmental violations within your supply chain can rapidly erode consumer trust, which may result in a decline in sales. However, transparency not only mitigates these risks but also strengthens relationships with suppliers, enhances product quality, and promotes adaptability and cost-efficiency within your business.

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<sup>34</sup> Orsola de Castro (2022), "Demanding Quality: A Call for Ethical Fashion", Ethical Style Magazine (London)

<sup>35</sup> Fashion Revolution (2020), "Consumer Expectations in Ethical Fashion: Insights from a Global Study", Fashion Revolution Report (London)

In countries like Australia, the importance of transparency is further emphasized due to specific laws that fashion brands must adhere to. For instance, the Australian Modern Slavery Act (2018) mandates businesses to disclose potential risks of modern slavery within their supply chains. Complying with these regulations not only ensures adherence but also enhances the integrity of your brand. Tamsin Lejeune, the CEO of Common Objective, highlights the advantages of adopting ethical business practices: they nurture trust, promote fair work environments, and contribute to the strength of the fashion industry. When companies are open about their operations, it not only earns them customer loyalty but also helps in recruiting dedicated employees. Ultimately, everyone benefits from being associated with businesses that command respect, offering products that are not only appealing in appearance but are also responsibly made. Lejeune emphasizes, "Ethical and transparent practices increase trust at every level. Fair practices create work that is fulfilling, rather than exploitative, across industry supply chains. This approach increases customer loyalty and makes it easier to attract great staff. In the end, we all want to work for companies whose integrity we can be proud of. We all want to wear clothes that look great and are also made well."<sup>36</sup>.

Creating an ethical and transparent supply chain is essential for building trust, promoting fair work conditions, and bolstering the sector. These measures not only improve customer loyalty but also increase the likelihood of attracting dedicated staff. In the end, there is a shared inclination towards interacting with and endorsing companies known for their honesty, providing goods that are not only visually appealing but also ethically manufactured. To progress towards this goal, here are recommended steps for businesses to adopt. Initiate by mapping out the supply chain as represented in Figure 3. This could vary in scope from focusing on a single product to an entire product line, or a specific category, depending on the size and capability of the business. The objective should be to gain as clear an understanding as possible of the supply chain's various tiers, ranging from Tier 1 (Cut-Make-Trim facilities), through Tier 2 (Material manufacturing), and Tier 3 (Yarn producers), to Tier 4 (Raw materials generation including agriculture, farming, and/or extraction). Figure 3 depicts a simplified global supply chain network for a shoe manufacturing company (Timberland), highlighting the path from material suppliers to production facilities across different continents.

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<sup>36</sup> Tamsin Lejeune (2023), "The Advantages of Ethical Business Practices in Fashion," Sustainable Business Review (London)

**Figure 3: Timberland boot supply chain map.**



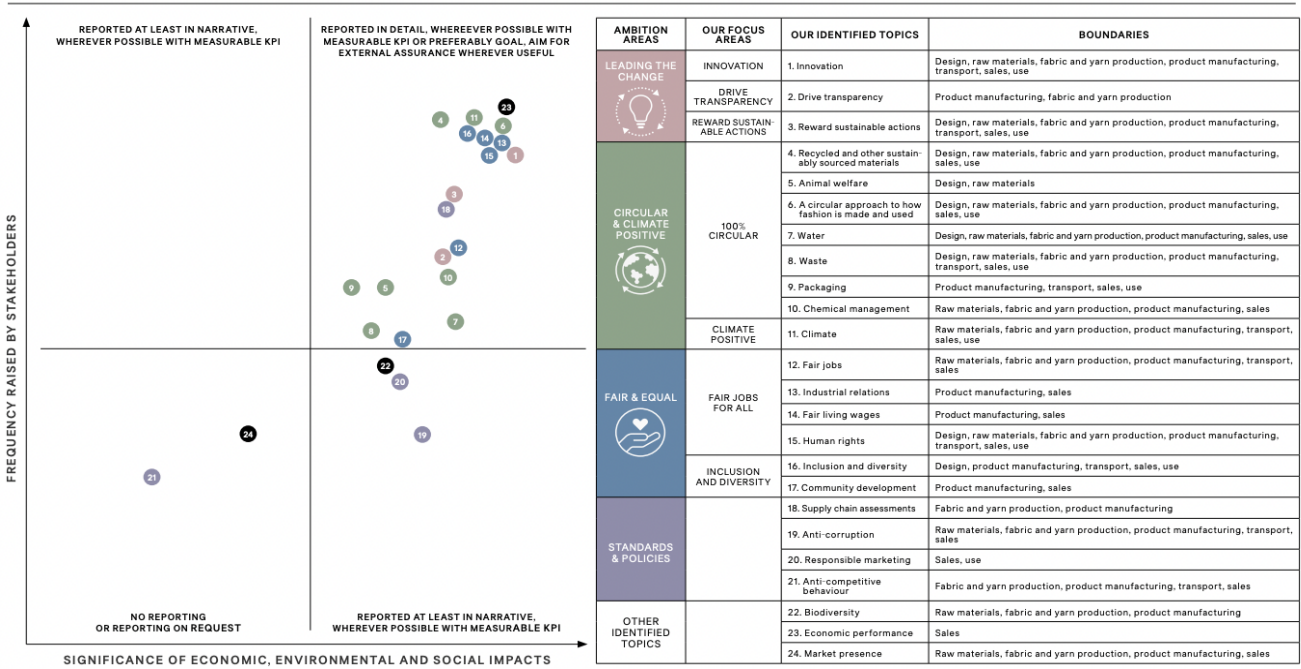
Source: Timberland, Stratham, NH.

The next phase involves identifying the core values of your brand when it comes to assisting individuals, and the environment, and achieving a reasonable profit. This process, known as a 'materiality assessment', entails engaging with stakeholders to determine potential risks and benefits associated with upholding these principles. Regularly revisiting these concepts is essential to ensure alignment. Additionally, sharing your findings with others through a sustainability report is recommended. Figure 4 analyzes H&M's materiality assessment and reporting<sup>37</sup>.

The third step entails gathering comprehensive information about the practices of each of your suppliers. Consider what you already know about them and identify those with whom you have direct contact versus those known through intermediaries. Creating a survey for your suppliers, based on the findings of your earlier materiality assessment, can be highly beneficial. For example, if preventing forced labor is a top priority, tailor your questions to gather information specifically on that topic. Alternatively, if environmental sustainability is your focus, ask questions related to that area. A portion of your survey should aim to verify ethical practices, whether through third-party audits, certifications, personal visits, or other forms of evidence.

<sup>37</sup> H&M (2023), "Strategic Sustainability Planning: A Case Study of H&M's Materiality Assessment and Reporting," Sustainable Business Review (Stockholm)

Figure 4: H&M's materiality assessment and reporting.



Moving on to the fourth step, building upon your materiality assessment, it is crucial to develop or update a code of conduct for your suppliers that aligns with your ethical sourcing objectives. It is important to communicate to your suppliers that you are committed to working together towards these goals and that you will be monitoring their compliance.

The fifth step involves determining what information about your supply chain efforts you will share publicly, and how you will do so, beyond meeting legal requirements. It is essential to be transparent about your achievements and plans. Transparency is particularly crucial in the early stages of establishing an ethical supply chain, as consumers can easily detect insincerity. Therefore, fully embracing transparency in communicating your progress in ethical sourcing is vital.

To wrap up, developing an ethical supply chain is a multi-step process that requires continuous effort and transparency. By diligently gathering information, collaborating with suppliers to improve practices, and openly sharing their progress, businesses can build trust with consumers and make a positive impact in the industry<sup>38</sup>.

<sup>38</sup> Australian Fashion Council (2021), "Ethical Sourcing", Australian Fashion Council (Melbourne)

## 2.5 The Blockchain Technology

Bridging the gap between the challenges and advancements in sustainability within the luxury industry, blockchain technology emerges as a pivotal solution in enhancing transparency, trust, and ethical practices, offering a seamless transition into exploring its specific applications and benefits as detailed in the subsequent sections. Despite facing challenges in sustainability such as sourcing materials and managing supply chains, the luxury industry is gradually shifting towards more socially responsible practices.

Additionally, consumers are becoming increasingly aware of the negative environmental impact of luxury items like diamond jewelry and leather bags. Many businesses aim to address public concerns by demonstrating increased social responsibility through various means, such as promoting eco-friendly practices or advocating for ethical standards like eradicating child labor and ensuring fair wages in production processes.

However, there are instances where companies claim to prioritize sustainability but fail to uphold their commitments. For example, Chanel asserts that they utilize leftover food leather, yet the authenticity of this claim remains uncertain. Similarly, Hermès highlights their efforts in protecting endangered species, yet there is a lack of concrete evidence to support their actions in this regard. Numerous fashion brands lack substantial evidence to support the assertions made on their websites and advertisements. Take Rolex, for instance, which emphasizes its status as a durable luxury brand but fails to disclose any concrete strategies or objectives for sustainability. The dissemination of such information is crucial in holding companies accountable and promoting transparency on a global scale. Without it, ethical concerns within the fashion industry will continue to fuel contentious debates. Luxury supply chains are complicated, involving many steps and players from production to delivery. This can lead to issues with transparency and sustainability getting overlooked.

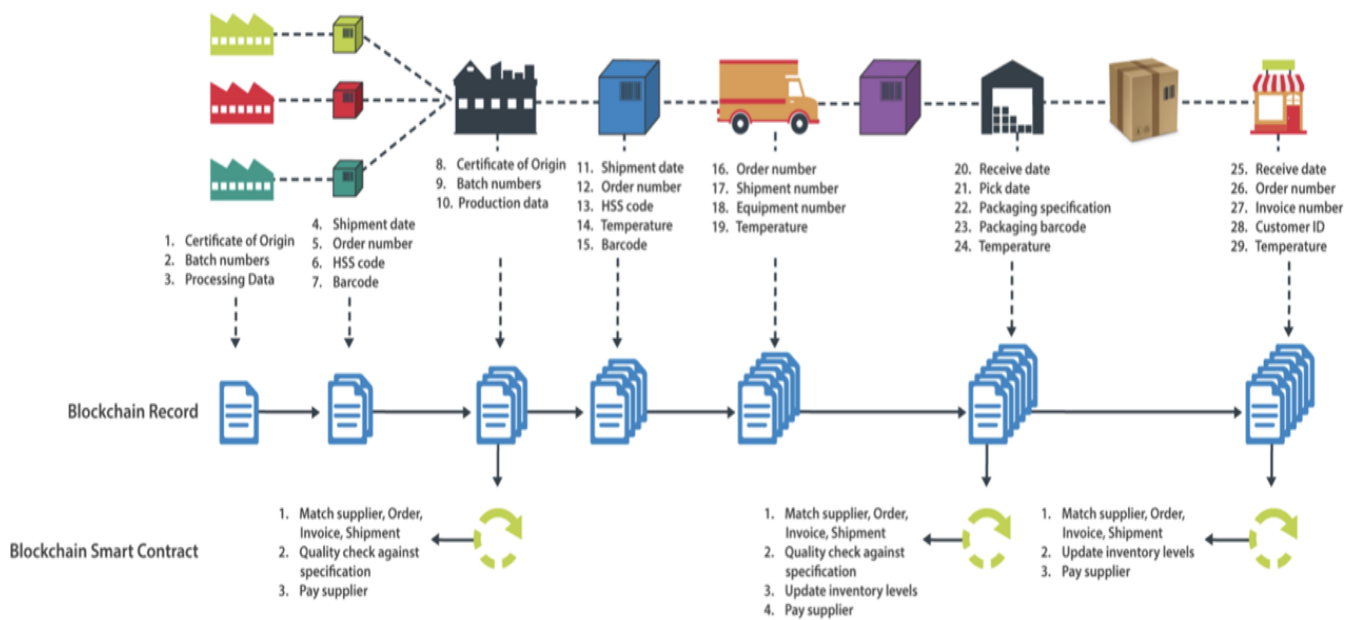
However, increased consumer awareness is pushing companies to be more responsible and environmentally friendly. These companies need to monitor not just their practices but also those of their partners since actions within the supply chain affect everyone. This is especially critical in luxury fashion, where the origin and creation of products are highly scrutinized. Luxury brands frequently encounter difficulties in monitoring their raw materials and production processes.

Anyhow, blockchain technology has the potential to alleviate these challenges. Imagine blockchain as a secure pathway of information that necessitates unanimous agreement before any new data can be incorporated. This transparency fosters trust among stakeholders. It

enables brands to demonstrate their accountability and facilitates effective monitoring of their supply chain as in Figure 5, that illustrates a supply chain process monitored using blockchain technology. It details the data captured at each stage of the supply chain, from the certificate of origin to the final customer ID. This information is recorded on a blockchain, ensuring traceability and security. Blockchain smart contracts are used for supplier verification, quality checks, and payments<sup>39</sup>.

Although blockchain offers time and cost savings, companies must carefully select the appropriate type and maintain honesty in sharing information for it to yield optimal results.

**Figure 5:** Blockchain-based supply chain, tracking production to retail with data recording and smart contracts.



Source: Blockgeeks, Toronto, ON.

Ever since the emergence of eco-fashion, fashion brands have strived to enhance their transparency regarding their ethical endeavors. It has become customary for them to disclose their efforts in becoming environmentally friendly throughout the entire production process. Nevertheless, due to the intricate nature of the fashion supply chain, maintaining transparency at every stage poses a significant challenge. Brands are exerting considerable efforts to guarantee the sustainability of their entire process, encompassing material sourcing and product recycling. For instance, Everledger utilizes blockchain technology to assign a unique digital ID to each product, revealing its origin and complete history, including details on sourcing materials and labor conditions. This information is accessible to customers as it is securely

<sup>39</sup> S. A. Johnson and M. H. Patel (2022), "Innovative Textile Recycling Techniques", Springer (Singapore)

stored on the blockchain. Similarly, Chow Tai Fook Jewelry Group leverages Everledger to offer reliable information on diamond grading to customers. On the other hand, Provenance is another platform that utilizes blockchain to provide shoppers with information about the product's makers and production process, whether in-store or online<sup>40</sup>.

By incorporating QR codes or links on product pages as in Figure 6, Provenance aims to establish a stronger connection between consumers and the products they purchase. However, tracking the origins of fashion products, which often consist of components from various locations, such as cotton from one country and buttons from another, can be challenging. The potential risk lies in brands falling behind if they fail to transparently disclose their supply chain practices, as modern consumers prioritize ethically produced goods. Everledger plays a crucial role in addressing this issue by showcasing a brand's positive environmental impact and commitment to transparency regarding sourcing practices. Luxury brands face the challenge of establishing trustworthy supply chains in the era of increased online shopping, particularly in the wake of the Covid-19 pandemic. This is particularly difficult due to the involvement of numerous individuals in the production process. Nevertheless, by enabling customers to track a product's journey from its inception to completion, brands can instill confidence in their customers regarding the origins of materials such as high-quality leather or cashmere. Consequently, customers are more likely to trust the brand, as they are aware of the brand's meticulous monitoring of factors like storage conditions.

The implementation of blockchain technology enhances the safety and transparency of tracking a product's journey, as it records every step in an immutable manner. This means that all parties involved, including both producers and consumers, can access this information while maintaining the privacy of sensitive data.

Gucci has been actively striving to create environmentally friendly products since 2010. They have successfully developed handbags, packaging, and glasses that can be traced back to their origins, demonstrating their commitment to sustainability. With the integration of blockchain, Gucci can provide tangible evidence of its sustainable practices and make it accessible to everyone<sup>41</sup>. For instance, a platform called Provenance utilizes blockchain technology to assign a unique digital "fingerprint" to each product. This fingerprint includes a comprehensive list of all individuals involved in the production process, ensuring transparency, and reducing

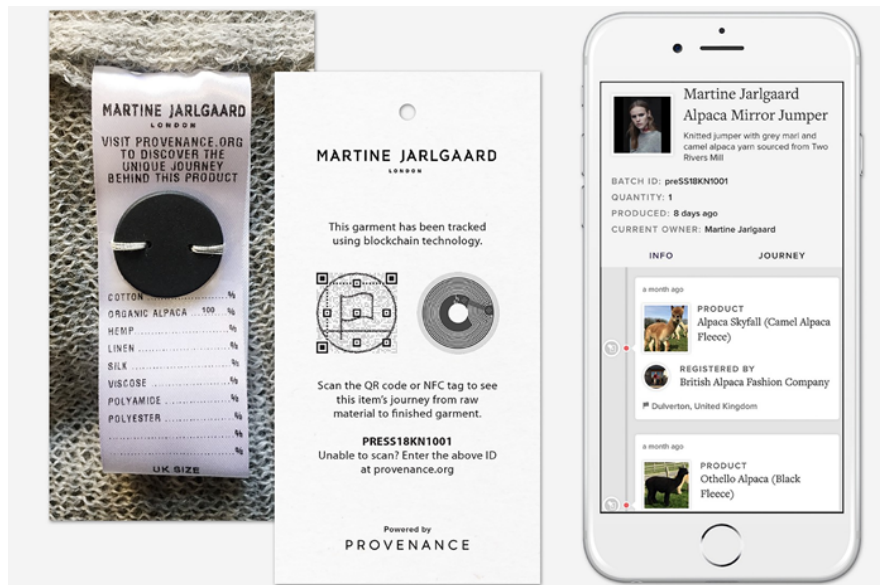
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<sup>40</sup> Fashion Transparency Report (2024), "Advancements in Eco-Fashion Transparency: Case Studies and Innovations," EcoStyle Magazine (New York)

<sup>41</sup> Gucci (2024), "Gucci's Commitment to Sustainability: Integrating Blockchain for Transparency," Gucci Sustainability Report (Milan)

ambiguity. Consequently, this fosters a sense of trust among customers and partners, as they gain a better understanding of the brand's manufacturing practices.

*Figure 6: Blockchain-tracked garment with tags and a mobile interface detailing its journey from raw material to finished product.*



Source: Martine Jarlgaard, London.

Companies are leveraging blockchain technology to enhance trust in online luxury shopping by providing a secure and detailed history of their products, from materials to sales. This innovative approach offers a more reliable alternative to traditional paper certificates. Luxury brands such as LVMH have introduced platforms like Aura, which utilizes unique digital IDs to authenticate goods and showcase the entire production process. In addition, blockchain is making its mark in the gem industry through companies like Everledger, enabling consumers to track a gem's origins and characteristics for increased transparency and authenticity in luxury goods. Nowadays, a significant 80% of luxury shopping is influenced by digital means globally<sup>42</sup>. The utilization of blockchain technology has revolutionized the process of purchasing luxury goods for individuals leading a global lifestyle, facilitating seamless international payments. This innovative technology enables specific groups to share real-time information regarding sales or transactions, simplifying interactions for both new and existing customers with various partners, not limited to the brand itself. Moreover, the decentralized nature of blockchain ensures the security of customer data by dispersing it across multiple

<sup>42</sup> Smith, J. (2024), "Blockchain for Luxury: What Is It?", Scaling Parrots



nodes rather than storing it in a centralized location. Furthermore, blockchain enhances loyalty programs by functioning similarly to cash-back offers. Customers can accumulate rewards in a digital wallet and redeem them at their convenience, eliminating concerns about rewards expiring prematurely, a common reason for customers to disengage from such programs. Additionally, blockchain enables customers to utilize their rewards in diverse ways, enhancing their overall experience.

In addition, blockchain can significantly improve customer service. Brands can provide updates, and customers can seek assistance directly through the blockchain platform. This transparent exchange of information introduces a novel approach to managing loyalty programs, rendering them more adaptable and beneficial to customers. Blockchain technology offers luxury brands a reliable solution for managing information and finances more efficiently. By utilizing QR codes and images, brands can create digital representations of their products on the blockchain, enabling better control over stock and smoother operations. This technology not only aids in combating counterfeit products but also ensures secure and rapid tracking of data and transactions.

Moreover, companies like Levi Strauss have leveraged blockchain to gather feedback from factory workers anonymously, demonstrating a commitment to employee well-being. Despite its benefits, challenges such as interoperability issues between different blockchain systems, complexities in sharing confidential information within industry networks, and high costs associated with initiating blockchain projects pose obstacles for smaller brands. Additionally, the energy-intensive nature of blockchain technology raises concerns about its environmental impact. Overall, the luxury industry has a unique chance to tackle sustainability issues, verify product authenticity, and build consumer trust using blockchain technology. With its ability to provide thorough tracking and secure data sharing, blockchain promotes responsible and transparent business operations. Although challenges like expensive implementation, the necessity for standardization, and environmental concerns exist, the potential for blockchain to revolutionize luxury brands into beacons of sustainability and ethical behavior is substantial.

## CHAPTER 3

In response to increased environmental consciousness worldwide, the third chapter examines how sustainability is transforming the luxury fashion sector. The emphasis is on how consumers' values are changing, especially how younger generations are viewing luxury. Beyond the classic attributes of exclusivity and workmanship, sustainability is now seen as a crucial component of luxury. It also examines how luxury businesses are responding to these changing consumer needs while upholding their moral principles and renowned reputation, as well as resolving issues with transparency and greenwashing. The 2030 objectives set by the industry's businesses to lessen their environmental effect in line with global climate targets are also covered in the chapter. The study's overall findings emphasize how crucial it is to switch to sustainable methods for luxury businesses to stay relevant and responsible in a rapidly changing world.

### 3.1 Shifting Values: Targeting New Generations

The fusion of luxury fashion with sustainability is not merely a passing trend; it is a significant transformation that is reshaping consumer behavior and the very essence of the industry. The core principles of luxury, such as craftsmanship, exclusivity, and heritage, are now being redefined through the perspective of environmental responsibility. This major shift in consumer awareness is compelling brands to embrace sustainable methods as they cater to a new wave of customers who prioritize eco-consciousness as much as traditional luxury values.

The luxury fashion sector is experiencing a shift as consumers, particularly Millennials and Gen Z, incorporate environmental consciousness into their buying choices. These shoppers are on the lookout for brands that prioritize sustainability by using eco-friendly materials, ensuring fair treatment of workers, and maintaining transparency in their supply chains. Studies indicate that consumer interest in sustainable luxury fashion can be categorized into specific groups<sup>43</sup>. The "Eco-conscious Affluents" are individuals who value traditional luxury ideals but also insist on strong environmental commitments. These consumers are willing to invest more in products that align with their love for luxury and their environmental ethics.

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<sup>43</sup> Xiang, D., Ng, E., Cheng, J.C.P., & Hsu, S.C.Y. (2022). *The Influence of Digital Transformation on the Sustainable Development of International Trade* (London)

On the other hand, there exists a group known as the "Traditional Luxury Advocates," who are primarily attracted to the long-standing qualities of luxury such as heritage and exclusivity.

Although they are not completely unaware of sustainability, it does not significantly influence their purchasing decisions unless it adds to a brand's prestige or the product's uniqueness. In the middle ground, we find the "Aspirational Environmentalists," who appreciate luxury but are more driven by sustainable practices rather than traditional luxury values.

This segment, often consisting of younger consumers, aligns their spending habits with their values and supports brands that are transparent about their sustainable practices<sup>44</sup>.

Luxury brands are not only responding to this demand as a matter of compliance but also as a strategic differentiator in a competitive market. By incorporating sustainability into their narratives and products, these brands are attracting a customer base that prioritizes ethical and environmental considerations. However, the challenge for luxury brands lies in maintaining their exclusive and alluring image while embracing sustainable practices. This requires innovation in sourcing materials, designing products, and implementing marketing strategies that showcase their commitment to sustainability without compromising their luxury status.

Luxury fashion is currently at a crucial turning point as more and more environmentally conscious consumers, especially from the younger generations, emerge. These younger shoppers have distinct consumption habits, frequently making purchases while also displaying a strong concern for sustainability. In response, luxury brands are integrating sustainability into their core values and operational practices, aligning themselves with the preferences of these well-informed and technologically savvy consumers<sup>45</sup>. The combination of exclusivity and environmental responsibility is establishing a new standard that resonates with the values of today's shoppers, driving market growth. Fascinating trends among Generation Z indicate that although they engage with fast fashion for its affordability, they are increasingly prioritizing sustainability. This generation is vocal about the impact of their fashion choices on the environment and society, often choosing to sell or exchange garments rather than buy new ones. Generation Z's relationship with luxury brands differs from other demographics, as they prefer slow fashion and prioritize quality and sustainability<sup>46</sup>.

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<sup>44</sup> R. E. Luminance (2024), "Sustainability as Strategy in Luxury Brand Markets," EcoChic Press (New York)

<sup>45</sup> Kanj, L. (2022). How the Sustainability Efforts of a Luxury Fashion Brand Affects Consumer Behavior in Young Adults, Primarily Gen Z and Millennials (Louvain)

<sup>46</sup> C. Greene (2024), "Generational Shifts: Sustainability in the Age of Gen Z," New Paradigm Publishing (Los Angeles)

They expect brands to take responsibility for their environmental and societal impact, demanding a serious commitment to corporate responsibility. This stands in stark contrast to some Millennials who similarly view luxury shopping as fast fashion. The influence of socially conscious individuals, particularly from Gen Z, is having a significant impact. Their emphasis on transparency and ethical practices is reshaping how luxury fashion brands operate. Experts predict that by 2035, this demographic will dominate the market<sup>47</sup>. They are drawn to brands that align with their values, underscoring the importance of authenticity and accountability in attracting younger consumers. Looking ahead, Gen Alpha, the successors of Gen Z, are poised to revolutionize luxury fashion even further. Growing up in a digital age with heightened environmental concerns, they are expected to be the most environmentally conscious generation yet. Raised by Millennials, Gen Alpha's global connectivity and fluency in social media amplify their focus on sustainability and the environment<sup>48</sup>. As the luxury fashion industry faces these changes, it is crucial to comprehend and cater to the complex motivations and behaviors of younger consumers. The future will likely be dominated by a consumer base that is even more socially aware, which means luxury brands must adapt and innovate to meet the ethical and sustainable expectations of these influential groups. The continuous growth of luxury fashion relies on its ability to combine exclusivity with environmental responsibility, creating a bond with the values of modern consumers and driving market expansion. This all-encompassing approach will not only redefine the essence of luxury but also ensure its relevance and strength in a world increasingly shaped by ecological and social consciousness.

### **3.2 Non-financial Reporting**

Luxury brands are changing to meet the new preferences of consumers who care about sustainability. They are also being asked to be more transparent and accountable in their reporting, which is important for keeping trust and authenticity in their sustainable efforts.

Sustainability must now be integrated throughout the whole supply chain in the luxury fashion sector. As previously stated, the need for traceability and transparency is driving the fashion industry's shift to sustainable methods. These concepts are crucial because they include a wide range of stakeholders from diverse backgrounds and locations, including producers, retailers, and suppliers of raw materials. The fashion industry's non-financial reporting highlights the

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<sup>47</sup> Palomo-Domínguez, I., Elías-Zambrano, R., & Álvarez-Rodríguez, V. (2023). "Gen Z's Motivations towards Sustainable Fashion and Eco-Friendly Brand Attributes: The Case of Vinted," Sustainability

<sup>48</sup> Vilaça, J. (2022). "Gen Z & Gen Alpha: The Luxury Market's Flirtation," Fashioninnovation

intricate production procedures that fashion products undergo, including numerous stakeholders.

Such reporting aims to give readers and analysts a comprehensive picture of a brand's impact by including social and environmental repercussions in addition to financial statistics<sup>49</sup>. Customers are starting to hold fashion labels more responsible for the sources and effects of their items these days. By providing accurate and dependable information, companies enable customers to make informed decisions and establish credibility. Conversely, a brand's reputation might suffer greatly from a lack of transparency. Transparency plays a crucial role in the fashion industry, as it involves the open sharing of reliable and extensive information about supply chains and business operations. This practice is essential for ensuring that brands are held accountable for their actions. Transparency is not limited to public consumption; it serves as a valuable resource for various stakeholders such as investors, governments, NGOs, and journalists to actively participate in and evaluate a brand's practices.

Nevertheless, it is important to note that transparency alone does not guarantee sustainability. A company can be transparent in its operations but may still lack significant contributions towards social and environmental causes. The conventional accounting models, which mainly concentrate on financial reporting, frequently fall short in addressing the intricate inquiries from diverse stakeholders who are concerned with wider corporate effects. Acknowledging this deficiency, there has been an increasing recognition within academic and professional communities regarding the significance of integrating non-financial data into company assessments<sup>50</sup>. This data is crucial for analyzing a company's broader effects and facilitating dialogues with stakeholders, ultimately promoting corporate development, and yielding positive outcomes in economic and financial markets. In the luxury fashion sector, sustainability reporting is guided by frameworks like the Global Reporting Initiative (GRI), aiding companies in conveying their initiatives in environmental, social, and governance (ESG) standards. These reports are designed to offer transparency, granting companies a competitive advantage, ensuring adherence to regulations, and bolstering their public image<sup>51</sup>. However, the consistency and thoroughness of these sustainability reports may vary, especially in the realm of overseeing and supervising supply chain operations. The intricate nature of fashion

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<sup>49</sup> Fashion Revolution Team (2023). "Fashion Transparency Index 2023," Fashion Revolution

<sup>50</sup> Severin, G. (2020), Non-financial Performance Measurement in the Fashion Industry (Venice)

<sup>51</sup> Hakan Karaosman, Alessandro Brun, Gustavo Morales-Alonso (2022), Sustainability in Fashion Supply Chains: Assessing Sustainability Reports, Politecnico di Milano (Milan)

supply chains, encompassing various stages from sourcing raw materials to production, presents notable obstacles.

These obstacles are magnified when engaging with suppliers in different regions worldwide, often in areas with lenient enforcement of labor and environmental regulations.

To boost supply chain transparency and traceability, certain fashion companies have embraced blockchain technology, a subject extensively discussed in the previous chapter. This technology aids in tracing the origins of materials and confirming compliance with sustainability criteria. Apart from technological solutions, companies are collaborating closely with suppliers to enhance sustainability practices through education, assessments, and nurturing enduring partnerships. Additionally, innovative sourcing approaches, such as utilizing recycled materials and partnering with suppliers utilizing renewable energy, are being utilized to minimize environmental footprints and attract environmentally conscious consumers. In essence, although sustainability reporting in the fashion industry offers a valuable structure for showcasing dedication to environmental and social obligations, the success of these endeavors hinges on thorough execution throughout the entire supply chain.

In the European Union, non-financial reporting has been adopted with directive in 2014 (NFRD). The directive has been revised, fine-tuned, and updated in 2022 as the new Corporate Sustainability Reporting Directive (CSRD).

### **3.3 Greenwashing**

As sustainability and Corporate Social Responsibility (CSR) continue to be important in business practices, the fashion industry faces the issue of greenwashing. Greenwashing happens when companies exaggerate their sustainability efforts to improve their public image and attract environmentally conscious consumers. Tactics like decoupling, where companies claim compliance without taking real action, and attention deflection, where they focus on small positive impacts to distract from larger negative practices, are used<sup>52</sup>. This dishonest approach undermines real sustainability efforts and can mislead consumers. Figure 7 provides a guide on identifying greenwashing by highlighting common misleading tactics like vague language or irrelevant claims, and it advises on what true sustainable practices to look for, such as accountability, accreditation, clear labeling, and traceability. To fight greenwashing, fashion

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<sup>52</sup> The concept of decoupling used here is different from the concept of decoupling proposed by OECD and IRP which focus on the need to decouple the trend of GHG emissions and pollution from the trend of GDP.

companies must build genuine relationships with stakeholders. This means having open communication with everyone interested in the company's operations, like consumers, suppliers, and investors. These conversations should be honest and based on verified data to ensure that companies' claims about sustainability practices are true<sup>53</sup>. By doing this, fashion brands can earn trust and show their dedication to sustainability. Third-party validations and certifications are crucial in verifying a company's sustainability claims. These external evaluations confirm the authenticity and effectiveness of the sustainability practices that companies promote.

By showcasing such validations, companies can prove their sincere dedication to environmental and social standards. Moreover, utilizing social media and digital platforms can improve transparency and build consumer trust.

These platforms provide a direct way for brands to communicate their sustainability initiatives and for consumers to engage and offer feedback. This interaction helps ensure that the information shared by companies is easily accessible and understandable to the public, bridging any knowledge gaps<sup>54</sup>. Overall, although the fashion industry has made progress in sustainability reporting and practices, the real challenge lies in ensuring the authenticity and impact of these efforts. Fashion brands must go beyond mere compliance and embrace innovative and comprehensive practices that not only meet but surpass current sustainability standards. This genuine commitment to sustainability is crucial for the industry to create a sustainable future that aligns with consumer expectations and environmental requirements.

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<sup>53</sup> Tavintharan, V. (2023). "Greenwashing: The Misleading Marketing of Sustainable Products and Initiatives," Singapore Environment Council (Singapore)

<sup>54</sup> Akepa (2021). "Greenwashing examples for 2023 & 2024: Worst products & brands," The Sustainable Agency

Figure 7: Tips to spot greenwashing and ensure genuine sustainability efforts..

**How to Spot green washing**

There are a few common tricks that you can watch out for to make it easy to spot greenwashing and dubious sustainability claims:

**VAGUE 'GREEN-SOUNDING' LANGUAGE:**  
Look out for words that sound good at first but have no concrete meaning legally, like 'farm fresh' or 'conscious'.

**IRRELEVANT CLAIMS:**  
Making a big noise about one tiny green attribute on an otherwise totally anti-green product.

**BADLY THOUGHT-OUT BIG GESTURES:**  
A classic one when an idea has come from a marketing team instead of experts.

**MISLEADING NUMBERS AND PERCENTAGES**

**REBRANDING TO INCLUDE 'natural' PACKAGING**  
Products that change their look to apply the veneer of sustainability, but without actually changing anything.

**MAKING THE PRODUCT PACKAGING GREEN**

*At its core, greenwashing is all about misdirection.*

**SO WHAT SHOULD WE BE LOOKING OUT FOR TO KNOW IF A BRAND IS FOR REAL**

- Accountability**  
Ironically, truly sustainable brands are transparent about how they're affecting the environment.
- Clear labeling**  
Sustainable products should include simple language labels about exactly what's in a product.
- Accreditation**  
Don't just take brands' words for it. Look for companies that are audited or accredited by third parties.
- Traceability**  
Some forward-thinking brands have been helping buyers track their products' sustainability using helpful tech.

Source: Azure Kingfisher, Melbourne, Australia

### 3.4 Pioneering Sustainability Goals for 2030

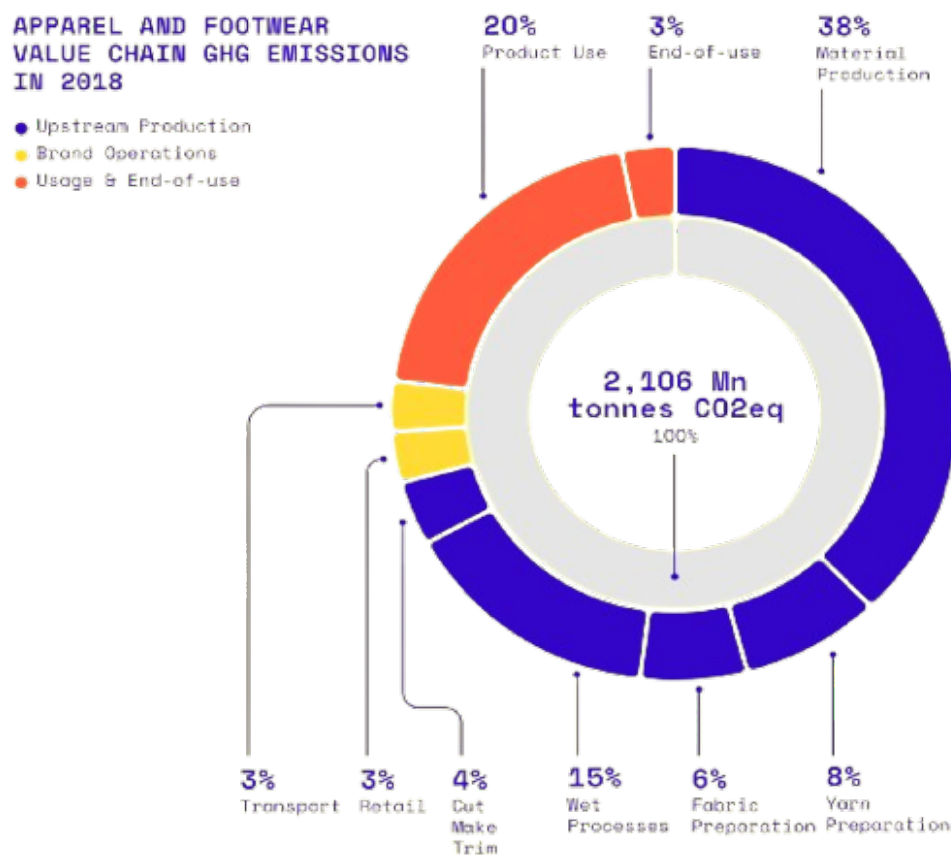
Having explored the challenges of transparency and greenwashing, we now turn our attention to the broader global events that underscore the urgent need for the fashion industry to redefine its sustainability goals for the coming decade. The fashion industry has been hit hard by the exceptional events of the past few years, such as the Covid-19 pandemic and worldwide Black Lives Matter protests. It is evident from these crises that all parts of our global systems are interconnected and vulnerable. This has had severe implications for businesses operating globally, economic structures, and societal norms; it has also brought to light some deep-seated problems with the fashion industry like problematic supply chains, high levels of greenhouse gas emissions, unethical employment practices, overproduction on an industrial scale, and



incredible amounts of wasted resources<sup>55</sup>. These issues specific to this sector manifest symptoms reflective of wider environmental challenges, most notably climate change, which will further socio-economic gaps while causing environmental degradation. Therefore, it is important for us not to forget what role fashion plays in context like this when considering, up to a 2020 McKinsey estimate, that only around 50 companies have aligned themselves towards achieving the Paris Climate Change Agreement’s aim which seeks to limit average global temperature increase below 1.5 degrees Celsius<sup>56</sup>.

Fashion alone accounts for approximately 2.1 billion tons of CO<sub>2</sub>e per year representing about 4% of global emissions as represented in figure 8 from the Mckinsey report. To put into perspective these numbers are total annual emissions produced by countries such as France, Germany, or UK combined. A closer look at the data shows us that nearly 70% originate upstream stages, i.e. the raw material production phase is known to be energy intensive whereas the rest comes from downstream activities including transport packaging retail operations use disposal etc.<sup>57</sup>.

*Figure 8: Fashion industry CO<sub>2</sub> emissions breakdown for 2018.*



<sup>55</sup> Stand.earth (2021), Quiet but Polluting: Luxury Brands are Costing Us the Planet, Stand.earth (Vancouver)

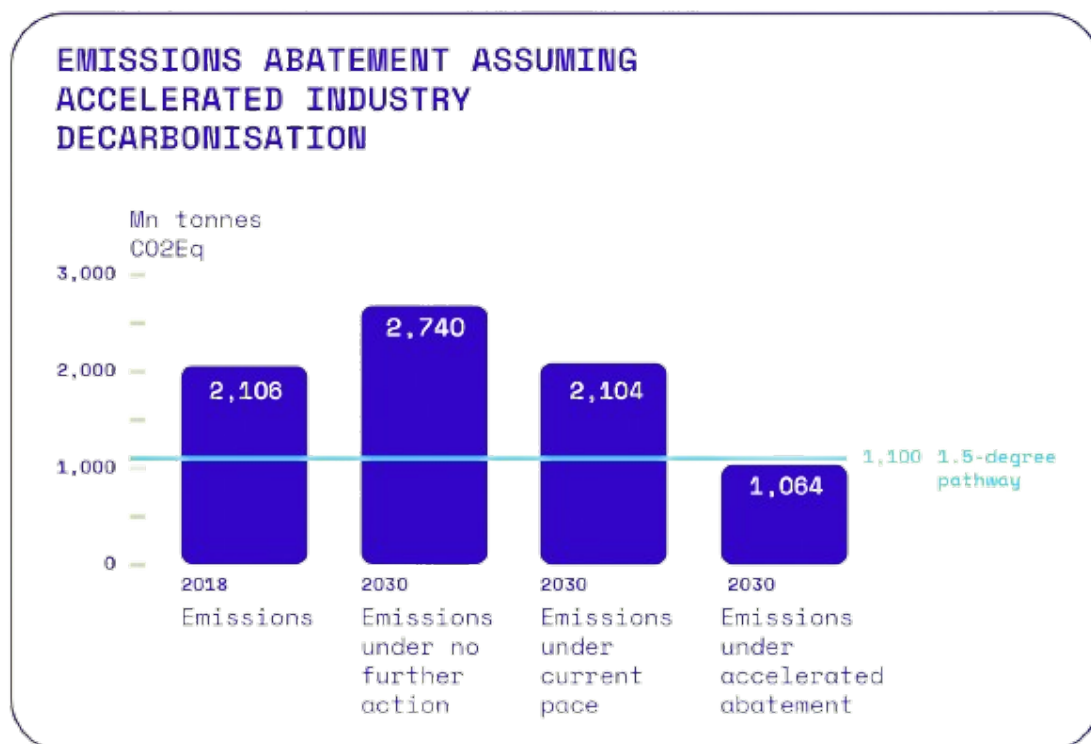
<sup>56</sup> McKinsey & Company (2020), Fashion on Climate, McKinsey & Company (New York)

<sup>57</sup> IEA (2022). "Global CO<sub>2</sub> emissions rebounded to their highest level in history in 2021", International Energy Agency (Paris)

If nothing changes between now and then, we could see our emissions increase up to 2.7 billion tons of CO<sub>2</sub>e by the year 2030 should the current trajectory remain unaltered. The McKinsey report considers two scenarios for reducing emissions within the fashion industry:

- Current pace scenario: If we continue with current decarbonization strategies, then Fashion industry can expect its CO<sub>2</sub> output levels hovering around 2.1 trillion kilograms by 2030.
- Accelerated abatement scenario: Otherwise, if more aggressive approaches will be implemented, emissions could be halved so that they will fall within the range of 1.1 trillion kilograms CO<sub>2</sub>e by 2030 mainly through improving upstream operations brand optimization consumer sustainable behavior change interventions as shown in figure 9 (McKinsey).

**Figure 9:** this image shows what could happen if tougher steps are taken, emissions might drop to 1.1 trillion kilograms CO<sub>2</sub>e by 2030.



Most emission reduction measures are not only environmentally friendly but also economically sound. For example, bettering transportation logistics and cutting down on packaging will save money as well as reduce carbon footprint. However, there might be increased initial investment costs if there is a shift towards using more recycled materials alongside other sustainable practices.

After 2030 the fashion industry needs to completely overhaul its emission reductions strategy, or it will not achieve any further significant emissions drop-offs beyond this point. This may entail moving away from traditional mass production models towards creating fewer higher quality longer lasting items and adopting business designs that minimize inventory waste through embracing circular economy principles coupled with made-to-order production, thus enabling the sector to manage growth without sacrificing climate ambitions<sup>58</sup>.

This is a crucial moment for the fashion industry; it must acknowledge the impact of global GHG emissions from its activities and use this opportunity to drive real change. Covid-19 has presented both challenges and opportunities for transformational change within the sector, therefore decision-makers need to better understand where these harmful gases come from and work together along value chains to reduce them, while also coming up with innovative models that ensure future prosperity through sustainability.

Taking such proactive steps would help meet goals set out under various frameworks including those related to sustainable development goals (SDGs), such as climate action targets, etc.; hence making sure action taken at every stage aligns businesses' moves towards achieving global climate targets when considering different levels – individual, organizational, national, regional, international. Fashion can lead by example by conducting detailed studies planning, strategically taking bold actions necessary to pave the path towards a more sustainable environmentally friendly future, because without doing so we risk crossing tipping points that may render the earth uninhabitable.

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<sup>58</sup> Velenturf, A.P.M., Jensen, P.D., Purnell, P. (2022), Sustainability Reporting Practices in Fashion and Luxury, ScienceDirect (Elsevier)

## CONCLUSION

Not by any means a mere trend, the drive of luxury fashion towards sustainability is an essential development in the context of today's urgent environmental and social challenges. This thesis has guided us on a journey exploring the intersection of luxury and sustainability, demonstrating how these two elements can harmoniously merge to create a more conscientious and environmentally aware industry. In leading the way toward sustainable practices, luxury brands, such as Stella McCartney and Gucci among others, are pioneering for the entire industry which tells us that we can have both luxury and sustainability.

The increasing demand for transparency, just production as well as eco-friendly initiatives highlighted by Millennials and Generation Z's shift towards green products, is also relevant to this study. These generations are reshaping the luxury market driven by their deep concern for our planet and social justice. They seek products that are compatible with their values hence will be go-ahead to support those brands that show real commitment to sustainability. For upscale labels, this change does not pose only a problem but enables them to reinvent themselves in a manner beneficial both for society and environment.

Furthermore, linking high-end fashion with the United Nations Sustainable Development Goals highlights the significant role of the industry in making positive impacts on a global scale. By choosing sustainable materials, upholding fair labor practices with suppliers, and promoting transparency in their supply chains, these leading designer brands are actively participating in efforts to combat climate change, preserve biodiversity, and promote social equality.

In view of this shift, it is important to address issues such as greenwashing so that claims made about sustainability reflect real actions. This requires openness and third-party certification as well that build trust among consumers regarding sustainability measures undertaken by firms. Luxury brands must move beyond tokenism into embedding sustainability within business strategies if they hope to make lasting contributions.

In my opinion, lavishness should go together with responsibility when talking about luxury fashion in future. True luxury does not rely on exclusivity or indulgence, but rather on beautiful, ethical, and sustainable goods. As this industry moves toward more modernity, there are a few brands of luxury that can also lead by example; it should be noted that they do not just set the bar but rather go beyond what the customers' wants are.

In conclusion, the merging of sustainability and luxury represents a significant achievement for the fashion industry. This shift reflects a new approach to fashion based on aesthetics and ethics simultaneously making it more conscious and responsible. In embracing this new trend of thoughts, luxury brands can not only enhance their brand position but sustainably contribute towards an equitable world. The voyage to sustainable luxury is one full of innovation, cooperation as well as hope which promises a time where fashion will be a positive phenomenon instead of simply a symbol of affluence.

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