

# Collections Made with Sustainable Fabrics: Sustainable Fashion - Environmental Sensitivity

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## Abstract

The concepts of sustainability and sustainable development are among the most discussed topics of the last few decades in our world where environmental degradation is increasing.

The concept of sustainability is becoming increasingly important in the textile and apparel industry, as it is one of the largest industries in the world in terms of workforce and production and the resources of the planet we live in are alarming. At the same time, the concept of sustainability stands out in terms of improving the environmental impacts caused by the rapid increase in consumption rates in the textile and apparel sector.

The production of ecological textile products that do not harm the environment and human health is very important. In this context, in the process of sustainability, starting from the fiber, which is the first form of the fabric, and continuing to the final stage, the clothing, fashion designers have great tasks. It is also an important issue that designs are produced from sustainable materials and that the products produced are products that do not harm the environment, are timeless and can be recycled later.

Today, the concept of sustainability is discussed in every platform. At the core of this issue is the damage to the environment / ecology and the concept of sustainability as a solution to this damage. Therefore, sustainability issue in this study; Designers and brands, who make designs with sustainable fabrics that are handled over sustainable fabrics, have been examined and the concept of sustainable fashion has been emphasized.

**Keywords:** Sustainability, Ecology, Fashion design, Sustainable fabrics, Sustainable fashion

## SÜRDÜRÜLEBİLİR KUMAŞLAR İLE HAZIRLANAN KOLEKSİYONLAR: SÜRDÜRÜLEBİLİR MODA - ÇEVRE DUYARLILIĞI

### Öz

Sürdürülebilirlik ve sürdürülebilir kalkınma kavramları çevresel bozulmanın giderek arttığı dünyamızda son birkaç on yılın en çok tartışılan konuları arasında yer almaktadır.

İşgücü ve üretim açısından dünyanın en büyük endüstrilerinden biri olması ve içinde bulunduğumuz gezegenin kaynaklarının alarm vermesi sebebiyle, tekstil ve hazır giyim sektöründe sürdürülebilirlik kavramı giderek önem kazanmaktadır. Aynı zamanda tekstil ve hazır giyim sektöründeki tüketim oranlarındaki hızlı artışın neden olduğu çevresel etkilerin iyileştirilmesi açısından da sürdürülebilirlik kavramı ön plana çıkmaktadır.

Çevre ve insan sağlığına zarar vermeyen ekolojik tekstil ürünlerinin üretimi oldukça önemlidir.

Bu kapsamda, sürdürülebilirlik kumaşın ilk hali olan liften başlayıp en son aşama olan kıyafete kadar devam eden süreçte, moda tasarımcılarına büyük görevler düşmektedir. Tasarımların sürdürülebilir malzemelerden üretilmesi ve üretilen ürünlerin çevreye zarar vermeyen, zamansız daha sonra da geri dönüştürülebilen ürünler olması da önemli bir konu olarak karşımıza çıkmaktadır.

Günümüzde, her platformda sürdürülebilirlik kavramı tartışılmaktadır. Bu konunun özünde, çevreye/ ekolojiye verilen zarar ve bu zarara karşı çözüm olarakta sürdürülebilirlik kavramı yer almaktadır. Bu nedenle bu çalışmada sürdürülebilirlik konusu; sürdürülebilir kumaşlar üzerinden ele alınmış sürdürülebilir kumaşlar ile tasarımlar yapan tasarımcılar, markalar incelenmiş sürdürülebilir moda kavramı üzerinde durulmuştur.

**Anahtar Kelimeler:** Sürdürülebilirlik, Ekoloji, Moda tasarımı, Sürdürülebilir kumaşlar, Sürdürülebilir moda

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## Introduction

The textile and fashion industry is a trillion-dollar global business employing millions of people around the world. It also has significant economic power and represents a global driving force. This industry operates in a highly competitive market dominated by the presence of global brands.

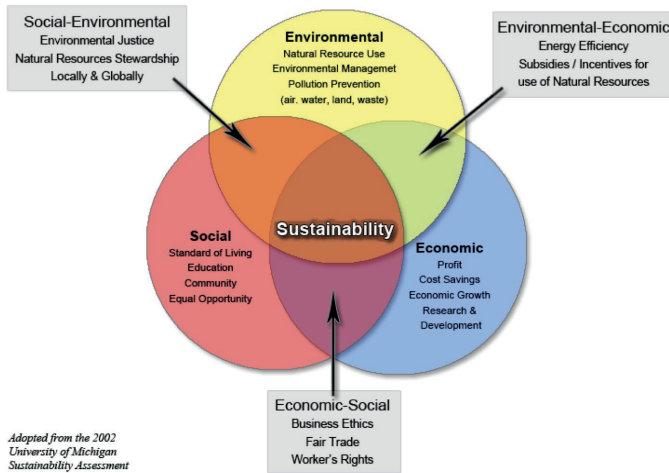
Considering the increasing population and fashion approaches in the world, it is understood that textile has a fairly wide application area.

Depending on the growth rate of the world population, a significant increase is observed in the consumption rates in the textile and ready-to-wear sector. It is of great importance to improve the environmental impacts caused by this increase. In this sense, the concept of sustainability has become an issue that needs attention in recent years. Sustainability, which is a state of balance based on working with the environment and people responsibly, and realizing our work and life order without harming the nature while doing these beneficial works, has been at the center of both scientific and institutional discussions for a long time (Gazzola et al., 2020: 5; Muhammad and Muhammad, 2010).

Sustainability is the progress of an organization by taking economic, social and environmental dynamics into consideration and taking steps that will positively affect economic development, human life and environmental balance in the interaction of these factors (Figure 1).

However, in a sector where consumption amounts are so high, harmful substances and wastes occur in amounts that will cause many environmental problems during and after production. Dyestuffs used in production can be allergenic and toxic. They also cause the release of carcinogenic gases. In addition, the use of chlorinated or fire-retardant substances, even if the availability of pesticides and heavy metals is limited, their use causes ecological problems. This situation causes poisoning, creates great dangers for ecosystems and poses a vital threat.

## *The Three Spheres of Sustainability*



*Figure 1. The three spheres of sustainability*

In today's smart manufacturing environment, the textile and apparel industry faces challenges such as productivity, sustainability and product quality and regulatory compliance that enable customers to survive as well as respond quickly to their dynamic needs (Balogun et al., 2019: 10; Fatorachian and Kazemi, 2018: 633). In addition, the industrial ecosystem, global sustainable business trends and consumer-oriented economy are putting pressure on industries to be more sustainable, innovative and agile (Denuwara, Majjala and Hakovirta, 2019).

As Papanek (1984) and Chouinard stated, (2008) the purpose of sustainability in fashion may be quite clear, but the methods to achieve sustainability are not very clear. Sustainable fashion is a complex effort involving many idealisms, but many of its elements need to be considered at a practical level.

At the same time, as Ahmad et al. stated (2020), solving fundamental sustainability problems between developed and developing countries must be realized through a collective mechanism.

Sustainable design is an approach that encourages businesses to minimize their environmental impact through product design, while increasing market advantage and innovation.

One of the most important goals of environmentally sustainable design is to integrate environmental sensitivity into every stage of the new product development process.

*Sustainable design* has been expressed in different terms in many disciplines. The term sustainable design is simply expressed as “adding the environment to the factors considered in product design”. Definitions related to this concept:

*Design for Environment:* Systematic consideration of design issues related to the impact of the product on the environment, human health and safety throughout its life cycle in developing new products or processes.

*Eco Design:* Without paying too much attention to the other criteria expected from the product, such as function, quality, cost and appearance, it is designed by considering all environmental effects throughout the entire life cycle of the product. Eco design considers environmental issues at all stages of product design and strives to have the least possible impact throughout the entire life cycle of the product.

*Eco-effective Design:* Eco-effective product design aims at systematically determining and implementing targets with the aim of improving environmental performance.

The increase in environmental and human health awareness has affected the textile and apparel sector along with all industrial branches. At this point, the production of textile products without harming the environment and human health has come to the fore. Textile designers as well as textile technologists have a great responsibility for the production of ecological textiles that do not harm the environment and human health. Textile designers are experts who add aesthetic values to textiles in terms of shape, color, pattern, fiber, fabric, texture, etc., and turn them into products that the consumer can use. For this reason, it is the designer’s choice to use methods and materials that will not harm people, living things and the environment while revealing the phenomenon of fashion in order to design the needs of consumers. If the designer can decide on what kind of fiber, fabric, texture, color, pattern-containing material to use and in what form to be produced with these materials, he also has the power to direct the taste of the society and make decisions that affect the society and the environment with another decision he will make.

The process, which starts from the fibers in which textiles are produced, goes through many different stages until they become a clothing material. In all of these processes, sustainability should be taken into consideration, and the main and auxiliary materials should be selected from sustainable, ecological and environmentally friendly products. At this stage, textile designers have great responsibilities. Most brands and fashion designers now take care to use sustainable textiles, recycle and ecological materials. This is very much nee-

ded in this period when the fashion industry is accelerating and the resources are running out.

Sustainable fashion, eco-fashion, or most generally speaking, environmentally friendly fashion is a production process that includes recyclable, high-quality products. Another aim of the sustainability approach is to ensure the supply of environmentally friendly green products with high quality, low production numbers and thus slow down the fashion industry.

Sustainability; It is a very important issue in terms of leaving a livable world to future generations by creating new resources without consuming resources for the rest of the world. The aim of this study is to contribute to the establishment of the concept of sustainability by examining the use of sustainable fabrics and the collections of designers-brands that make designs using these fabrics.

## **Materials Methods**

Since sustainability is a concept directly related to the textile and fashion industry, it should be evaluated as universal rather than local. In this study, the issue of sustainability has been addressed in terms of sustainable fabrics and sustainable fashion and evaluated in terms of collections created by fashion designers using sustainable fabrics.

The main purpose of our analysis of collections prepared with sustainable fabrics; What are sustainable fabrics, what are the benefits of using these fabrics, how can we use resources more efficiently, how do we regulate production and consumption in order to harm the environment less, is it possible to create sustainable fashion with sustainable fabrics? is to find answers to such questions. In this context, the collections of fashion designers and fashion brands, which are randomly selected due to the importance they attach to sustainability in the textile and fashion sector, constitute an example for the study.

This study is important in terms of making an assessment on what needs to be done in order to reduce the damage we give to the world by using sustainable fabrics in today's fast-moving consumption and production world and to leave renewable resources to future generations. At the same time, the study is important in terms of determining the level of contribution of fashion designers-brands to the process and offering suggestions on what can be done.

## **Results Discussion**

The textile and apparel sector is a labor-intensive, low-wage, dynamic and innovative sector focused on market demands. In the high-quality fashion

market, the industry has modern technology, designers and a high degree of flexibility. In the apparel sector, the competitive advantage of companies is to produce designs that can capture consumer demands and preferences. To survive in a competitive production environment, to work in a world where resources are limited, reduce environmental impacts, reduce costs, and firms, to perpetuate their existence by meeting customer expectations in today's "sustainability" with the expression emerges. In this context, sustainability in the textile and apparel sector is possible by ensuring sustainability at all stages of the sector's supply chain. At the same time, the whole process from obtaining the fabric, turning it into a product in the hands of the designer and using it by the consumer, are extremely important stages for sustainability.

### Sustainable Fabrics

Sustainable textiles consist of two different natural fibers: plant fibers and animal fibers. Most vegetable fibers are worn by humans (like cotton) every day, but that doesn't necessarily make them sustainable. Cotton is one of the most widely used materials for clothing in the world. This is a big problem because it has been one of the dirtiest products available. Insecticide is widely used to produce cotton, making other materials such as linen, hemp, soy, etc. more sustainable. There are also animal products that provide sustainable textile products. Among these, there are products such as wool, buff and silk obtained from animals.

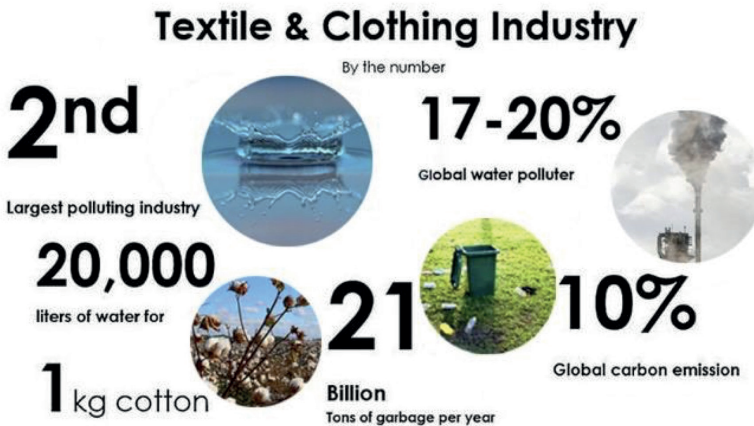


Figure 2. Textile and clothing industry (the impact on the environment)

First of all, it is necessary to make an evaluation on sustainable fabrics. What are the sustainable fabrics? When it comes to sustainable fabrics, we think of fabrics that can be used naturally, do not use chemicals in their production, and are produced without harming the environment and our resources. Sus-

tainable raw materials used in the production of sustainable fabrics can be listed as organic fibers, natural fibers and recycled fibers.

*Fabrics made from organic fibers;* It is made using both grown and harvested crops without chemicals or pesticides. To prevent contamination, only natural fertilizers are used during the process and the soils are carefully monitored. Organic materials have many benefits that make them great for making eco-fashion garments and creating your own clothes at home. It is cheaper to produce, prevents soil erosion, and has properties such as naturally strong and durable. Organic fabrics have benefits such as hypoallergenic and safe for sensitive skin, soft and breathable, environmentally friendly and sustainable.

*Natural fibers;* If a fabric is labeled naturally, it simply means that it is made from fibers from plants or animals. Because they come from natural sources, these fabrics are typically sustainable and biodegradable. This is a great advantage for the environment and reduces the increase in synthetic fast fashion being sent to landfill.

Natural fabrics have benefits such as strong and durable, hypoallergenic and antibacterial, breathable and versatile, biodegradable and sustainable. Natural fabrics that are perfect for sustainable fashion include natural silks, organic linens, and even bull denim.

*Recycled fibers;* They are fabrics made using recycled materials. Even if these materials are not initially environmentally friendly, another way to create sustainable fabrics is by recycling. It is seen that fabrics made from recycled products are becoming more and more popular. Recycled fabrics have benefits such as re-use to reduce waste, reduction of greenhouse gases, being the best sustainable fabric type, strong and durable.

The raw materials used in ecological textiles are organic cotton fiber, linen fiber, hemp fiber, bamboo fiber, soy fiber, nettle fiber, pineapple fiber.

When we briefly evaluate the sustainable fabrics;

*Organic cotton;* It is grown without chemical pesticides and fertilizers. Chemical materials, pesticides or fertilizers are not used in the production and processing of organic cotton obtained from non-genetically modified plants. Old-style agricultural methods are used to protect the quality and value of the soil. Textiles made of organic cotton need less water than traditional cotton textiles (71%) and are generally more comfortable to use. Although fabrics made of organic cotton have the same quality as fabrics produced from traditional cotton, they do not have a negative effect on nature unlike traditional cotton.

*Linen*; It is a plant-based fabric made from linen that can often be grown in rough terrain. It is produced from the fibers of the linen plant that blooms in summer. It has been used in clothes production for centuries for reasons such as being a durable, moisture-absorbing and breathable fabric, keeping it warm in winter and cool in summer. It can grow on land where food cannot be produced and it needs less resources such as water and energy during this period. Since the linen plant is resistant to moths, the use of pesticides during cultivation is also extremely low. Linen, which can be completely soluble in nature as long as it is not processed, is a sustainable fabric that can be used for many years.

*Silk*; It is produced by moths and traditional methods destroy moths and cocoons in the process. Sustainable products such as Ahimsa silk use methods that do not kill moth pupae. It is produced without the use of chemicals and hormones (Vartan, 2021: 1).

*Hemp*; The use of hemp in the textile industry is preferred because it is a fast-growing plant that requires very little water and does not require herbicides, pesticides, synthetic fertilizers or GMO seeds. Planting hemp improves soil health by replenishing vital nutrients and preventing erosion. Hemp fabrics kill bacteria, make them naturally anti-microbial, have the best heat capacity compared to any other fiber, easily combine with dyes and do not easily change color. Organic hemp, on the other hand, is the fibers in the stems of the hemp plant; It is used in yarn, fabric and weaving. Hemp has similar properties to linen. It does not need much water and pesticides. It also has the feature of fertilizing the soil it grows. From its fibers; An antibacterial fabric is produced that is breathable, absorbs moisture, keeps cool in summer and warm in winter. The fabric becomes softer as it is washed and worn, and is biodegradable. Versatile plant hemp, the production of which is subject to legal regulations, is the source of one of the most sustainable fabrics.

*Bamboo*; It is used today as a resource for shoes and corsets. Weavers blend other fabrics with processes that soften the fabric. The most used type is natural bamboo viscose. Bamboo fabrics are a preferred type of fiber because of their good moisture permeability, casting and good coloring properties. Bamboo fabric is made from fibers harvested from bamboo plants. The fabric obtained is generally soft, comfortable and absorbent. It can be used to make shirts, linens, socks, towels. Because bamboo is a very fast-growing product, it is generally considered sustainable and environmentally friendly (Martinko, 2020).

*Wool*; It is hard, wrinkle resistant, flexible. It can absorb moisture up to 30 percent of its weight. It easily holds colored dyes without using chemicals.



Wool can replace many of the water-resistant synthetics and polyester that are prominently prominent outdoors without fear of micro fiber spillage. Wool products are long-lasting. Wool textiles tend to be washed less frequently at lower temperatures with less impact on the environment.

*Pineapple leaf fibers*; It is a natural type of fiber obtained from the leaves of the pineapple plant. Since the pineapple plant is usually grown for its fruit, tons of pineapple leaves are generated as agricultural waste each year. These fibers, which have a very high cellulose ratio in their structure, are considered to be a good textile material with their superior mechanical properties and water-loving structure. Pineapple fiber alone creates a light and hard material for clothing and accessories, perfect for places with a non-tropical climate. Today it is mostly used in shoes and accessories. Any waste resulting from pineapple fiber production can be used as fertilizer. Thus, all materials can remain in their own life cycle. It has become a particularly preferred material thanks to its easily accessible and recyclable material. Pineapple leaf fiber is an important source of raw material nowadays, where sustainable production is aimed with both the evaluation of agricultural wastes and its environmentally friendly features.

*Banana silk*; Banana silk fabric is produced from 100% pure, banana tree trunk. Fibers obtained from the innermost and softest part of the body part of the tree are used. Compared to other natural, organic fibers (such as organic cotton and bamboo), it is an extremely soft, more breathable, durable, less water consuming, non-toxic fabric type. It has the same quality as normal silk fabric, moreover, it can be washed in the machine compared to the silk we know and does not require chemical dry cleaning. This natural fabric provides less water consumption during the dyeing process, as it absorbs dye much better than cotton.

*Rayon and modal*; They are man-made fabrics and are produced from cellulose. Modal is produced from cellulose from softwoods, and viscose rayon is usually bamboo (Martinko, 2020: 1). Modal is a semi-synthetic fabric known primarily for being soft, easy-care, and - more importantly - biodegradable. Because the fabric is highly breathable, it is often used in clothing designed for comfort, such as underwear, pajamas, sportswear and bedding. Modal is a type of rayon similar to viscose and lyocell, but goes through a different production process (Holmes, 2021: 1).

*Lyocell (tencel)*; Lyocell is a cellulosic fiber obtained from wood pulp (eucalyptus wood). It is an environmentally responsible species thanks to its renewable resources. It is produced from wood pulp obtained from renewable and sustainable sources (Anonymous, 2021).

## **Sustainable Fashion**

Sustainable fashion, eco fashion or ecological fashion; It emerges as a reflection of the concept of sustainability, the importance of which has been understood more recently, on the clothing industry. The aim in sustainable fashion is to not compromise on environmental and social responsibility principles while preparing products that can be sustained.

Sustainable fashion is a concept that emerged from the concept of sustainable design. In sustainable design, at every stage from the design of the product to the production process, environmental factors and carbon footprint should be calculated and efforts should be made to make the production process without harming the nature. The issue of sustainability in the fashion industry has emerged with our consumption as unsustainably. It took many years for the damage caused by the clothing industry to the world to be understood. The role of the designer in creating a sustainable society is not only to create “sustainable products” but also to create products, processes and services that encourage wide-ranging sustainable behavior.

Fashion products are consumed faster and in a shorter time than classic / basic products. However, nowadays, various innovative ways are being developed for a garment to become a more sustainable fashion product.

First of all, there are labels on the clothes that tell the story of the product. (Who designed it, how best to care without harming the environment, etc.)

A flexible approach can be designed for a more sustainable production with different patterns in clothing use. At this point, for example, disposable underwear, durable products, biodegradable products may be preferred.

Sustainable fashion should also include life cycle thinking that takes into account all stages. Such as design, manufacturing, logistics, retail, use and disposal. It is known that it is better to design life cycles rather than products.

Sustainable design includes:

There should be a use phase and end-of-life thinking. In the best case, the product is likely to have several life cycles. It should be designed how the product can be used after the first life cycle has ended. From an environmental point of view, it is best to use the product as is, the second-best option is to redesign a new product from it (through minor modifications, for example) and the third option is to recycle materials (Niinimäki, 2013: 17).

Many brands and fashion designers in our country and around the world aim to use sustainable production principles. At this point, Black (2011: 46-47)

gives the following guidelines for a sustainable fashion designer. Design for the life cycle of the entire garment (including use and disposal)

- Use ecological materials
- Use monochrome materials
- Use new technologies
- Create longer lasting products
- Design multifunctional clothing
- Reuse waste materials
- Repair and remodeling of clothing
- Recreating (eg. existing design concepts)
- Reduce (resource use and waste generation)
- Recycle
- Cycle

When companies and fashion designers that make sustainable production and designs with sustainable fabrics are examined, it will be seen that there are many brands and designers in the world who have this awareness and make their designs by adopting the principle of sustainability.

Martin Margiela first used recycled textiles in his summer collection in 1989. But distinctly, in 1990, sustainable and recyclable fashion took its place in history. Designer Lamine Kouyaté made designs of plaid, lycra and vintage clothing in Paris. In Milan, Giorgio Armani has been sensitive to the issue of sustainability by using hemp in its designs. Stella McCartney gave a completely different direction to sustainable fashion in her collection in 2002 and attracted a lot of attention. Stella McCartney, by creating organic designs without using leather and fur; She has made designs that are both animal and eco-friendly. Famous brands such as Chanel, Alexander McQueen, Marc Jacobs, Banana Republic, Levi's have also started to support green fashion in their collections.

Many Turkish fashion designers such as Hatice Gökçe, Zeynep Tosun, Mehtap Elaidi and Arzu Kaprol have emphasized the theme of sustainability in their designs in recent years. Fashion designer Hatice Gökçe has been working on Argande, a social responsibility project supported by the United Nations since 2008.

Turkish fashion designer, Mehtap Elaidi, once again proved that she is the representative of sustainable fashion in the X LENZING™ ECOVERO™ collection. Another fashion designer, Arzu Kaprol, tried to include timeless designs in her BIZ collection. Thus, the designer aimed to prevent unnecessary consumption and to create clothes that are memorable. The designer preferred fabrics produced according to sustainability principles, and in her designs, she used fabrics that are known as the silk of the future and created entirely by recycling.

Ever since Stella McCartney launched the designer brand, it has never used animal-derived textures such as leather and fur in its collections. In addition to its exemplary commitment to ethical principles when it comes to nature and living things, Stella McCartney is one of the brands that use the most advanced technology in this regard. With the innovative nature-friendly materials used in the collections, from bioengineered spider silk to leather made from cork and recycled ocean plastic, it has not compromised either its brand's commitment to sustainability or its luxury design approach (Figure 3). "The starting point is not design, the starting point is sustainability," McCartney said in an interview in 2018.



Figure 3. Stella McCartney resort 2020

When some sustainable fashion brands in the world are examined, it will be seen that they prepare environmentally friendly collections with sustainable fabrics. Brands-companies such as H&M, Spencer Phipps, Mother of Pearl, Katie Jones, Eileen Fisher, Tommy Hilfiger, Sandra Sandor, Patagonia, Maggie Marilyn (all collections consist of ethically sourced sustainable materials), Everlane, Reformation, Rag & Bone, Alternative Apparel (more than 80% of the clothes produced consist of sustainable materials.), Amour Vert, PrAna,

Vivienne Westwood (Figure 4) and designers are helping to make the fashion industry more sustainable by paying attention to many things in terms of sustainability in their collections and production.



Figure 4. Vivienne Westwood (left two images) and Reformation (right image - The Reformation 'Elsie' dress is made from organic cotton.) Sour left two images

One of the most important recent studies within the scope of sustainable fashion is the studies prepared in cooperation with Yuima Nakazato and Epson. Yuima Nakazato has produced sustainable fabric with Epson printers using entirely waste fabrics. The fabric, which took the podium at Paris Haute Couture Fashion Week 2023 spring-summer event, was produced with inkjet and dry fiber technology, and almost no water was used in this process.

Nakazato, who produces sustainable fabrics using waste fabrics collected from Africa, went to Kenya for fabric selection and collected 150 kg of waste clothing material from the 'clothing mountain' of waste clothes there. Afterwards, Epson produced more than 50 meters of refibered and nonwoven fabrics with the dry fiber process. Hitoshi Igarashi from Epson Printing Solutions Division, stating that dry fiber technology not only gives designers freedom to express their creativity, but also offers a more sustainable future to the fashion industry by reducing water usage, said, "The application of dry fiber technology to the fashion industry provides the opportunity to produce materials for new garments by recycling used fabrics." explained.

In this context, Epson has combined inkjet printing and dry fiber technologies to create stunning designs from recycled clothing. Yuima Nakazato, who uses

Epson's digital textile printing to reflect its original and creative vision on its products, has also created some of its designs thanks to a new textile production process that is more sustainable and has the potential to change the industry.



*Figure 5. Yuima Nakazato Paris Haute Couture Fashion Week spring - summer 2023*

This brand-company and designers, who pay attention to both material (organic natural fabrics, recycled cotton, sustainable materials, etc.) and production (who produces clothes, where materials are received and follow a policy as transparent as possible, providing information to their customers on issues such as the supply chain) at the point of producing modern and wearable parts with conscious design, act very sensitive in terms of sustainability.

When we look in general, it will be seen that most of the designers aim to avoid the disposable understanding by choosing the ones who evaluate old fabrics in collections, behave diligently in the fabrics they choose, work with smaller production teams, and whose materials are convertible and require less maintenance. At the same time, it will be seen that they are trying to reduce their carbon footprint by making more use of technology and that they now attach more importance to the concept of sustainability.

## **Conclusions**

In today's world where globalization continues at full speed, the importance of creating sustainability awareness and awareness is increasing day by day.

Sustainability concerns have created a new agenda for economic development discussions, and over time have caused these discussions to sit on the axis of sustainable development.

Sustainability introduces a concept that requires changes in the way of thin-

king, without reducing the quality of life. The essence of this change is to avoid being a consumer society and aiming for environmental management, social responsibilities and economic solutions that are in solidarity from a universal perspective.

In this context, textile and fashion play a remarkable role in terms of sustainability as one of the most polluting industries in the world. Every stage of a garment's life, from obtaining the fiber to its disposal (called cradle to grave), threatens our planet and its resources, as well as social living standards.

At this point, all stakeholders in the textile and fashion industry have serious responsibilities. Fashion designers are among those who are one of these stakeholders in the sector and have the most important role. Designers, the recycling industry and consumers must come together and work together to achieve sustainability conditions at every stage of the supply chain. Thus, it can continue to produce fashion without harming the environment, and at the same time, people and sectors will continue to be productive and contribute to the economy.

Creating designs created by following a production ecosystem that is sensitive to nature and the environment is the most fundamental element in this process. At this point, less and more qualified fashion production and purchasing may be the basis.

However, it is still not enough for most fashion companies to produce fashion clothes in a sustainable production system and develop them with sustainable and recyclable materials. The use of natural and new biodegradable fibers should be encouraged. On the other hand, possible limitations in the use of agricultural land in the near future should be kept in mind due to the increasing world population and food shortage.

Fashion companies are encouraged to provide more detailed and transparent information about sustainable fashion production that is useful for sustainable fashion consumption and also encourages consumers' purchasing decision. The availability of relevant information is an effective way to educate fashion consumers and improve their awareness of sustainability. These efforts should not be limited to fashion companies, all suppliers and consumers in the textile and apparel supply chain, as well as manufacturers and retailers, and should demonstrate their commitment.

Each piece of clothing has an impact on the environment, but the real question is how much impact does it have?

Improving production processes using lower amounts of water, pesticides, ha-

zardous chemicals or lower greenhouse gas emissions, etc. is as important as the measures taken by retailers and consumers to select such textiles. However, consumer behavior is equally important in how they care and dispose of clothing and other textiles. For example, choosing appropriate washing temperatures, taking the right steps to significantly extend their lifespan, and encourage the recycling of garments at the end of their service life. These key issues are areas where retailers can have a high degree of influence.

One of the ways to create sustainable fashion is for fashion designers to create collections with sustainable fabrics in their collections. In this way, it is possible to contribute to the process by influencing the purchasing behavior of consumers and creating an awareness. At the same time, designers must adopt a production process that is sensitive to nature and human resources, a design and production process managed with durability and of course ethical values.

As one of the main materials used in fashion design, fabric constitutes the most important part of the collection. In this context, at the point of creating sustainable fashion, it is an extremely important and necessary step to prepare the collections of fashion designers, which affect the whole world, with sustainable fabrics.

As a result, considering the concept of sustainability in terms of textile and fashion design; It is necessary to mention the different problems that we encounter in various stages of design, production and consumption. The environmental effects of textile products are not limited to production environments. How they are used, how they are re-evaluated and how they are eliminated are of the same importance in terms of their environmental impact. Therefore, success in reducing negative impacts requires the responsible stance of all actors in this field. At the same time, it should not be forgotten that creating a sustainable world and transferring resources to future generations without consuming resources is an important responsibility, and it is a subject that is under the responsibility of fashion designers as well as all stakeholders of the sector.



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