

# A 2.2. Desk Research



Analysis of good sustainability practices in the fashion industry and green measures undertaken by fashion businesses



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# ANALYSIS OF GOOD SUSTAINABILITY PRACTICES & GREEN BUSINESS MEASURES IN THE FASHION INDUSTRY

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## INTRODUCTION

### 1.1. Fashion, textile, footwear and accessory industry background, leading companies, situation

Manufacture of textiles is one of the oldest human skills and its origins can be found in the ancient times. Textiles from the Latin word “textilis”, meaning “woven”, is material made from various longitudinal filaments of different construction. A wide range of natural and man-made fibres, recycled fibres, various types of threads and wide treatment possibilities give rise to an almost unlimited range of fabrics made by different methods such as weaving, knitting, felting or tufting generating a large variety of products.

Manufacturing process of textiles is a sum of technological operations and processes, in which products are gradually formed and is based on the conversion of fibres into yarn and yarn into fabric to a wide range of products. All textiles are made up of fibres of different origin either mechanically twisted together to create yarn or in the case of Man-Made fibres often, extruded through a spinneret to create a filament. This process is called spinning and is fundamental process in textile manufacturing. Yarn is subsequently either woven in which two sets of yarns are interlaced at right angles to form a fabric or knitted by forming symmetric loops. Yarn can also be braided into ropes/net or embroidered into laces. Beside referenced ways, fabric can be created through production of non-woven fabrics directly from either fibres or filaments. Pretreatment processes, as well as dyeing and printing can be done in several processing steps either on yarns or fabrics. Pre-treatment processes prepare textiles for subsequent dyeing, printing or finishing. Finishing or coating comprises a large variety of processes meant to give textiles special functional properties such as flame retardance, water resistance, antistatic or antibacterial to the finished fabric and serving to improve properties of textile materials. This also indicates the vast diversity of textiles.

#### ◆ The Textile and Apparel Industry in Europe

The predominantly SME-based European textile and clothing industry employs 1.7 million people in 171,000 companies of which 99% are SMEs, generating a turnover of EUR 178 billion. The EU is the world’s second biggest exporter of textiles and clothing with 23% and 28% of world sales respectively in 2018. The textile and fashion products made in the EU stand out for respect of environment, consumer safety and labour rights. Every step in the production chain, from fibre-making through fabric to ready-to-use product, is present within the Europe, making the sector a powerful industry. EU external trade accounts for almost €50 billion of Textile and Clothing products exported and almost €115 billion imported.



Top EU producers of textiles and fashion goods producing fibres, fabrics, clothes, home and technical textiles, used in various sectors are Italy, Germany, France, Spain, Portugal, UK, Belgium, Poland, Romania and Austria. Europe hosts global decision makers/influencers in the global world of textiles.

Textiles are the fabric of everyday life - in clothes and furniture, medical and protective equipment, buildings and vehicles. However, urgent action is needed as their impact on the environment continues to grow. EU consumption of textiles has, on average, the fourth highest impact on the environment and climate change, after food, housing and mobility. It is also the third highest area of consumption for water and land use, and fifth highest for the use of primary raw materials and greenhouse gas emissions.

## 2. OVERVIEW OF THE ENVIRONMENTAL IMPACT OF THE F&T INDUSTRY

The Earth's ecosystem is constantly being damaged when sustainable choices are not made. People are used to immediate gratification and want the cheapest and quickest option, whether it is food, clothing or energy. If people continue to use resources in the same way, they are likely to run out. This will lead to a lack of fossil fuels, to the extinction of large numbers of animals and to an irreparable deterioration of the Earth's atmosphere. Our planet may become uninhabitable for future generations - physically, socially and economically. This impact is becoming increasingly visible through extreme weather, the extinction of wildlife and the export of workers.

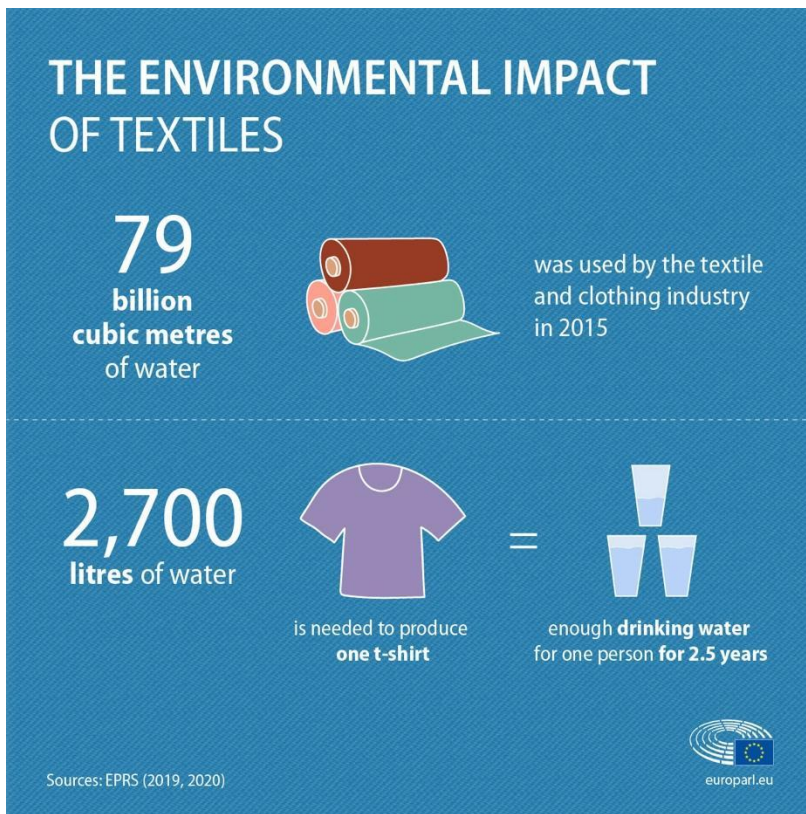
The textiles sector is one of the least sustainable industries worldwide. It is resource-intensive and wasteful. It is among the top three pressures on water and land use and the top five for raw materials use and greenhouse gas emissions worldwide. European consumption of textiles has the **fourth highest impact on the environment and climate change, after food, housing and mobility.**

Between 2000 and 2015 textiles production around the world doubled. Now the consumption of clothing and footwear is expected to more than double by 2030. Behind this dramatic rise is fast fashion - a term used to describe the mass production of clothing replicating recent high-fashion trends. It is a highly profitable business model that can quickly turn the latest high-fashion designs into low-cost styles for consumers. These garments are designed to be disposable, so fast fashion encourages unnecessary over-consumption. This leads to excessive waste - much of which cannot be recycled. The result is a massive impact on our environment. The effects are very real and this excessive use of resources is fuelling climate change, biodiversity loss and pollution. **Clothes, footwear and household textiles are responsible for water pollution, greenhouse gas emissions and landfill.**

Fast fashion - the constant provision of new styles at very low prices - has led to a big increase in the quantity of clothes produced and thrown away. To tackle the impact on the environment, the EU wants to speed up the move towards a circular economy.



## ◆ Water use



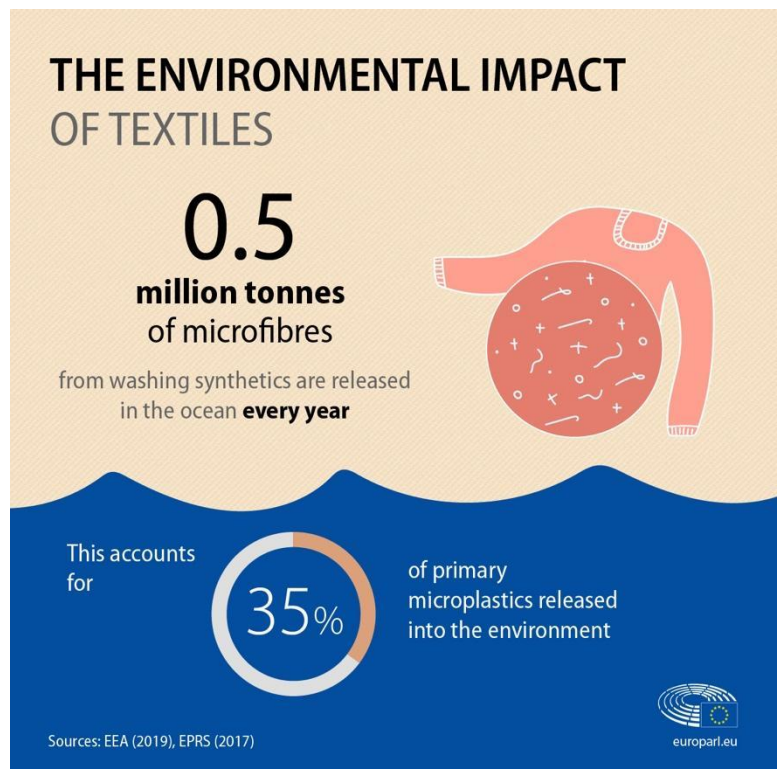
It takes a lot of water to produce textile, plus land to grow cotton and other fibres. It is estimated that the global textile and clothing industry used 79 billion cubic metres of water in 2015, while the needs of the EU's whole economy amounted to 266 billion cubic metres in 2017. To make a single cotton t-shirt, 2,700 litres of fresh water are required according to estimates, enough to meet one person's drinking needs for 2.5 years.

## ◆ Textile waste in landfills

The way people get rid of unwanted clothes has also changed, with items being thrown away rather than donated.

Since 1996, the amount of clothes bought in the EU per person has increased by 40% following a sharp fall in prices, which has reduced the life span of clothing. Europeans use nearly 26 kilos of textiles and discard about 11 kilos of them every year. Used clothes can be exported outside the EU, but are mostly (87%) incinerated or landfilled.

Globally less than 1% of clothes are recycled as clothing, partly due to inadequate technology.





## ◆ Water pollution

Textile production is estimated to be responsible for about 20% of global clean water pollution from dyeing and finishing products.

Washing synthetics releases an estimated 0.5 million tonnes of microfibres into the ocean a year.

Laundering synthetic clothes accounts for 35% of primary microplastics released into the environment. A single laundry load of polyester clothes can discharge 700,000 microplastic fibres that can end up in the food chain.

The main environmental issues arising from the activities in the textile industry regard primarily emissions to water and air and energy consumption. Among these, water is the most important concern. The textile industry uses water as the principal medium for removing impurities, applying dyes and finishing agents, and for the generation of steam. Losses to the product are negligible; therefore, apart from a minor amount of water which is evaporated during drying, the bulk is discharged as aqueous effluent. The main concern is therefore about the amount of water discharged and the chemical load it carries.

A large percentage of the total emission load from textile industry activities is attributable to substances that are already on the raw material before it enters the finishing process sequence. Typically, these are:

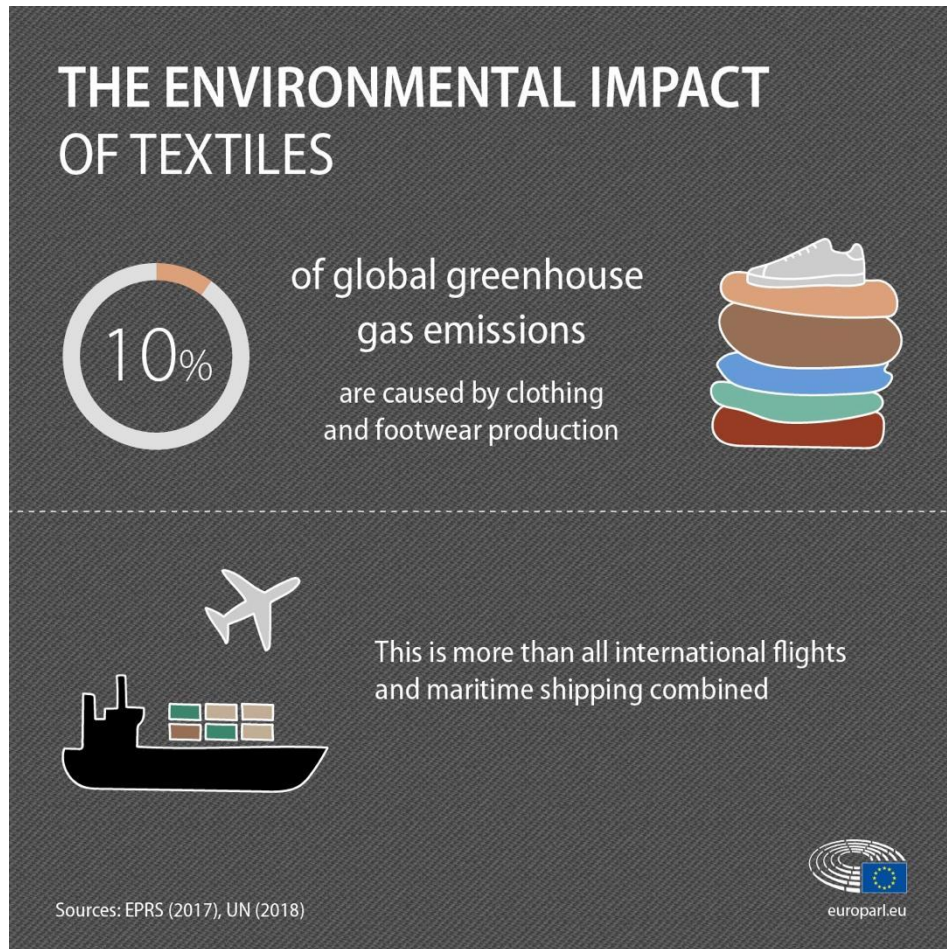
- sizing agents;
- preparation agents;
- natural fibre impurities and associated material.

Sizing agents are used to assist the weaving process. They are removed from the woven fabric before the finishing process, thus producing high organic loads in the water. Preparation agents and spinning oils are applied to fibres in various steps of the process, from the manufacture of the fibre itself (for synthetic fibres only) to the formation of the yarn. These organic substances are removed during pretreatment at the finishing mill either through wet processing (washing) or through dry processing (heat-setting). In the former they contribute to the increase of the organic load of the final water effluent and in the latter they become airborne. All natural fibres contain a percentage of impurities and associated material. Associated materials are an essential part of natural fibres (e.g. grease for wool, pectin and hemicellulose for cotton, lignin for flax and sericine for silk). Impurities are metals, minerals and pesticides. All these substances have to be removed from the fibre before it can undergo finishing processes. They therefore also have the potential for considerable environmental impact. The input of chemicals and auxiliaries added at the finishing mills can be up to 1 kg per kg of processed textiles, which appears to be high. The ranges of these substances are very extensive, for example TEGEWA lists more than 7 000 auxiliaries. However, in a typical finishing mill, 80 % of the annual consumption is covered by only 20 % of the product types used.

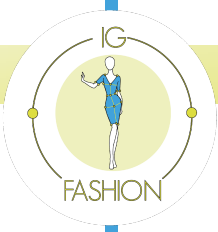


## ◆ Greenhouse gas emissions

It is estimated that the fashion industry is responsible for 10% of global carbon emissions – more than [international flights and maritime shipping](#) combined. [According to the European Environment Agency](#), textile purchases in the EU in 2017 generated about 654 kg of CO2 emissions per person.







### 3. OVERVIEW OF EU REGULATIONS AND POLICIES

While the industry is working on making circularity a reality, the EU is pioneering policies for sustainable goods and production.

The European Commission adopted the new circular economy action plan (CEAP) in March 2020. It is one of the main building blocks of the European Green Deal, Europe's new agenda for sustainable growth. The EU's transition to a circular economy will reduce pressure on natural resources and will create sustainable growth and jobs. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss. The Commission developed a package of [European Green Deal](#) proposals to **make sustainable products the norm in the EU**, boost circular business models and empower consumers for the green transition. As announced in the [Circular Economy Action Plan](#), the Commission is proposing new rules to make **almost all physical goods** on the EU market **more friendly to the environment, circular, and energy efficient** throughout their **whole lifecycle** from the design phase through to daily use, repurposing and end-of-life. The new action plan announces initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible. It introduces legislative and non-legislative measures targeting areas where action at the EU level brings real added value.

#### ◆ Objectives

Measures under the action plan aim to:

- make sustainable products the norm in the EU
- empower consumers and public buyers
- focus on the sectors that use most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients
- ensure less waste
- make circularity work for people, regions and cities
- lead global efforts on circular economy

The purpose of the [EU Strategy for Sustainable and Circular Textiles](#) from 30 March 2022 is to **make textiles more durable, repairable, reusable and recyclable**, to tackle fast fashion, textile waste and the destruction of unsold textiles, and ensure their production takes place in full respect of social rights.

The package includes a proposal on new rules to **empower consumers in the green transition** so that consumers are better informed about the environmental sustainability of products and better protected against greenwashing.



The Commission has developed the tools to move to a truly circular economy in the EU: decoupled from energy- and resource dependencies, more resilient to external shocks and respectful of nature and people's health. The proposals build on the success of EU's existing Ecodesign rules, which have brought remarkable reductions in EU's energy consumption and significant savings to consumers. In 2021 alone, existing ecodesign requirements saved consumers €120 billion. The rules have also led to a 10% lower annual energy consumption by the products in scope. By 2030, the new framework can lead to 132 mtoe of primary energy savings, which corresponds roughly to 150 bcm of natural gas, almost equivalent to EU's import of Russian gas.

## **Making sustainable products the norm**

The [proposal for a Regulation on Ecodesign for Sustainable Products](#) addresses product design, which determines up to 80% of a product's lifecycle environmental impact. It sets new requirements to make products more durable, reliable, reusable, upgradable, repairable, easier to maintain, refurbish and recycle, and energy and resource efficient. In addition, product-specific information requirements will ensure consumers know the environmental impacts of their purchases. All regulated products will have Digital Product Passports. This will make it easier to repair or recycle products and facilitate tracking substances of concern along the supply chain. Labelling can be introduced as well. The proposal also contains measures to end the destruction of unsold consumer goods, as well as expand green public procurement and provide incentives for sustainable products.

The Strategy extends the existing Ecodesign framework in two ways: first, to cover the broadest possible range of products; and second, to broaden the scope of the requirements with which products are to comply. Setting criteria not only for energy efficiency, but also for circularity and an overall reduction of the environmental and climate footprint of products will lead to more energy and resource independence and less pollution. It will strengthen the Single Market, avoiding diverging legislation in each Member State, and create economic opportunities for innovation and job creation, notably in remanufacturing, maintenance, recycling and repair. The proposal will set a framework and a process through which the Commission, working in close cooperation with all those concerned, will progressively set out requirements for each product or group of products.

Together with this proposal, the Commission has also adopted an [Ecodesign and Energy Labelling Working Plan 2022-2024](#) to cover new energy-related products, update and increase the ambition for products that are already regulated, as a transitional measure until the new regulation enters into force.



## ◆ Sustainable and circular textiles

The [EU Strategy for Sustainable and Circular Textiles](#) sets out the vision and concrete actions to ensure that by 2030 textile products placed on the EU market are long-lived and recyclable, made as much as possible of recycled fibres, free of hazardous substances and produced in respect of social rights and the environment. Consumers will benefit longer from high quality textiles, fast fashion should be out of fashion, and economically profitable re-use and repair services should be widely available. In a competitive, resilient and innovative textiles sector, producers have to take responsibility for their products along the value chain, including when they become waste. In this way, the circular textiles ecosystem will be thriving, and be driven by sufficient capacities for innovative fibre-to-fibre recycling, while the incineration and landfilling of textiles has to be reduced to the minimum.

The specific measures will include ecodesign requirements for textiles, clearer information, a Digital Product Passport and a mandatory EU extended producer responsibility scheme. It also foresees measures to tackle the unintentional release of microplastics from textiles, ensure the accuracy of green claims, and boost circular business models, including reuse and repair services. To address fast fashion, the Strategy also calls on companies to reduce the number of collections per year, take responsibility and act to minimise their carbon and environmental footprints, and on Member States to adopt favourable taxation measures for the reuse and repair sector. The Commission will promote the shift also with awareness-raising activities.

The Strategy also aims to provide support to and accompany the textiles ecosystem throughout its transformative journey. Therefore, the Commission co-create a transition pathway for the textiles ecosystem. This is an essential collaborative tool to help the ecosystem to recover from negative impacts of the Covid-19 pandemic which have been affecting companies in their daily operations for the last three years. It will also strengthen their capacities to withstand both fierce global competition and future shocks for their long-term survival. All the actors are encouraged to take active part in the co-creation process through their commitments on circularity and circular business models, actions to strengthen sustainable competitiveness, digitalisation and resilience, and identification of specific investments needed for the twin transition.

By looking at the entire lifecycle of textile products and proposing actions to change how we produce and consume textiles, the Strategy presents a new approach, addressing these issues in a harmonised manner.



## ◆ Objectives of the EU strategy for sustainable and circular textiles

The strategy aims to create a greener, more competitive sector that is more resistant to global shocks. The Commission's 2030 Vision for Textiles is that:

- all textile products placed on the EU market are durable, repairable and recyclable, to a great extent made of recycled fibres, free of hazardous substances, produced in respect of social rights and the environment
- “fast fashion is out of fashion” and consumers benefit longer from high quality affordable textiles
- profitable re-use and repair services widely available
- the textiles sector is competitive, resilient and innovative with producers taking responsibility for their products along the value chain with sufficient capacities for recycling and minimal incineration and landfilling

### Key actions in the Textiles Strategy

- Set design requirements for textiles to make them last longer, easier to repair and recycle, as well as requirements on minimum recycled content Introduce clearer information and a Digital Product Passport
- Tackle greenwashing to empower consumers and raise awareness about sustainable fashion
- Reverse overproduction and overconsumption, and discourage the destruction of unsold or returned textiles
- Propose mandatory Extended Producer Responsibility for textiles with ecomodulation of fees
- Address the unintentional release of microplastics from synthetic textiles
- Restrict the export of textile waste and promote sustainable textiles globally
- Incentivise circular business models, including reuse and repair sectors
- Encourage companies and Member States to support the objectives of the Strategy

### The vision for 2030

The new approach looks at the entire lifecycle of textiles and proposes actions to change the way we produce and consume textiles. It means that all textile products must be durable, repairable and recyclable. Profitable re-use and repair services will be widely available, and producers will take responsibility for their products along the supply chain.

### Making textiles more long-lasting through design requirements

80% of a product's environment footprint throughout its life cycle is determined when it is designed. This is why the EU will set new design requirements for textiles to make



em last longer, easier to repair and recycle. There will also be new requirements on minimum recycled content in textiles.

Europeans will also be better protected through clearer information on textiles and a Digital Product Passport based on key environmental factors.

## Improving the circularity of the sector and reducing waste

These garments are designed to be disposable, so fast fashion encourages unnecessary over-consumption. This leads to excessive waste – much of which cannot be recycled. In factories, worldwide between 25 and 40% of all fabric used is either leftover or becomes waste. The EU aims to stop overproduction and overconsumption of clothing. New measures will also discourage the destruction of unsold or returned textiles and restrict the export of textile waste.

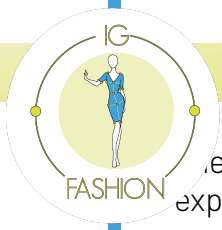


The EU already has comprehensive laws on waste – and the main law (the Waste Framework Directive) will be reviewed in 2023. The focus will be on textiles and food waste. The EU is looking carefully at new ways to make producers responsible for textiles they sell after the sale. This is a very effective tool because it encourages them to make items that last longer, and even more importantly, are easier to recycle when they reach the end of their useful life.

## Tackling the microplastics challenge

Every time we wash our clothes made from polyester, rayon and nylon, they shed microplastics. Up to 35 % of all microplastics can be traced back to synthetic textiles! These tiny plastic particles eventually end up in the sea where they are consumed by plankton and then the fish we eat, ending up inside our bodies. It is estimated that about half a million tonnes of microplastics come from our synthetic clothes. That is the equivalent of about 50 billion plastic bottles.





The EU is funding a lot of research on microplastics. The risks they pose need to be explored further. But it's clear that microplastics released from textiles have a measurable impact on the environment. So the EU is developing concrete ways to address this unintentional release of microplastics.

## Protecting people from greenwashing

Today it is difficult for people to make sense of the many labels on the environmental performance of products and companies. In the EU, there are currently more than 200 environmental labels in use! Some of these are not reliable. They can be misleading, and companies can give a false impression of their environmental impacts or benefits - a practice known as greenwashing.



So, it is important that people are empowered to make sustainable choices. To do this, the EU proposed to update EU consumer rules. Europeans will be better informed about the environmental sustainability of products and better protected against false or misleading green claims. The rules will ban 'greenwashing' and other practices that mislead people about how long a product will last. General environmental claims, such as "green", "eco-friendly", "good for the environment" will only be allowed if there is solid evidence to support the claim.

## Respecting human rights in global textile value chains

The EU recently proposed new rules on Corporate Sustainability Due Diligence. The aim is to shift all major sectors towards greener, fairer, and more responsible corporate behaviour. It requires all companies within its scope to address negative impacts on human rights and the environment in their own operations and across their value chains. This is in line with internationally recognised human rights and labour standards, and of course international environmental commitments.





The EU will be offering guidance, tools and funding to help companies adjust to the new rules. It will be in their interest to comply. That way they build trust, they avoid damage to the environment and their own reputation, and they'll find it easier to access funds.

## 4. IMPLEMENTATION OF LEGISLATION AND ASSOCIATED IMPACTS IN THE PARTNER COUNTRIES

### ◆ Bulgaria

Bulgaria has a long tradition in garment manufacturing and the employees in the sector are trained to work with modern machinery. The textile industry is one of the most competitive in the country, thanks to world-class quality, modern sewing technology and low production costs. These are the reasons why more and more countries trust Bulgaria for the production of textile garments. Bulgaria is a hot spot for the production of all kinds of garments for men, women and children. Clothing and textile manufacturers in Bulgaria produce a wide range from outerwear and underwear to sportswear and swimwear. The industry employs 80,000 workers and accounts for 4.5 billion exports or 11% of Bulgaria's exports.

In February 2021 the Bulgarian National Assembly adopted amendments to the Waste Management Act to comply with a European directive. Targets are introduced to prepare for reuse and recycle at least up to 65% of municipal waste and to reduce to 10% landfilled municipal waste by the end of 2035 at the latest. In addition, the new provisions provide a legal basis for the introduction of extended liability for textile products as a way of meeting the requirement for separate collection of textile waste. According to European directives, Member States should also introduce separate collection of textile waste by 2025.

Municipalities will now be obliged to collect textile waste and shoes separately, in addition to paper, metal, glass and plastic, as was the case until now. The work of textile waste recovery organisations is regulated in Art. 84a.

The amendments to the Act provide for the Executive Environmental Agency to keep public registers of persons placing footwear and textiles on the market, as well as packaged goods.

The Waste Management Act in Bulgaria introduces the concept of "Extended Producer Responsibility" - an environmental principle applied as a set of measures to reduce the overall impact on the environment of a product, the use of which generates widespread waste. This principle introduces obligations and responsibilities for producers of a product throughout its life cycle, take-back, reuse, recycling and recovery as a result of the use of the product. The 'Extended Producer Responsibility' implementation scheme is a set of measures taken to ensure that producers of products are financially



responsible, or financially and operationally accountable, for the management of waste as a stage in the life cycle of the product after it becomes waste.

Extended producer responsibility has been applied for a number of years to the management of material streams – plastic, paper, metals, glass, etc. According to changes in the Waste Management Act from February 2021, it is also being introduced for textile items. All producers and importers of textiles and footwear need to join a collective system represented by a footwear and textile waste recovery organisation, or carry out their obligations independently, after obtaining an individual permit from the Ministry of Environment and Water.

Municipalities with less than 10,000 inhabitants can conclude contracts with different organisations for separate collection of textile and footwear waste. Containers for separate collection of textile waste shall be placed near the disposal sites for municipal waste. Each container is labelled with information on what waste should be disposed of in them.



Each container is labelled with information on what waste should be disposed of in them.

"Textile Organisation" AD is a not-for-profit company established to work towards the effective management of textile waste, in accordance with the "Waste Management Act" and the principle of "extended producer responsibility".

"Textile Organization" carries out the following activities for the construction and maintenance of municipal systems for separate collection of textile and footwear waste:

- Provision and placement of containers for separate collection of textile waste at locations pre-determined by the mayors of the municipalities;
- Ensuring regular removal of waste collected in the containers according to a schedule agreed with the mayors of the municipalities;
- Ensuring the processing of collected textile and footwear waste and applying subsequent treatment operations - sorting, preparation for reuse, recycling, energy recovery.

"Textile Recycling AD" is a footwear and textile waste (FWT) recovery organisation within the meaning of the Waste Management Act. The company has commenced activities in connection with the process of obtaining a permit under Section 81 of the Waste Management Act (WMA).





'Textile recycling' ensures that the targets for collection, recovery and recycling of COTW are met and that waste going to landfill is reduced by maintaining effective systems for managing footwear and textile waste. This contributes to a cleaner environment and facilitates the operations of our members.

Membership of Textile Recycling AD enables businesses to meet their obligations for the separate collection and recovery, including preparation for re-use and recycling, of footwear and textile waste sold on the market.

The separate collection system is aimed at households, administrative, social and public buildings, commercial establishments, recreational and tourism facilities in each of the municipalities in the country.

A large number of companies are also moving towards so-called "clean industry". There are already a number of approaches that businesses are using with exactly these aims in mind. Environmental legislation is becoming increasingly stringent and this is one of the factors that is provoking industry to become cleaner.

Textile waste management has a crucial role to play in implementing the European Green Pact and achieving Bulgaria's circular economy goals. From the point of view of the European waste hierarchy, reuse is the best way to recover waste. Appreciating the important role of the sector, the European Institute Foundation and the Bulgarian Industrial Association, in partnership and with the assistance of the Association of

Second-hand Clothing Converters and Traders, **are focusing their joint efforts on introducing a sustainable and effective policy in the collection and recovery of textile waste.**

At the National Online Conference "The Green Deal for Textiles: Citizens and Business Partners in Textile and Footwear Waste Management - Where to go after COVID" with the participation of stakeholders, current practices in EU and non-EU countries were presented. The project team's proposals for the establishment of a working separate collection and recovery system for textile and footwear waste were also presented and discussed.

The stakeholders involved supported the creation of a national recovery organisation to represent textile and footwear marketers in the implementation of separate collection and recovery obligations.

A review of practices in the sector shows that a number of municipalities currently collect textile waste separately at the expense of the municipal waste charge or second-hand clothing businesses have containers.

The project "[Citizens and Business - Partners in Textile and Footwear Waste Management](#)" was launched to increase the participation and engagement of citizens and businesses in the processes of formulating policy changes for the management of mass wastes.



## ◆ Greece

The Clothing Retailing industry in Greece has a revenue of €3.4bn in 2023 (with a 5.0% per year on average between 2018 and 2023) and employs 53,980 people (IBIS). There are more than 500 apparel manufacturing companies in Greece, with 86 of them based on Athens, 88 on Thessaloniki, and the rest being spread across Greece's major cities and towns. These companies produce all kinds of clothing products from luxury apparel to low-cost clothing products.

The principle of sustainability has been (re)introduced into the Greek fashion industry following these facts:

- In 2010 (the year when Greece entered IMF), the practice of garment reuse – a practice familiar to consumption reality in Greece until the early 1970s – started to increase again (52%)<sup>1</sup>.
- The lockdown, following the COVID-19 pandemic, forced many brands to go online and promoted the localized supply; in other words, many brands, especially SMEs, started to promote their products through online shops and base their production upon local supply chains<sup>2</sup>.
- The Slow Fashion Movement has inspired consumers to incorporate the principles of fairness and sustainability into their purchase behavior, following the global trend which gained popularity in Greece especially during the lockdown period<sup>3</sup>.
- Since 2020, the Hellenic Clothing Industry Association (HCIA) has been promoting the concept of sustainability and circular garment industry<sup>4</sup>.
- The ongoing energy crisis in Europe brought once more the urgent need for sectoral changes towards sustainability, as pointed out by the president of the Union of Greek Textile Industries (March 2022).

Yet, there is no specific regulation for promoting sustainability in the fashion industry in Greece. There are ISO specifications (e.g. ISO 9001: implemented by textile manufacturers to lower operation costs and control output quality, while maintaining customer satisfaction and ISO 14001: Environment Management System) that are also deployed by the textile and apparel industries as well as a long list of different eco-labels both at an EU and international level, some of which especially apply to the textile industry (Eco-Label, Standard 100 by OEKO-TEX). In Greece, in the context of the Corporate Social Responsibility, companies in the industry of apparel and fashion have voluntarily adopted environmentally and ethically responsible practices of design and production. The 5.2 subsection describes some of such practices.

### Practices and technologies (re)entering the clothing and apparel industry in Greece

Following this shift to sustainability, an interest towards alternative practices and technologies has been expressed in the Greek clothing and apparel industry. Some of these are innovative and utilise brand new technology while others revive traditional trends and techniques.

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<sup>1</sup> <https://openjournals.ugent.be/autex/article/id/63729/download/pdf/>

<sup>2</sup> [https://esee.gr/wp-content/uploads/2021/06/4o\\_Webinar.pdf](https://esee.gr/wp-content/uploads/2021/06/4o_Webinar.pdf)

<sup>3</sup> As above

<sup>4</sup> <https://www.hcia.eu/en>



The technique of 3d knitting and 3d design has appeared in the Greek clothing industry. The practice of 3D-knitting requires less raw material, produces less waste, and opens the door to an inventory-less future. Nevertheless, it requires not only special technical equipment and software but also dedicated training, thus it remains restricted to few companies, organisations, and collections (e.g. Athens Knit Lab). 3d design is another technique that has been adopted by few Greek designers and promotes environmentally friendly solutions by replacing physical samples – which traditionally would be thrown away in landfills – with true-to-life digital twins. Again, such initiatives remain at individual level due to the required equipment and expertise (e.g. collection by Vaia Gkerlioti).

The return to localisation and short supply chains revived the old practice of exclusive use of locally produced raw materials, such as silk and cotton. Regarding cotton, it should be highlighted that Greece is the main cotton grower, with 80% of European cotton area<sup>5</sup>. However, the area of organically produced cotton – main element in the design and production of environmentally friendly and/or vegan clothing – appears to be very small, mainly due to the limited financial resources and the absence of motifs of the Greek government as well as the lack of training programmes for producers in terms of available techniques. Furthermore, the higher cost for the organic cotton compared to non-organic one (20-50 cent / item), shall be absorbed by either the producer or the consumer, due to the absence of financial support by the state, making organic cotton unattractive to many small clothing manufacturers. Finally, the technique of knitting also returned, ensuring sustainable solutions, as knit can be reused mainly because of its elastic and wrinkle-resistant nature.

## ◆ Italy

Precisely because of its importance in the national economy and its image of excellence at international level, the Italian fashion sector is subject to special attention regarding the sustainability of production processes. Textile production has the heaviest environmental impact. In fact, wet processes such as dyeing, printing and finishing need large amounts of water and chemicals.

The sustainability plans of fashion companies are based on main strategic drivers, such as climate actions, circular economy (use of recycled materials in the production of the final product and collection of used goods), product traceability (from raw materials, to manufacturing processes in production and supply chains, up to the final product through blockchain technology), attention to social and environmental standards throughout the supply chain, enhancement of diversity and support to local communities through social, cultural and artistic projects.

To pursue their sustainability objectives, fashion companies have devised specific tools. The most relevant one is the "Italian fashion Manifesto of sustainability" promoted by the National Chamber of Italian Fashion, developed in 2012 and adopted by many companies. The [Manifesto](#) defines concrete actions that companies in the fashion

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<sup>5</sup> [https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/cotton\\_en](https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/cotton_en)



Factor can take to reduce their environmental and social impact. Here are the main recommendations:

- design of quality products that last a long time and minimize environmental impacts;
- choice of raw materials with high environmental and social value;
- processing of raw materials to reduce environmental and social impacts;
- sustainable distribution, marketing and sales all up to the final consumers;
- business ethics aimed to integrate universal values into the brand;
- transparency in communicating sustainable commitment to stakeholders;
- education aimed to promote ethics and sustainability among consumers.

The National Chamber of Italian Fashion has also drafted the "Guidelines on eco-toxicological requirements for articles of clothing, leather goods, footwear and accessories" and the "Guidelines on the eco-toxicological requirements for chemical mixtures and industrial discharges". Both documents are based on the REACH Regulation 1907/2006 - Registration, Evaluation, Authorization and Restriction of Chemicals - as well as on relevant international regulations and technical standards.

However, the latest data on the implementation of sustainability measures in the Made in Italy fashion sector are not highly encouraging. At the end of November 2022, the first Forum on fashion sustainability was held in Venice. A study carried out by The European House Ambrosetti on the data collected through the ESG Assessment on the Italian fashion supply chain was presented there. The study was conducted on 167 companies in the Italian fashion supply chain and found out that company size highly affects sustainability management. The data point out that, as the size increases, the implementation of tools for sustainability management increases as well. As to reporting and measuring emissions, the impact of size is even more extreme, while for the assessment of human rights respected by suppliers, there are no major differences: less than 50% of the sample puts it into practice.

Almost 80% of the players in the supply chain admitted to receiving pressure from customers, especially brands, to implement a sustainability strategy. Apparently brand pressure makes companies more active, in fact 53% of those receiving pressure obtained product or process certifications and 55% carried out an analysis to identify sustainability issues, compared to 32% and 26% of those that had not.

Financial pressure, on the other hand, does not seem to be a driving factor for sustainable transition, even for the largest companies, except for reporting. Receiving pressure from banks triples their propensity to publish a sustainability report: actually, 47% of companies that received public financial pressure did so, compared with 15% of those that had not.

Another study by Medio Banca issued in February 2023 - "The numbers of companies and the voice of the protagonists" - was conducted on 152 Italian companies in the fashion sector that exceed 100 million euros in turnover, for the two-year period 2020-21. This study provides more positive data. In fact, 77% of operators with a turnover of more than 300 million euros have a section on their website dedicated to



sustainability. However, only 68% of them have published a Sustainability Report using the Global Reporting Initiative's (GRI) international reporting standards.

As to environmental issues, the most important measurable ones concern CO2 emissions, energy consumption and waste reduction: positive results were achieved in all these areas. On average, normalized CO2 emissions decreased by 20.8%; waste produced fell by 17.2%. Average waste recycling rate increased from 65.5% in 2020 to 73.5% in 2021 (+8.0 p.p.). Finally, the use of electricity from renewable sources rose from 38.4% in 2020 to 43.4% in 2021.

One of the most important sustainability issues is that of waste disposal. Italy has introduced the obligation to differentiate the collection of textile waste from January 2022, with Legislative Decree n.116/2020, to implement EU Directive 2018/851. In particular, the Decree regulates the following:

- Extended producer responsibility (Art. 178-bis)
- Preparation for re-use, recycling and recovery (art.181)
- Municipal and special waste and classification (art.184)]
- By-products (184a)
- End of Waste (art.184-ter)
- Responsibility for waste producer and disposal (art.188)
- National waste management programme (art.198 bis)
- National waste management planning (articles 198bis, 199)
- Measures for separate collection (Articles 205, 205a)
- Packaging (Articles 217 et seq.)
- Penalties (Art. 258)

Used clothing, shoes and accessories are collected through special containers, managed by companies registered as environmental managers or entrusted to social cooperatives, or through textile collection spots. At the moment, separate textile collections are only partially structured at national level, with a great variety of methods. With Decree n.116/2020 municipalities and managers, who have not activated textile collection services so far, will have to implement and regulate them as soon as possible, both for clothing and other textile materials.

## ◆ Netherlands

The Dutch fashion industry has a rich history and has made a significant impact on the fashion world in Europe and beyond. From the traditional Dutch costumes of the past to the contemporary designs of today, Dutch fashion has always been characterized by its innovation, creativity, and attention to detail. However, as with the fashion industry as a whole, there is increasing concern about the environmental and social impacts of the Dutch fashion industry. Sustainable fashion has become an increasingly important issue in recent years, as people become more aware of the environmental and social impacts of the fashion industry. The Netherlands is one of the countries that has taken significant steps to address the issue of sustainable fashion, with a range of legislation and initiatives in place to encourage more sustainable practices. In this contribution, we will provide an overview of the existing

legislation surrounding sustainable fashion in the Netherlands, as well as five actions that have been taken by the Dutch government to promote sustainable fashion.



## **Existing Legislation:**

The Dutch government has implemented a range of legislation and regulations to promote sustainable fashion, particularly in the areas of waste reduction, circularity, and transparency.

### **1. The Waste Framework Directive**

The Waste Framework Directive is a piece of EU legislation that aims to promote the sustainable use of resources and reduce waste. The Dutch government has implemented this directive through a range of measures, including regulations that require businesses to take responsibility for the products they produce and to promote circularity by reducing waste and increasing the use of recycled materials.

### **2. The Dutch Textile Covenant**

In 2016, the Dutch government launched the Dutch Textile Covenant, a voluntary agreement between government, businesses, and NGOs aimed at promoting sustainable textile production and consumption. The covenant includes a range of commitments, including reducing the environmental impact of textile production and increasing the use of sustainable materials.

### **3. The Agreement on Sustainable Garments and Textile**

The Agreement on Sustainable Garments and Textile is another voluntary agreement between government, businesses, and NGOs aimed at promoting sustainable practices in the fashion industry. The agreement covers a range of issues, including improving working conditions, reducing the environmental impact of production, and increasing transparency in the supply chain.

### **4. The Product Environmental Footprint**

The Product Environmental Footprint (PEF) is a tool developed by the EU to measure the environmental impact of products, including textiles and clothing. The Dutch government has implemented the PEF through regulations that require businesses to provide information on the environmental impact of their products, including their carbon footprint and water use.

### **5. The Waste Prevention Programme**

The Waste Prevention Programme is a national programme aimed at reducing waste across all sectors of the economy, including the fashion industry. The programme includes a range of measures, such as encouraging consumers to buy more durable and sustainable products, promoting circularity by reducing waste and increasing the use of recycled materials, and improving the design and production of products to make them more sustainable.

## **Actions Taken by the Dutch Government:**

In addition to the legislation and regulations outlined above, the Dutch government has taken a range of actions to promote sustainable fashion. Here are four examples:

### **1. The Fashion for Good Centre**

The Fashion for Good Centre is a sustainable fashion innovation platform based in Amsterdam, founded by the C&A Foundation. The Dutch government has provided funding to the centre, which aims to accelerate the development of sustainable fashion by supporting innovative start-ups and promoting collaboration between industry stakeholders.



## **2. The Green Deal Circular Textiles**

The Green Deal Circular Textiles is a partnership between government, businesses, and NGOs aimed at promoting circularity in the textile industry. The partnership includes a range of initiatives, such as developing new recycling technologies, promoting the use of sustainable materials, and improving the design and production of products to make them more sustainable.

## **3. The Fair Wear Foundation**

The Fair Wear Foundation is an international NGO based in Amsterdam that works to improve working conditions in the garment industry. The Dutch government has provided funding to the foundation, which works with brands and suppliers to improve working conditions and promote sustainability in the supply chain.

## **4. The Circular Fashion Lab**

The Circular Fashion Lab is an initiative launched by the Dutch Ministry of Infrastructure and Water Management to promote circularity in the fashion industry.

### **◆ Romania**

In Romania, aspects related to textile waste are regulated by [OUG 92/2021](#), which imposes measures for the management of textile waste such as: preventing the generation of waste, encouragement of reusing products and establishment of schemes that promote repair and reuse activities for textiles. Also waste producers and waste holders have the obligation to implement separate collections for textiles, by January 1, 2025. Nevertheless, the local public administration authorities must ensure the necessary spaces for the separate collection of waste, equipping them with containers specific to each type of waste and appropriately developing the established centers, in order to offer the population the opportunity to discard, free of charge, of textile waste.

Regarding the [Sustainable Development Strategy](#) and its objectives, the IG-Fashion topic is part of the 12th Objective and its goals: [Responsible consumption and production](#), which advocates for the sustainable management and efficient use of natural resources to be achieved by 2030. Additionally, Romania still has to significantly reduce the generation of waste by 2030, through prevention, reduction, recycling and reuse.

In September 2022, the [Circular Economy Strategy is to be adopted by the Romanian Government](#) and the implementation plan is expected to be completed by May 2023, announced the [Minister of Economy, Florin Spataru](#).

The [Circular Economy Action Plan](#) will pave the way for a competitive, climate-neutral economy where consumers are empowered. In 2020 the European Commission adopted a new Circular Economy Action Plan which provides measures throughout the entire product life cycle and aims to prepare the economy for a green future, in which textile sector is a key component.

The transition to a circular economy is already underway, with Europe's leading businesses, consumers and public authorities adopting this sustainable model. The Commission will ensure that the transition to the circular economy offers opportunities for all and that no one is left behind. The Circular Economy Action Plan, presented today as part of the EU Industrial Strategy, proposes measures to ensure that:



- The focus is on sectors that use the most resources and where the potential for circularity is high.
- The Commission will introduce concrete measures on textiles - a new EU Textile Strategy to strengthen competitiveness and innovation in the sector and boost the EU textile reuse market.

Circular Economic Clusters are explained in the [Methodological Study of the implementation and technological transfer of circular economy principles at the level of an economic operator or operational groups](#). They are accepted as a solution for combating the crisis and are a tool for increasing competitiveness. Association in clusters determines circular economic development, offers competitive advantages for their members, influences structural changes, revitalizes industrial sectors and provides the necessary framework for research, innovation and regional development.

The textile industry is one of the most necessary industries in the world. The most produced are textiles for fashion, which represent a big problem for the environment and the land used or water pollution, due to the production and consumption of the materials. However, on Romanian territory, there is only [one authorized recycler of textile waste](#). Recent technological investments in this sector allow them to recycle a very large and diversified area of textile waste, focusing their activity on post-industrial waste (recovered from authorized collectors or generators, which they transform into recycled fibers through mechanical breakdown).





## 5. BEST PRACTICES IDENTIFIED IN THE PARTNER COUNTRIES

### ◆ Bulgaria

#### Pirin-TEX

<b>Name of best practice</b>	<b>Pirin-TEX, photovoltaic system</b>
<b>Links</b>	<a href="http://www.pirintex.com">www.pirintex.com</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	<p>Production of men's suits.</p> <p>The objective of company Pirin-TEX is to continuously develop the production and keep pace with the newest requirements of the international markets, while at the same time reducing the carbon footprint of the activities. Therefore, the company have set ambitious goals that are embedded in the everyday work:</p> <ul style="list-style-type: none"> <li>- to be garment producer <b>№1</b> in Europe</li> <li>- to be one of the drivers of innovations and technological progress in our sector</li> <li>- to turn Industry 4.0 into reality in our production to provide good labor conditions and long-term perspectives for the young specialists to protect the nature, the employees and clients from any harmful impacts resulting from Pirin-TEX activities</li> </ul>
<b>Location</b>	Gotze Delchev, Bulgaria
<b>Description of good practice</b>	<p>The care for the environment and the protection of Bulgaria's beautiful nature are our everyday tasks. Led by this conviction, the company has made significant investments in different sustainability projects over the years.</p> <p>The company has invested in a photovoltaic power plant.</p> <p>The photovoltaic system of Pirin-TEX covers about half of the electricity consumption of the company. The project is part of the long-term investment strategy of the company and the implementation of a policy for greater sustainability on the way to a green economy.</p>



<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	The photovoltaic system saves 1,470 tons of carbon dioxide per year. This corresponds to a number of 37,565 newly planted trees.
<b>Sustainability, social, financial, innovative, technological benefits</b>	<b>Sustainability benefit</b> - The photovoltaic system corresponds to a number of 37,565 newly planted trees
<b>Other comments/remarks</b>	Thanks to the trust, loyalty and cooperation of Pirin-Tex employees, clients and partners, the company manages to continuously enhance the scope of our operations and create products that are competitive in the global market. Therefore, Pirin-tex invests each year in the modernization of the technologies and in the improvement of the work environment.

## The Association of Second-hand Clothing Processors and Traders

<b>Name of best practice</b>	<b>The Association of Second-hand Clothing Processors and Traders, separate collection of textile and footwear waste</b>
<b>Links</b>	<a href="http://www.bia-bg.com">www.bia-bg.com</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	sorting and selling second-hand clothing and outlet products through physical stores
<b>Location</b>	Bulgaria
<b>Description of good practice</b>	The member companies of the association are responsible for the separate collection of textile and footwear waste in 10 municipalities in Bulgaria, where they have deployed and service over 200 specialized containers. This activity is carried out without burdening the budgets of the municipalities or the companies that place textile and footwear goods on the market.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	In 2019, 1,800 tonnes of textiles were collected in the containerised collection of unwanted textiles of Mania, Techsusele and Texaid. If these clothes had become part of general household waste or disposed of in an inappropriate place, they would have generated 412 tonnes of carbon emissions.



<b>Sustainability, social, financial, innovative, technological benefits</b>	<b>Sustainability benefit</b> – the collected 1,800 tonnes of textiles are equivalent to the carbon dioxide emissions that a car would generate from driving 1 288 498 km
<b>Other comments/remarks</b>	<p>More than 40 companies that collect, sort and sell reusable clothing and textile waste are members of the association. From the point of view of the European hierarchy, the reuse of goods is the best way (after waste prevention) to tackle waste problems. The association is actually carrying out an extremely useful activity because, as it has become clear, about 70% of the textile waste it sorts is suitable for reuse, and this is the most preferred way of recovering it. The representatives of the association are responsible for the import and treatment of more than 32 thousand tonnes of textile waste. This means that in just one year we ensure the reuse of more than 90 million individual textile items. The members of the association export more than 25 thousand tons of used clothing to third countries, mainly Russia, Africa, Asia. Nearly 5,000 people are directly involved in the association's activities - about 2,000 employees in member companies and about 3 thousand others in related activities.</p>

## Kingsley Ltd

<b>Name of best practice</b>	<b>Kingsley Ltd</b>
<b>Links</b>	<a href="http://www.wearekingly.com">www.wearekingly.com</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	T-shirt and socks production
<b>Location</b>	Bulgaria
<b>Description of good practice</b>	<p>Kingsley Ltd. is the first textile company in Bulgaria with zero waste, which produces sustainable products for the promotional industry. The company lends a hand to giants like Googlee, Samsung and Coca-Cola to leave a green footprint on the environment. Increasingly, these companies are opting for sustainable alternatives to the most popular merchandise products to save vital resources.</p> <p>The company has partnered with the developers of Polygiene, a technology that enables textiles to stay fresher for longer, to reduce the frequency of their laundering and at the same time</p>



	<p>support additional resource savings.</p> <p>Kingsley Ltd. works exclusively with corporate clients, but has ambitions to launch retail as well. The company was recently offered the opportunity to start manufacturing socks under the Amazon brand. One of the reasons is that the company is 1 of 52 GOTS*-certified sock manufacturers in the world. It has been awarded the prestigious Promotional Gift Award three times in the last two years, with GOTS-certified organic cotton socks and upcycled cotton socks in compostable bags gaining the most popularity among the awarded products.</p> <p>In addition to the organic cotton socks, Coca-Cola's favorite corporate gifts, for example, include branded and compressed T-shirts that resemble the shape of the brand's iconic bottle. Giants such as Bosch and AEG, as well as media companies such as CNN and Bloomberg, also frequently choose this type of promotional giveaway for their advertising campaigns. Kingsley has over 150 compression molds available, but can design specific templates for each brand's needs.</p>
<p><b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b></p>	<p>Kingsley helped Google to save over 22 million litres of water that would have been wasted in another factory in the manufacturing process. In addition, energy consumption was reduced by 90,168 sq/hr while preventing the use of 1,826 kg of pollutants. This is possible because of the environmentally friendly yarns used by Kingsley Ltd.</p>
<p><b>Sustainability, social, financial, innovative, technological benefits</b></p>	<p><b>Technological benefit</b> - The company has partnered with the developers of Polygiene, a technology that enables textiles to stay fresher for longer, to reduce the frequency of their laundering and at the same time support additional resource savings.</p> <p>Sustainability benefit - production of upcycled cotton socks in compostable bags</p>
<p><b>Other comments/remarks</b></p>	<p>The company's sales for 2021 amount to BGN 5.8 million with a net profit of BGN 1 million. For the previous year, the company's sales amounted to BGN 3 million. Kingsley Ltd. has offices in the United Kingdom and the United States, and the company's main market is countries such as France, Germany, Spain, the United Kingdom, Italy and the United States. On average, the company participates in around 13 international exhibitions each year.</p>

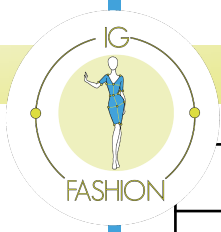


## MAK AD

<b>Name of best practice</b>	<b>MAK AD</b>
<b>Links</b>	<a href="http://www.mak.bg">www.mak.bg</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Over 100 years of experience in woven textile production and processing, continuously investments in latest generation machines and technologies, providing excellent labor conditions make company MAK one of the leading fabric manufacturer in Europe
<b>Location</b>	Gabrovo, Bulgaria
<b>Description of good practice</b>	Company MAK's commitment to the environment is a long term priority. Led by the Bulgarian policy for managing environmental impact, MAK has made investment in photovoltaic power plants. The system saves 114,80 tons of carbon dioxide per year, which corresponds to 6218 newly planted trees
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	The photovoltaic system saves 114,80 tons of carbon dioxide per year. This corresponds to 6218 newly planted trees
<b>Sustainability, social, financial, innovative, technological benefits</b>	<b>Sustainability benefit</b> - 6218 newly planted trees, per year
<b>Other comments/remarks</b>	Thanks to implemented principles and values in regards to the ethical business behavior, fair remuneration, respecting the rights of the workers, water and waste management, company MAK is loyalty business partner with vision for the global textile market.

## Hohenstein

<b>Name of best practice</b>	<b>Hohenstein, new standardized test method for detecting and classifying the environmental effects of textiles during</b>
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	<b>washing</b>
<b>Links</b>	<a href="#">Textiles Mikroplastik - Hohenstein</a> <a href="#">DIN SPEC 4872 to assess impact of textile microfibers - Hohenstein Hohenstein.US/microfibers</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Testing service
<b>Location</b>	Germany
<b>Description of good practice</b>	<p>Testing service provider Hohenstein has worked with partners to create a new standardized test method for detecting and classifying the environmental effects of textiles during washing. DIN SPEC 4872 combines analysis of fiber release, biodegradability and ecotoxicity.</p> <p>The test method according to DIN SPEC 4872 shows how many fibers are released during textile laundering, how well these fibers degrade in wastewater and how harmful the fiber residues are to the environment. Washing textiles releases microfibers into the wash water, which cannot be sufficiently retained by wastewater treatment plants. Synthetic fibers pose the greatest risk to the environment because of their longevity and inability to biodegrade.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	The new standard enables textile producers and suppliers to test, evaluate and compare products for fiber release during washing and environmental impact.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Innovative benefit
<b>Other comments/remarks</b>	Juliane Alberts sees this systematic evaluation as an opportunity for the textile industry to take the initiative on environmental impact: "Our reliable data can be used as a basis for more targeted product development. This is a way to actively and consciously control further environmental pollution."



## Elementum

<b>Name of best practice</b>	<b>Elementum</b>
<b>Links</b>	<a href="https://elementum.store/">https://elementum.store/</a> <a href="https://www.instagram.com/elementum.store/?hl=en">https://www.instagram.com/elementum.store/?hl=en</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Elementum is a Bulgarian brand that specializes in eco-friendly and sustainable fashion. They prioritize ethical production methods and the use of sustainable materials, with a focus on creating timeless and durable garments.
<b>Location</b>	Bulgaria
<b>Description of good practice</b>	<p>One best practice that Elementum applies is their use of organic and natural fibers. They source materials such as organic cotton, linen, and hemp, which are grown without the use of harmful chemicals or pesticides. These materials have a lower environmental impact and are biodegradable, contributing to a more sustainable fashion industry.</p> <p>In addition to their material choices and ethical production, Elementum promotes slow fashion and designs garments with longevity in mind. They create versatile and classic pieces that can be worn across seasons, encouraging consumers to invest in quality clothing that will last.</p> <p>Elementum also implements a circular approach to fashion. They offer a recycling program where customers can bring back their old Elementum garments, which are then upcycled or recycled into new products. This initiative reduces waste and allows customers to actively participate in closing the fashion loop.</p> <p>Furthermore, Elementum strives to educate consumers about sustainable fashion practices through their online platform and social media channels. They raise awareness about the environmental and social impact of the fashion industry and provide tips for conscious and responsible consumption.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data found)



<b>Sustainability, social, financial, innovative, technological benefits</b>	sustainable production with lowered waste, impact on community of sustainable designers, promoting collaboration and sustainable fashion ideologies, ethical working conditions
<b>Other comments/remarks</b>	-

## Jeni Style

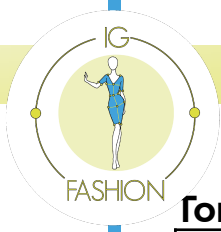
<b>Name of best practice</b>	<b>Jeni Style</b>
<b>Links</b>	<a href="https://www.jenistyle.com/en">https://www.jenistyle.com/en</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion brand committed to upcycling and local production
<b>Location</b>	Bulgaria
<b>Description of good practice</b>	One notable best practice that Jeni Style implements is their commitment to upcycling and repurposing. They collect pre-loved garments, textiles, and other materials and transform them into new, unique designs. By giving new life to discarded items, they reduce waste and promote circularity within the fashion industry. Jeni Style also emphasizes local production and craftsmanship. They work with skilled artisans in Bulgaria, supporting the local economy and ensuring fair labor practices. By producing garments locally, they reduce transportation-related emissions and maintain transparency and control over their supply chain.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data found)
<b>Sustainability, social, financial, innovative, technological benefits</b>	sustainable production with lowered waste, impact on community of sustainable designers, promoting collaboration and sustainable fashion ideologies, ethical working conditions, local production, repurposing waste, awareness raising
<b>Other comments/remarks</b>	-





## KOMANA

<b>Name of best practice</b>	<b>KOMANA</b>
<b>Links</b>	<a href="https://komana.myshopify.com/">https://komana.myshopify.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	KOMANA is a Bulgarian fashion brand that combines traditional craftsmanship with sustainable practices. They specialize in creating contemporary garments using locally sourced wool and incorporating traditional Bulgarian textile techniques.
<b>Location</b>	Bulgaria
<b>Description of good practice</b>	<p>One unique best practice that KOMANA implements is their focus on reviving and promoting traditional textile crafts. They collaborate with local artisans and communities skilled in hand-weaving and knitting techniques. By incorporating these traditional crafts into their designs, they preserve cultural heritage and support the livelihoods of artisans.</p> <p>KOMANA also emphasizes the use of locally sourced wool. They work directly with local sheep farmers in Bulgaria to obtain high-quality wool, reducing the environmental impact associated with transportation and supporting the local agricultural economy. By promoting local sourcing, they contribute to the sustainability of their supply chain.</p> <p>Furthermore, KOMANA embraces a slow fashion philosophy. They create timeless pieces with meticulous attention to detail, ensuring durability and longevity. By encouraging consumers to invest in quality garments that can be cherished for years, they promote a more sustainable approach to fashion.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data found)
<b>Sustainability, social, financial, innovative, technological benefits</b>	sustainable production with lowered waste, promoting collaboration and sustainable fashion ideologies, ethical working conditions, local production, repurposing waste, awareness raising, slow production, revival of local textile craftsmanship
<b>Other comments/remarks</b>	-



## Tonlé

<b>Name of best practice</b>	<b>Tonlé - Zero waste production</b>
<b>Links</b>	<a href="https://tonle.com/">https://tonle.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Tonlé is a platform for brands, designers, makers, manufacturers, funders, and innovators who are collaboratively building a new circular fashion economy.
<b>Location</b>	All over the world
<b>Description of good practice</b>	<p>Today, Tonlé is a collaborative online platform that allows the brand to show off both their own ethically manufactured items and the goods of other designer-makers that care about fairness and climate justice. The amazing craftsmen and designers that created the clothing, accessories, and home goods in this area, including many of our team's original members, come from all over the world. In contrast to competing or monopolizing, our goal is for a future where businesses, manufacturers, designers, and financiers collaborate for the benefit of all.</p> <p>They are committed to helping new creatives, particularly those that fall outside the conventional scope of fashion weeks in the global north, by offering them tools and assistance.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Reduction in waste due to zero waste production model
<b>Sustainability, social, financial, innovative, technological benefits</b>	sustainable production with lowered waste, use of sustainable materials, ethical working conditions, traceability and transparency, education in community
<b>Other comments/remarks</b>	-



## Armedangels

<b>Name of best practice</b>	<b>Armedangels - Sustainable production brand</b>
<b>Links</b>	<a href="https://www.armedangels.com/wo-en">https://www.armedangels.com/wo-en</a> <a href="https://directory.goodonyou.eco/brand/armedangels">https://directory.goodonyou.eco/brand/armedangels</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable and ethical fashion brand
<b>Location</b>	Germany
<b>Description of good practice</b>	<p>Armedangels is a German fashion brand that is dedicated to creating sustainable and ethically produced clothing. They prioritize transparency, fair labor practices, and environmentally friendly materials.</p> <p>One notable best practice employed by Armedangels is their use of organic and eco-friendly materials. They prioritize certified organic cotton, which requires less water and fewer chemicals compared to conventional cotton production. They also utilize other sustainable materials such as Tencel® lyocell and recycled fibers, reducing their environmental impact.</p> <p>Transparency is another key aspect of Armedangels' sustainability practices. They provide detailed information about their supply chain and production processes, including the factories they work with and the certifications they hold. This transparency allows consumers to make informed decisions and understand the social and environmental impact of their purchases.</p> <p>Armedangels also emphasizes longevity and durability in their designs. They focus on creating timeless and high-quality garments that are meant to last, discouraging fast fashion consumption patterns. By encouraging customers to invest in long-lasting pieces, they reduce the overall environmental impact of the fashion industry.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Member of GOTS, FairWear Foundation and Responsible Wool Standard



<b>Sustainability, social, financial, innovative, technological benefits</b>	sustainable production with lowered waste, use of sustainable materials, ethical working conditions, traceability and transparency
<b>Other comments/remarks</b>	-

◆ **Greece**

**Eating the Goober**

<b>Name of best practice</b>	<b>Polymorphic and recyclable female clothes (<i>Eating the Goober</i>)</b>
<b>Links</b>	<a href="https://www.eatingthegoober.com/">https://www.eatingthegoober.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Athens, Greece
<b>Description of good practice</b>	Feminine clothes are designed as polymorphic to enable the user to style the same clothing in various ways. The aim is to maximize each item's utility and minimize consumption. Moreover, producers in <i>Eating the Goober</i> use exclusively recyclable materials (e.g. avoiding polyester and elastane that are both non-recyclable).
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data is available)
<b>Sustainability, social, financial, innovative, technological benefits</b>	Promoting sustainability through slow fashion and environmentally friendly raw materials
<b>Other comments/remarks</b>	-



## HEEL

<b>Name of best practice</b>	<b>Special collection produced by clothing waste (HEEL)</b>
<b>Links</b>	<a href="https://www.heelshop.gr/about-us/">https://www.heelshop.gr/about-us/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Athens, Greece
<b>Description of good practice</b>	Creation of a special collection exclusively produced by pieces and clothes that are left out of the production process, whether they come from canceled samples or pieces of fabric – items that would otherwise be considered waste.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data is available)
<b>Sustainability, social, financial, innovative, technological benefits</b>	Sustainability: Minimising waste through upcycling left out clothes
<b>Other comments/remarks</b>	-

## Arjuna Knitwear

<b>Name of best practice</b>	<b>Special collection produced exclusively with recycled sewing thread and organic cotton (Arjuna Knitwear)</b>
<b>Links</b>	<a href="https://www.facebook.com/Arjuna.Knitwear">https://www.facebook.com/Arjuna.Knitwear</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Athens, Greece



<b>Description of good practice</b>	Inspired by the philosophy surrounding yoga, <i>Arjuna Knitwear</i> creates minimal knitted clothes by organic cotton. Recently, the brand has started to produce certain items exclusively with recyclable threads and organic cotton.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data is available)
<b>Sustainability, social, financial, innovative, technological benefits</b>	Wearing organic fabrics has a major positive impact on human and planet health, promoting ecological balance and protecting biodiversity.
<b>Other comments/remarks</b>	-

## The Line Project

<b>Name of best practice</b>	<b>Production of clothes with exclusive use of eco-friendly raw materials (The Line Project)</b>
<b>Links</b>	<a href="https://thelineproject.gr/">https://thelineproject.gr/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Athens, Greece
<b>Description of good practice</b>	The Line Project uses exclusively eco-friendly raw materials that do not release environmentally hazardous by-products. They mainly work with tencel and cupro, both coloured with non-toxic substances.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no data is available)
<b>Sustainability, social, financial, innovative,</b>	The Line Project combining minimalistic and classical patterns in design has gained popularity among diverse age groups,



<b>Technological benefits</b>	promoting eco-friendly clothing even to consumers that are not sustainably-oriented.
<b>Other comments/remarks</b>	-

## Kimalé

<b>Name of best practice</b>	<b>Sustainable fashion combining contemporary design with the African and Greek tradition (Kimalé)</b>
<b>Links</b>	<a href="https://kimale.co">https://kimale.co</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Athens, Greece
<b>Description of good practice</b>	<p>Kimalé is a socially responsible brand, promoting sustainable production by using, among others, traditional African textiles and artisanal handicrafts combined with Greek crafts and concepts. The idea is to create timeless high quality pieces in responsible stock volumes, following a slow fashion philosophy. Main principles of Kimalé:</p> <ul style="list-style-type: none"> <li>- Zero waste: Utilise even the smallest piece of leftover fabric for creating new items (e.g. accessories)</li> <li>- No overproduction</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental & Social impact (No data available)
<b>Sustainability, social, financial, innovative, technological benefits</b>	<ul style="list-style-type: none"> <li>- Environmental sustainability</li> <li>- Promotion of intercultural aesthetics</li> </ul>
<b>Other comments/remarks</b>	Kimalé sources their textiles from art craftsmen in Africa, whom they access to through Mariama Camara, a well-known entrepreneur in fashion, based in the Ivory Coast, who acts as intermediary actor between designers and local craftsmen.



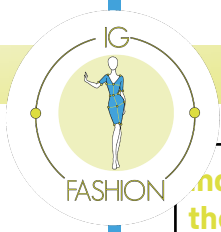
## Mikrovouti

<b>Name of best practice</b>	<b>Environmentally friendly, socially responsible localised production of T-shirts (Mikrovouti)</b>
<b>Links</b>	<a href="https://el.mikrovouti.com/">https://el.mikrovouti.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production (T-shirts & towels)
<b>Location</b>	<ul style="list-style-type: none"> <li>- Preveza, Greece</li> <li>- Nicosia, Cyprus</li> </ul>
<b>Description of good practice</b>	<ul style="list-style-type: none"> <li>- Use of Greek clean cotton</li> <li>- The paints are safe and non-toxic and the prints are handmade with eco-friendly water-based paints</li> <li>- SOFA is responsible for sewing</li> <li>- Consumers send back products from the brand that do not want any more and get a discount of 10% in their next buy</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	<ul style="list-style-type: none"> <li>- Environmental Impact (No data available)</li> <li>- Social impact (SOFFA collaborates with 27 frontline NGOs in Greece, providing employment and vocational training in fashion to their beneficiaries. SOFFA also runs short workshops in their premises to mobilize their beneficiaries.)</li> </ul>
<b>Sustainability, social, financial, innovative, technological benefits</b>	<ul style="list-style-type: none"> <li>- Sustainability benefit: zero waste, recyclable products, upcycling waste from the production</li> <li>- Social benefit: Cooperation with a social fashion factory (SOFFA)</li> </ul>
<b>Other comments/remarks</b>	<b>SOFFA.gr</b> is a social fashion factory that trains and hires survivors of human trafficking and refugees and reintegrates them into society.

## Funky Buddha

<b>Name of best practice</b>	<b>Provision of training to designers on sustainable design and production (Funky Buddha)</b>
<b>Links</b>	<a href="https://www.funky-buddha.com/">https://www.funky-buddha.com/</a>

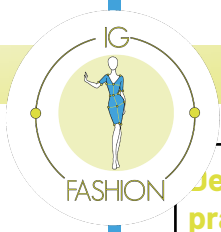




<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Greece
<b>Description of good practice</b>	<p>Since 2020, Funky Buddha provide training to all designers on sustainable production to achieve company's objectives towards sustainability:</p> <ul style="list-style-type: none"> <li>- By the end of 2023, Funky Buddha aims at zero-use of single-use plastics, and adoption of green-only packaging.</li> <li>- By the end of 2025, the collections will make the highest possible use of sustainable fabrics and Funky Buddha will try to achieve maximum renewable energy use for its HQ and stores all over the world.</li> <li>- Manufacturing is placed (when possible) near the actual material sources.</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (No available data)
<b>Sustainability, social, financial, innovative, technological benefits</b>	<ul style="list-style-type: none"> <li>- Environmental sustainability</li> <li>- Social benefit by employees' upskilling</li> </ul>
<b>Other comments/remarks</b>	Funky Buddha has brought the production of T-shirts, shorts, and sportswear back in Greece to ensure localization of supply chains.

## Athens Knit Lab

<b>Name of best practice</b>	<b>Promotion of sustainable manufacturing of knitted products (Athens Knit Lab)</b>
<b>Links</b>	<a href="https://athensknitlab.com/">https://athensknitlab.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design & production
<b>Location</b>	Greece



<b>Description of good practice</b>	<p>Design:</p> <ul style="list-style-type: none"> <li>- Use of the latest STOLL ADF and CMS knitting machines and STOLL M1+ and CAD/CAM software for 3d knitting to promote zero waste</li> </ul> <p>Production:</p> <ul style="list-style-type: none"> <li>- Produce in small scale upon request and consult with the customer before proceeding to the development phase</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Environmental impact (no available data)
<b>Sustainability, social, financial, innovative, technological benefits</b>	They are considered pioneers in 3d knitting in Greece.
<b>Other comments/remarks</b>	-

## Kings of Indigo

<b>Name of best practice</b>	<b>A 360 approach to sustainable denim production (Kings of Indigo)</b>
<b>Links</b>	<a href="https://www.kingsofindigo.com/">https://www.kingsofindigo.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Netherlands
<b>Description of good practice</b>	<p>Since 2011, Kings of Indigo design and produce clothing around five pillars of sustainability:</p> <ul style="list-style-type: none"> <li>- Planet friendly materials (Organic, recycled, natural and vegan),</li> <li>- Less water use (following the <a href="#">EIM: Environmental Impact Measuring</a>),</li> <li>- Transport (work with <a href="#">Climate Partner</a> to calculate the annual Corporate Carbon Footprint and reduce emissions),</li> <li>- Waste management,</li> <li>- Fair working conditions (<a href="#">CoC</a>, 2022).</li> </ul>



<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	<u><a href="#">Sustainability report 2021</a></u>
<b>Sustainability, social, financial, innovative, technological benefits</b>	Environmental & Social benefits
<b>Other comments/remarks</b>	-

## HNST

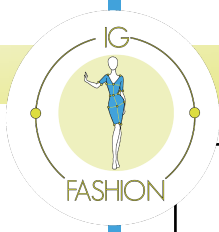
<b>Name of best practice</b>	<b>Environmentally sustainable denim collection (HNST)</b>
<b>Links</b>	<a href="https://www.letsbehonest.eu/">https://www.letsbehonest.eu/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design and production
<b>Location</b>	Belgium
<b>Description of good practice</b>	HNST produced denims with: <ul style="list-style-type: none"> <li>- 56% recycled cotton,</li> <li>- 23% Greek cotton, and</li> <li>- 21% Tencel.</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	HNST denim only requires 361 litres of water per pair, which means this Belgian brand is reducing water consumption by 95% compared to industry standards.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Environmental benefits
<b>Other comments/remarks</b>	-



◆ Italy

**Amarossa**

<b>Name of best practice</b>	<b>Amarossa: sustainable shoes on demand</b>
<b>Link</b>	<a href="https://www.peronshoes.it/">https://www.peronshoes.it/</a> ; <a href="https://amarossa.com/">https://amarossa.com/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Design for disassembly.
<b>Location</b>	Camponogara (VE) - Italy
<b>Description of best practice</b>	Peron is a small luxury footwear factory with 62 employees and 4 million euros turnover in 2021. It has recently started on-demand production of its own brand Amarossa. It has recently launched its own brand: Amarossa footwear, a sustainable and ecological shoe, with zero environmental impact. At the end of its use, each model can be completely dismantled, regenerated and put back into cycle. For this reason, only 100% recyclable, green and eco-sustainable materials are used in its production.
<b>Impact (based on EU/national legislation, real data, impact on environment, education etc.)</b>	To ensure transparency in each production phase, the company uses Blockchain Certificate, which moves along EPR (Extended Producer Responsibility) promoted by the EU (see Dir. 2018/851/EU). All shoes are equipped with 2 RFID identifying tags, associated with an NFC tag, readable by bringing a mobile phone closer to the shoe right sole. When the NFC is read, a web page opens with all the shoe data and any other useful piece of information, such as a pre-filled return form. Thanks to Blockchain Certification, every production phase becomes transparent: <ul style="list-style-type: none"> <li>● Raw materials: 100% recyclable;</li> <li>● Shoe cleaning cream: 100% natural;</li> <li>● Packaging: 100% recyclable.</li> </ul>
<b>Sustainability, social, financial, innovative, technological benefits</b>	Blockchain Certification constitutes a product passport. The company guarantees: <ul style="list-style-type: none"> <li>● A Green approach: all materials are recycled, compostable and biodegradable.</li> <li>● 100% Made in Italy production: each shoe is conceived, designed and manufactured by artisans in Italy.</li> <li>● Free return policy: Returning a pair of used Amarossa is completely free.</li> </ul> <p>The digital ownership certificate is also a passport to Metaverse. Once a pair of Amarossa has been purchased, the</p>



	customer receives a virtual version by email that can be used in Metaverse.
<b>Other comments/remarks</b>	-

## FERRAGAMO

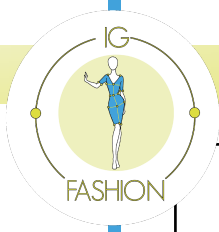
<b>Name of best practice</b>	<b>FERRAGAMO: materials for circular economy</b>
<b>Links</b>	<a href="https://sustainability.ferragamo.com/it">https://sustainability.ferragamo.com/it</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Recycled and innovative materials.
<b>Location</b>	Ferragamo is one of the big Made in Italy luxury brands. Founded in 1927, produces leather goods, footwear, clothing, accessories and perfumes. It had a turnover of around 1 billion euros in 2020 and more than 4000 employees. The company's headquarters are in Florence. Production takes place in a series of specialized laboratories in the Florentine leather district. Ferragamo shops can be found in more than 90 countries all over the world.
<b>Description of best practice</b>	<p>Ferragamo has identified 9 Objectives from 2030 Agenda on which to focus their resources. The company's commitment to the circular economy is carried out with a wide-ranging approach: from the inclusion of regenerated and circular raw materials in each collection, to the choice of certified and post-consumer packaging, from the attention to reuse or donation of obsolete raw materials, to energy consumption from renewable sources.</p> <p>In 2017 Ferragamo signed the Circular Economy Manifesto which promotes business models based on sharing, extending products life, reusing, and use of renewable energy and resources. Since 2020 it has introduced responsible, innovative and quality materials into production, such as organic cotton, viscose from responsible sources, and recycled and regenerated materials, such as nylon, wool, cashmere and silk. The company also uses new sustainable and innovative materials, such as ECONYL®, a synthetic yarn derived from recycled plastic polymers, and ORANGE FIBER, a sustainable fabric made from citrus processing industry by-products.</p> <p>In 2017 the <i>Ferragamo Orange Fiber Collection</i> was created, the first one made with citrus fabrics. In 2022 the company launched the <i>Multicolor Eyewear Capsule</i>, a collection of <i>genderless</i> sunglasses made from bio-based composite materials with low environmental impact.</p>



<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	The brand has implemented the 2030 Agenda SDOs, in its policies; It has promoted network initiatives with other Made in Italy brands to share the principles of environmental sustainability and operates in full compliance with European and national standards.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Innovation commitment also led to the introduction of tanned leathers without chrome and other metals and the use of tanned leather soles respecting the highest environmental standards in order to reduce environmental impact. The use of recycled materials has contributed to the circular economy.
<b>Other comments/remarks</b>	-

## ID EIGHT

<b>Name of best practice</b>	<b>ID EIGHT: eco-shoes from fruit</b>
<b>Links</b>	<a href="https://www.id-eight.com/sostenibilita/">https://www.id-eight.com/sostenibilita/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Natural materials, waste materials recycling, product and material certifications, upcycling.
<b>Location</b>	ID EIGHT: ID stands for Identity, eight is the Chinese symbol for the infinite, a well-wishing name for very long wear. It was founded in 2019, thanks to a crowdfunding on Kickstarter, to produce eco-sustainable sneakers, made from food industry waste and recycled materials. ID EIGHT is based in Florence, while production takes place in the Marche footwear district of Macerata, in a small family-run business.
<b>Description of best practice</b>	<p>The company produces sustainable and ethical sneakers with a refined design, entirely made in Italy with low environmental impact materials, coming from food industry waste.</p> <p>4 main types of materials are used:</p> <ol style="list-style-type: none"> <li>1. <i>AppleSkin</i>: a material made in Italy obtained from the bio-polymerization of apple peels and cores;</li> <li>2. <i>Vegea</i>: obtained from the bio-polymerization of marc, the residue of the grape juice extraction process, discarded in Italy;</li> <li>3. <i>Piñatex</i>: made in Spain using waste pineapple leaves from the Philippines;</li> <li>4. <i>Recycled lycra, mesh</i> and polyester from Spain and Italy.</li> </ol> <p>Each shoe component is made of materials with low environmental impact, from upper, sole, laces, lining and label, up to box and packaging bag. Products are carefully selected to guarantee the minimum environmental impact and the appellation of 100% Cruelty Free.</p> <ul style="list-style-type: none"> <li>● Upper: Piñatex, Vegea textile and Apple skin;</li> </ul>



	<ul style="list-style-type: none"> <li>• Lining: organic cotton;</li> <li>• Insole: recycled cotton;</li> <li>• Sole: rubber + 30% recycled rubber;</li> <li>• Laces: recycled polyester;</li> <li>• Label and ribbon: recycled polyester.</li> </ul>
<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	As well as shoes, the entire production chain is completely controlled, from materials to transport, entrusted to companies that do not exploit workers, which respect trade union rights and have ISO-14001 environmental certification. All materials are certified. No materials of animal origin are used.
<b>Sustainability, social, financial, innovative, technological benefits</b>	The creative reuse of waste materials contributes to environmental sustainability and circular economy.
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## MABO

<b>Name of best practice</b>	<b>MABO: sustainable buttons made of vegetable ivory</b>
<b>Links</b>	<a href="https://www.mabo.it/">https://www.mabo.it/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Natural materials, regeneration and recycling
<b>Location</b>	The <i>Mabo</i> group is one of the first Italian manufacturers of accessories in the European clothing market. It had a turnover of almost 9 m euros in 2021. <i>Mabo</i> has 5 operational centers, 2 offices in Italy, in Grumello and Telgate, Bergamo, at the center of a highly specialized industrial area, other plants are in the United Kingdom, Romania, Ukraine and China.
<b>Description of best practice</b>	<p>The company produces 100% sustainable COROZO buttons. Corozo is a material made from the seeds of a palm tree, <i>Phytelephas macrocarpa</i>, which thrives in Ecuadorian microclimates. Corozo nuts contain a fluid material that solidifies when dried and takes on characteristics similar to ivory. The advantages of corozo:</p> <ul style="list-style-type: none"> <li>• comes from renewable sources;</li> <li>• it is harvested from wild forests, without risks for biodiversity or dangers of deforestation;</li> <li>• has a reduced environmental impact;</li> <li>• it is biodegradable;</li> <li>• its processing takes place without chemicals;</li> <li>• It is dyed with a responsible water cycle.</li> </ul>
<b>Impact (based on EU/national legislation, real data, impact on</b>	<i>Mabo</i> is committed to integrating the values of sustainability and circular economy into its corporate vision and mission. After signing EPR for the analysis of the economic potential of waste, it created a shared and communicable sustainability



environment, education, etc.)	path. Each product in its catalogue collections will be tagged by 5 icons defining its peculiar sustainability characteristics: sustainable chemistry; cobalt free; recycling; responsible water cycle; materials with low environmental impact.
Sustainability, social, financial, innovative, technological benefits	<p>Mabo has adopted several strategies for environmental sustainability:</p> <ul style="list-style-type: none"> <li>● has a <i>corporate Code of Ethics</i>;</li> <li>● has signed a <i>REACH</i> commitment;</li> <li>● has signed the <i>DETOX-Greenpeace</i> commitment for the elimination of toxic substances;</li> <li>● carefully plans waste and scrap management;</li> <li>● selects suppliers of raw materials according to corporate sustainability standards;</li> <li>● reduces water waste, by regenerating and recycling industrial wastewater;</li> <li>● has digitized catalogues to reduce paper waste.</li> </ul>
Other comments	-

## Malia Atelier

<b>Name of best practice</b>	<b>Malia Atelier: sustainable clothes made of broom</b>
<b>Links</b>	<a href="https://malialab.com/">https://malialab.com/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Natural materials, product certification, durability incentive.
<b>Location</b>	Guardavalle Marina (CZ) Calabria - Italy
<b>Description of best practice</b>	<p>Atelier lab founded in 2016, produces tailor-made clothing from sustainable and certified materials. There is no economic data available. Malia Lab is an artisan company founded by Flavia Amato, which produces and sells bespoke, handmade clothing in ateliers and online. These garments are produced with certified organic fabrics, which guarantee controlled yarns quality, and without additives and dangerous substances.</p> <p>Malia Lab uses only natural fabrics from certified crops; linen, cotton, hemp, silk, bamboo or innovative materials such as Tencel or Lyocell (made from algae and eucalyptus trees), milk fiber or cupro (made from cellulose fiber).</p> <p>These products are used to create clothes to be worn in all seasons, thanks to the thermoregulatory capabilities of natural fabrics, and made to last over time, thanks to an evergreen design suitable on all occasions, never out of fashion.</p> <p>To avoid waste and reduce returns, the company offers "made to order clothes. At the end of the product's life, the materials are fully recyclable.</p>

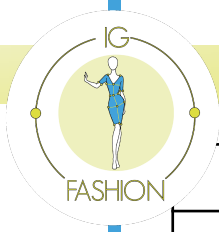




	In recent years, Malia has joined the broom processing chain, which used to be a widely used resource in southern Italy, with the <i>SMAFINE /Smart Manufacturing</i> project for natural and eco-sustainable fibers, funded by Regione Calabria.
<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	The production of clothes made with certified natural fibers is consistent with national legislation and EU regulations. Production on demand guarantees sustainability objectives.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Broom is a spontaneous plant which doesn't need treatments with insecticides and other toxic substances. The recovery of an ancient production through innovative technologies offers new opportunities for work and professional development to young people and local communities.
<b>Other comments/remarks</b>	-

## MAX MARA: CAMELUXE

<b>Name of best practice</b>	<b>MAX MARA: CAMELUXE, recycling of camel fabrics</b>
<b>Links</b>	<a href="https://it.maxmara.com/editorial/thecube">https://it.maxmara.com/editorial/thecube</a>
<b>Industrial sector within the f&amp;t industry and lifecycle position</b>	upcycling, waste reduction, technological innovation
<b>Location</b>	Production and administration headquarters are in Reggio Emilia, Italy. Sales are carried out in 2234 locations in 105 countries.
<b>Description of best practice:</b>	Creative recycling of waste materials.
<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	The commitment to protecting the environment is evidenced by the certifications acquired by Imbotex Lab, the leading company in the field of natural and technical padding, which has collaborated with Max Mara for the production of Cameluxe. Imbotex has the following certifications: GLOBAL RECYCLING STANDARD, (GRS), the OEKO-TEX, and the GLOBAL ORGANIC TEXTILE STANDARD (GBTS), the INTERTEK VEGAN MARK (IVM).
<b>Sustainability, social, financial, innovative, technological benefits</b>	Max Mara has created an alternative distribution line, extending, in fact, the life of its collections. Since 1982 the company has opened "Intrend Diffusione Tessile" with the aim of managing the remaining garments and accessories of the



	group.
<b>Other comments/remarks</b>	/

## The Silk Nest

<b>Name of best practice</b>	<b>The Silk Nest: regenerative agriculture</b>
<b>Links</b>	<a href="http://www.nidodiseta.com">www.nidodiseta.com</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	The Silk Nest is a small agricultural cooperative founded in 2013 for the restoration of mulberry growing, the breeding of silkworms and artisan production of silk fabrics. In 2021 it had a turnover of just over 40,000. In 2022 it started a joint project with Gucci, the haute couture giant, to promote the natural silk supply chain.
<b>Location</b>	San Floro (CZ) Calabria, Italy.
<b>Description of best practice:</b>	<p>The Silk Nest is an agricultural cooperative created by three young people who decided to restore the traditional cultivation of mulberry for silkworm breeding that had been completely lost. The cooperative members have restored silk production, traveling to discover best practices in the sector in Thailand, India, Switzerland and France. The three partners have also been supporting a small group of local women artisans who started to weave silk thread to produce handmade fabrics. Since their very beginning they have been teaching this sustainable model to anyone interested in discovering how silk is produced, attracting thousands of tourists and lots of schools.</p> <p>The meeting with Gucci, in early 2022, gave a new perspective to the cooperative. The aim of the joint project is to create a new silk supply chain, which will also include the production of the first Gucci scarves made with silk threads from local organic farming practices. Gucci will also follow the expansion of the farmers involved, promoting the regenerative production of silk. The project has scientific partners such as CREA, the Italian public research institute, specialized in breeding and silkworm technologies, and Ongetta, the silk yarn producer.</p>
<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	<i>The Silk Nest</i> operates in full line with European and national legislation. The initiative with Gucci will help rediscover traditional craftsmanship skills and create job opportunities in areas at high risk of depopulation. From a cultural point of view, a Silk Museum was established to preserve the heritage of silk history and traditions. An Academy was founded to pass on this ancient knowledge to the next generations of artisans.



<b>Sustainability, social, financial, innovative, technological benefits</b>	From an environmental point of view, the project contributes to the preservation of nature, improving soil conditions and increasing its capacity to store carbon from the atmosphere. Fruits and silk production waste can also be transformed into by-products from jam to cosmetics, thus favoring a circular economy.
<b>Other comments/remarks</b>	-

## Ultralimited

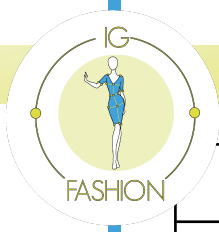
<b>Name of best practice</b>	<b>Ultralimited: fashion glasses from waste</b>
<b>Links</b>	<a href="https://www.ultralimited.it/">https://www.ultralimited.it/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Recycling waste materials, programming for durability.
<b>Location</b>	Registered office: Asti. Production and logistics site: Cordignano (TV): Veneto eyewear district.
<b>Description of best practice</b>	<p>450 Srl, is a company which produces glasses from cellulose waste, founded in 2014 with an annual turnover of about 1.250 million euros. <i>Ultralimited</i> manufactures glasses with cellulose acetate waste derived from other processes. Cellulose acetate is a bio-based polymer. To obtain this, they start from the selection of renewable sources for certain varieties of cotton trees and waste. The raw material comes from the recycling of Mazzucchelli sheet waste, the world leader in the production and distribution of plastic material, traditionally used for the production of frames and sunglasses.</p> <p>Each <i>Ultralimited</i> eyewear is a 100% Made in Italy, handmade product, designed and produced through an innovative hi-tech processing system, which combines modern technologies with the wisdom of Cadore manufacturing. It takes 41 days to make a pair of glasses; The long processing, by craftsmen, experts, guarantees extreme attention to detail and durability.</p> <p>A high number of acetate colors (196) allow 3 trillion different combinations with frames that match from 8 to 12 colors, making each pair of glasses unique. The frame is laser screen-printed with a progressive serial number to ensure its authenticity. Both frames and lenses can be customized with logos, writings or signatures. The company guarantees a repair service by sending glasses to the production site.</p>
<b>Impact (based on EU/national legislation, real data, impact on</b>	Creative design and reuse of waste material lead to considerable energy savings and promotes a more sustainable environmental impact than traditional production methods.



environment, education, etc.)	
Sustainability, social, financial, innovative, technological benefits	Technological innovation facilitates the recovery of waste materials to create a unique and durable product.
Other comments/remarks	-

## WRÅD

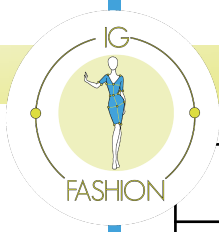
<b>Name of best practice</b>	<b>WRÅD: technologies for sustainable consumption</b>
<b>Links</b>	<a href="https://www.wradliving.com/">https://www.wradliving.com/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Circular and durability design.
<b>Location</b>	Vicenza – Veneto, Italy
<b>Description of best practice:</b>	<p>Production of sportswear and other special garments. Founded in 2015, it has few employees and an annual turnover of about 250,000 euros. The company focuses on innovation and new technologies, which allow them to guarantee their clothing safety, traceability and durability. The garments produced by WRÅD are made with recycled materials in partnership with Veneta Waste. The coloring takes place with a particular technology, gpwdr®, an innovative dyeing technique based on the recycling of enhanced graphite powder, inspired by ancient tradition. GPWDR® technology makes it possible to transform graphite waste into the raw material of an innovative and circular supply chain.</p> <p>WRÅD garments can be traced through a special system, an intelligent system that integrates social and environmental traceability with <i>gamification</i>. This system makes visible all the information on the origin and impact of clothes, pointing out how much the initial environmental cost of a garment is amortized over time. By connecting P.E.A.S. to the t-shirt through a QR code or an NFC tag signals are transmitted to a mobile phone. The app recognizes how long you have had the garment, if you have already used it and how much you have amortized in terms of water, energy and technology consumption. The company owns certified dyes, such as Herculaneum Red and Smart Indigo, and doesn't use any common dyeing chemicals.</p>
<b>Impact (based on EU/national legislation, real data, impact on environment, education, etc.)</b>	WRÅD products are certified OEKOTEX, (they are environmentally friendly both in processes and in factories, as well as tested), GRS (they have recycled content certification, chain of custody, social and environmental practices and chemical restrictions), GOTS (they ensure



	responsible and sustainable development in the textile sector).
<b>Sustainability, social, financial, innovative, technological benefits</b>	The three pillars that guide WRÅD in their choice of materials are: safety, traceability and durability, to which is added the choice of materials reuse, such as recycled wool, polyester and cotton. In addition to production, WRÅD offers educational, design and consultancy services on sustainability practices.
<b>Other comments/remarks</b>	-

## Orange Fiber

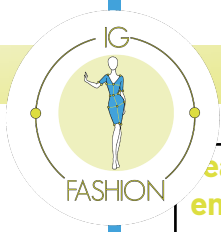
<b>Name of good practice</b>	<b>Orange Fiber: sustainable fabrics from orange waste</b>
<b>Link</b>	<a href="https://orangefiber.it/">https://orangefiber.it/</a> <a href="https://youtu.be/UYhphZV-R6c">https://youtu.be/UYhphZV-R6c</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	Recycling of agricultural and industrial waste; upcycling.
<b>Location</b>	Registered office in Catania, Sicily, for the first part of the processing, Spain for the yarn, Como district for weaving.
<b>Description of good practice:</b>	<p>Orange Fiber was founded in 2014, thanks to crowdfunding. It produces yarns and fabrics from the waste of squeezed oranges. For some years the company has been collaborating with important fashion brands, Ferragamo, Marinella, H &amp; M. The Catania company Orange Fiber produces eco-sustainable yarns from agricultural waste. Orange Fiber's technology is based on the extraction of cellulose suitable for spinning from by-products of the citrus industry, which otherwise have to be disposed of at economic and environmental costs. Through a fully traced and transparent supply chain, by-products are transformed into fabrics for brands and designers who have chosen sustainability.</p> <p>This innovative process was patented in Italy in 2013 and extended to international PCT the following year. The first part of the transformation takes place in Sicily, where the cellulose is extracted, to be then sent to Spain, where a partner company transforms it into yarn, finally this returns to Italy, at a Como weaving mill, where it is transformed into the finished product: a high quality sustainable fabric for the fashion-luxury sector.</p>
<b>Impact (based on EU/national legislation, real data, impact on environment, education etc.)</b>	<p>The entire Orange Fiber supply chain complies with European regulations, as it produces 90% in Italy and a small piece in Spain. In this way, logistics are also reduced to a minimum.</p> <p>Orange Fiber does not exploit natural resources, but uses a by-product destined for disposal, thus reducing the</p>



	exploitation of land and water, the use of polluting pesticides and the impact of textile production on the planet.
<b>Sustainability, social, financial, innovative, technological benefits</b>	The extraction of cellulose from an industrial by-product that does not rival food, offers the possibility of satisfying the growing demand for this material for textile use, preserving natural resources, without producing industrial waste.
<b>Other comments/remarks</b>	-

## PRISMA

<b>Name of best practice</b>	<b>PRISMA: the home of technologies</b>
<b>Links</b>	<a href="https://www.prismaprato.it/">https://www.prismaprato.it/</a>
<b>Industrial sector within the F&amp;T industry and lifecycle position</b>	technological innovation, F&T business support.
<b>Location</b>	Prato - Tuscany - Italy
<b>Description of best practice:</b>	<p>In the fashion district of Prato, a structure called "Casa delle Tecnologie PRISMA - PRato Industrial SMart Accelerator" has been created to carry out technology transfer activities for fashion companies. Thanks to research projects with universities and research centers, consultancy and support of startups in the ICT sector, PRISMA exploits the innovative potential of emerging technologies - Internet of Things, Artificial Intelligence, Blockchain and 5G - to apply them to the textile-fashion and Made in Italy sector. PRISMA has activated a series of laboratories:</p> <ol style="list-style-type: none"> <li><i>Internet of Things (IoT) Lab</i> IoT helps companies collect data and gain real-time insights to monitor the entire processing system, both internal and external.</li> <li><i>Blockchain Lab (BC)</i> The BC Lab aims to support companies in the digital transformation, so that they consider BC applications as the most suitable tool to certify the quality of economic-productive phases and cycles, both for brand-oriented business models and for circular economy models.</li> <li><i>5G laboratory, advanced sensors and Artificial Intelligence (AI)</i> The laboratory supports companies on the use of the 5G network and artificial intelligence to connect multiple devices in order to process, monitor, analyze and diagnose production processes, through the use of modern software capable of learning and making predictions.</li> </ol>
<b>Impact (based on EU/national legislation,</b>	The technology transfer from the Research and Development Centre to the companies of the Prato district favours the



<b>Real data, impact on environment, education, etc.)</b>	transition of made in Italy manufacturing towards the new models of sustainable development required by the EU and the UN 2030 Agenda, protecting the quality and specificity of the Italian manufacturing system.
<b>Sustainability, social, financial, innovative, technological benefits</b>	PRISMA promotes competitiveness and employment in the fashion supply chain, through technological transfer of innovations from research and development centers to companies in the made in Italy textile-fashion sector with specific support and accompanying measures.
<b>Other comments/remarks</b>	-

## ◆ Netherlands

### Mud Jeans

<b>Name of best practice</b>	<b>Mud Jeans</b>
<b>Links</b>	<a href="https://mudjeans.eu/">https://mudjeans.eu/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion industry, product design and manufacturing
<b>Location</b>	Zandaam, Netherlands
<b>Description of good practice</b>	Mud Jeans is a circular denim brand that operates on a leasing system. Customers can lease a pair of jeans and return them at the end of their life cycle to be recycled into new denim products. They also use organic cotton and reduce their water and energy usage in production.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Mud Jeans reduces waste and resource consumption in the denim industry, and promotes a circular economy model.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Circular business model, use of organic cotton, reduced water and energy usage
<b>Other comments/remarks</b>	Other remarks: Mud Jeans has won multiple awards for their sustainable practices.



## W. Green

<b>Name of best practice</b>	<b>W. Green</b>
<b>Links</b>	<a href="https://www.wgreen.org/">https://www.wgreen.org/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion industry, sustainable production and retail
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	W.Green is a sustainable fashion store that offers clothing, accessories and home goods from a variety of ethical and eco-friendly brands. They also produce their own line of sustainable clothing.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	W.Green promotes sustainable and ethical fashion brands and production methods, and reduces waste and resource consumption in the industry.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Promotion of sustainable and ethical brands, reduced waste and resource consumption
<b>Other comments/remarks</b>	W.Green also hosts events and workshops to educate consumers on sustainable fashion.

## LENA - The Fashion Library

<b>Name of best practice</b>	<b>LENA - The Fashion Library</b>
<b>Links</b>	<a href="https://www.lena-library.com/">https://www.lena-library.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion industry, circular fashion and rental
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	LENA is a fashion library that allows customers to rent clothing from a variety of sustainable and ethical brands. They also offer workshops and events on sustainable fashion.





<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	LENA promotes circular fashion and reduces waste and resource consumption in the industry.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Circular business model, promotion of sustainable and ethical brands
<b>Other comments/remarks</b>	LENA has won multiple awards for their sustainable practices.

## O My Bag

<b>Name of best practice</b>	<b>O My Bag</b>
<b>Links</b>	<a href="https://omybag.nl/">https://omybag.nl/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion industry, sustainable production and retail
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	O My Bag is a sustainable leather goods brand that uses eco-friendly leather and production methods. They also prioritize ethical labor practices.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	O My Bag reduces waste and resource consumption in the leather industry, and promotes sustainable and ethical production methods.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Use of eco-friendly leather and production methods, ethical labor practices
<b>Other comments/remarks</b>	O My Bag has won multiple awards for their sustainable practices.

## MUD Studio

<b>Name of best practice</b>	<b>MUD Studio</b>
<b>Links</b>	<a href="https://www.mudstudio.nl/">https://www.mudstudio.nl/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion industry, circular fashion and upcycling
<b>Location</b>	Arnhem, Netherlands



<b>Description of good practice</b>	MUD Studio is a circular fashion studio that upcycles clothing and textiles into new products. They also offer workshops on upcycling and sustainable fashion.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	MUD Studio promotes circular fashion and reduces waste and resource consumption in the industry.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Circular business model, upcycling of clothing and textiles
<b>Other comments/remarks</b>	MUD Studio also collaborates with other sustainable fashion brands and organizations.

## Loop.alife

<b>Name of best practice</b>	<b>Loop.alife</b>
<b>Links</b>	<a href="https://www.loopalife.com/">https://www.loopalife.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable fashion, circular design
<b>Location</b>	Rotterdam, Netherlands
<b>Description of good practice</b>	Loop.alife is a sustainable fashion brand that creates circular clothing made from recycled and biodegradable materials. They also use sustainable packaging made from recycled paper and plant-based inks.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Loop.alife reduces waste and resource consumption in the fashion industry, and promotes circular design and sustainable packaging.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Use of recycled and biodegradable materials, sustainable packaging
<b>Other comments/remarks</b>	Loop.alife is a member of the Ellen MacArthur Foundation, which is dedicated to promoting a circular economy.

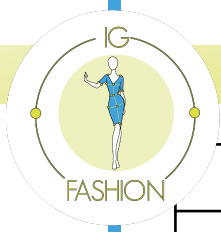


## Hoodlamb

<b>Name of best practice</b>	<b>Hoodlamb</b>
<b>Links</b>	<a href="https://hoodlamb.com/">https://hoodlamb.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable fashion, vegan materials
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	Hoodlamb is a sustainable fashion brand that creates clothing made from vegan materials such as hemp and organic cotton. They also use sustainable packaging made from recycled and biodegradable materials.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Hoodlamb reduces waste and resource consumption in the fashion industry, and promotes the use of vegan materials and sustainable packaging.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Use of vegan materials, sustainable packaging
<b>Other comments/remarks</b>	Hoodlamb is a member of the Hemp Industries Association, and also partners with environmental organizations to promote sustainability.

## Semai

<b>Name of best practice</b>	<b>Semai</b>
<b>Links</b>	<a href="https://semai.nl/">https://semai.nl/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable fashion, AI and machine learning
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	Semai is a sustainable fashion brand that uses AI and machine learning to create personalized clothing recommendations for their customers. They also use sustainable



	materials and ethical production methods.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Semai reduces waste and resource consumption in the fashion industry, and promotes the use of AI and sustainable materials.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Use of sustainable materials, AI and machine learning
<b>Other comments/remarks</b>	Semai has won multiple awards for their sustainable practices, and also collaborates with other sustainable fashion brands and organizations.

## Amsterdenim

<b>Name of best practice</b>	<b>Amsterdenim</b>
<b>Links</b>	<a href="https://www.amsterdenim.com/">https://www.amsterdenim.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable fashion, chatbot
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	Amsterdenim is a sustainable denim brand that uses a chatbot to help customers find the right fit and style of jeans. They also use sustainable materials and ethical production methods.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	Amsterdenim reduces waste and resource consumption in the fashion industry, and promotes the use of chatbots and sustainable materials.
<b>Sustainability, social, financial, innovative, technological benefits</b>	Use of sustainable materials, chatbot
<b>Other comments/remarks</b>	Amsterdenim also offers a repair service for their jeans, and collaborates with other sustainable fashion brands and organizations.



## The Fabricant

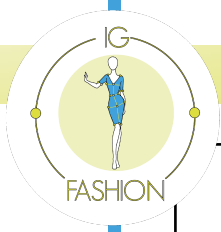
<b>Name of best practice</b>	<b>The Fabricant</b>
<b>Links</b>	<a href="https://www.thefabricant.com/">https://www.thefabricant.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion & Technology
<b>Location</b>	Amsterdam, Netherlands
<b>Description of good practice</b>	The Fabricant is a digital fashion house that creates entirely virtual fashion designs and experiences. They use advanced 3D rendering techniques and motion capture technology to create photorealistic digital clothing that can be worn in virtual environments. Their designs are sustainable and have no environmental impact as they do not require any physical production or shipping.
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	The Fabricant's practices have a positive impact on the environment as they do not require any materials or shipping. They also have a positive impact on education by showcasing the possibilities of virtual fashion design and promoting sustainable fashion practices.
<b>Sustainability, social, financial, innovative, technological benefits</b>	The Fabricant's practices are sustainable and have no environmental impact. They also promote innovative and technological advancements in fashion design. Their virtual fashion designs also have social benefits by promoting inclusivity and diversity.
<b>Other comments/remarks</b>	he Fabricant has collaborated with various fashion brands and designers to showcase the potential of digital fashion design. They have won several awards for their innovative practices and have been recognized as a game-changer in the fashion industry.



## ◆ Romania

### PUR Clothing

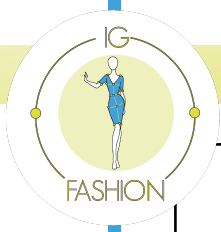
<b>Name of best practice</b>	<b>PUR Clothing - Waste minimization</b>
<b>Links</b>	<a href="https://www.pur.clothing/about">https://www.pur.clothing/about</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion retail and design; Waste minimization
<b>Location</b>	Romania (HQ in Timisoara, but other stores also located in Cluj-Napoca, Sibiu, Brasov and Bucharest)
<b>Description of good practice</b>	<p>Pur. clothing is a slow clothing brand that seeks to alter how consumers view clothing and what they actually need. The brand's creator, Roxana Puriş, makes cozy, adaptable clothing items with individuality that enhance the person wearing them and, last but not least, react to present demands or issues.</p> <p>Creators have designed, executed, and worked together on a number of projects with the goal of increasing awareness of the significance of waste reduction in order to lessen the amount of waste produced by tailoring and to give a new life to the materials that can no longer be used for creating clothes.</p> <p>These include:</p> <ul style="list-style-type: none"> <li>- creating the sustainable t-shirt, a statement piece made of rectangular pieces of knitwear;</li> <li>- donating the 100% cotton pieces to lelesânziene, an NGO that aims to educate girls from underprivileged backgrounds about menstruation and the production of reusable absorbent pads that they offer;</li> <li>- workshops and creative kits for pur.kids children, through which they learn to make their own textile items;</li> <li>- Giving very small material scraps to fitness facilities for stuffing punching bags, or to bean bag manufacturers;</li> <li>- reusing the center pieces of flared textiles for padding the shoulders of the "linen big shoulder dress";</li> <li>- incorporating some of the very small remnants of 100% cotton</li> </ul>



	into a fertile soil created by Grădinescu Timișoara for an urban project called "Urban Gardens"
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	No numerical data was found, but according to their description, the textiles are being used at their maximum potential, and waste is minimized through a combination of circular practices.
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainable benefits:</b> The minimization of textile waste, supporting the circular economy model, applying circular solutions for waste minimization</p> <p><b>Social benefits:</b> Involving customers in the design process, supporting local NGOs</p> <p><b>Financial/economical benefits:</b> Supporting circular economy by donating waste to other companies that can reuse it</p> <p><b>Innovation:</b> Zero waste patterns to create t-shirt from scraps</p>
<b>Other comments/remarks</b>	/

## Katty Fashion

<b>Name of best practice</b>	<b>Katty Fashion - Digital design</b>
<b>Links</b>	<a href="https://katty-fashion.com/">https://katty-fashion.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion manufacturing
<b>Location</b>	Iasi, Romania
<b>Description of good practice</b>	<p>Instead of developing patterns and fit using vague body related information, they develop styles by transforming and manipulating features of pre-fitted basic shapes (blocks and templates). This approach allows them to not only be more efficient and waste less in the process but also ensures that garments always fit perfectly in a consistent and reliable manner.</p> <p>In order to implement the protocol, they require the following information:</p>

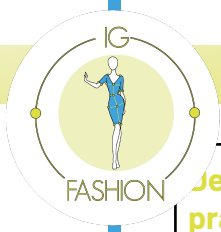


	<ul style="list-style-type: none"> <li>- Body measurements of the representative of your target group.</li> <li>- Overall fit intent i.e. how the garment is meant to fit the customer: fitted, looser, etc..</li> <li>- If available, a set of basic shapes (blocks and/or templates). If there are none, they can be developed by their team, according to specific measurements; or use their standard pre-fitted shapes. Please note that there will be a surcharge for the use of the in-house standard fit.</li> <li>- A sizing table.</li> </ul>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	On average, 50% less samples. This is not only 50% less time and cost but also 50% less waste – waste that, whenever technologically and logistically possible, we recycle.
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainability benefits:</b> A significant reduction in waste and transportation emissions due to reducing the samples created, as well as waste during production, through selecting the most efficient shapes</p> <p><b>Financial benefits:</b> The client's production costs decrease and lead times are decreased</p> <p><b>Technological benefits:</b> The use of 3D sampling is a highly-innovative cutting-edge technology used lately in the fashion industry</p>
<b>Other comments/remarks</b>	/

## Ioana Ciolacu

<b>Name of best practice</b>	<b>Ioana Ciolacu - Ethical trade</b>
<b>Links</b>	<a href="https://www.ioanaciolacu.com/">https://www.ioanaciolacu.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable fashion manufacturing, Ethical and sustainable sourcing
<b>Location</b>	Bucharest, Romania





<p><b>Description of good practice</b></p>	<p>They purchase fabrics and production services from roughly 15 suppliers, which are located in Europe. Their supply chain is predominantly composed of local small workshops that specialize in specific techniques and processes. All of their products are manufactured locally under good conditions, following a ban on child labor, forced labor, discrimination and in compliance with environmental legislation. They personally keep an eye on all service providers to make sure that local, ethical business practices, safe and fair working conditions, and the honest production of goods is supported.</p> <p><b>Materials:</b> they are the first fur-free retailer in Romania, and they source mostly sustainable material</p> <p><b>Made-to-order:</b> Production is done at minimum stock and on a made-to-order basis</p> <p><b>Recycling:</b> A portion of the leftover fabric from sewing Ioana Ciolacu clothing is delivered to the Romanian town of Calarasi to be utilized in the construction of traditional rag rugs.</p> <p><b>Repair:</b> All customers benefit from the free repair service for garments affected by wear-and-tear</p>
<p><b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b></p>	<p>No numerical data found, but according to description, the amount of waste is reduced, and the impact is kept at a minimum through local and on-demand production</p>
<p><b>Sustainability, social, financial, innovative, technological benefits</b></p>	<p><b>Sustainability benefits:</b> Waste is minimized through production of made-to-order garments, selecting local and sustainable suppliers which are closely monitored</p> <p><b>Economical benefits:</b> Supporting local manufacturers and enriching the local economy</p> <p><b>Social benefits:</b> Job creation through the support of local manufacturers, ensuring that all workers are treated fairly</p>
<p><b>Other comments/remarks</b></p>	<p>/</p>

## OCRU

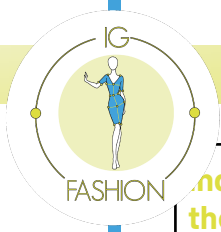
<p><b>Name of best practice</b></p>	<p><b>OCRU - Using deadstock to create multiple-use pieces</b></p>
<p><b>Links</b></p>	<p><a href="https://www.dichisar.ro/ocrustudio/despre">https://www.dichisar.ro/ocrustudio/despre</a></p>



<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Design for longevity, sustainable sourcing
<b>Location</b>	Timisoara, Romania
<b>Description of good practice</b>	<p>The products from OCRU are made from deadstock fabrics with minimalist design ethics, focusing on how to minimize waste throughout the entire production process. All products are produced locally.</p> <p>All their garments can be worn in multiple ways, have no size or gender, and are designed with innovative zero waste pattern techniques. Most of the pieces can be mixed and matched in different styles, being designed with simple lines that fit many body shapes and offer adjustment possibilities on the same article in order to fit the body in a harmonious way.</p> <p>Due to the nature of their sourcing, the pieces produced are very limited editions.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	No numerical data found, but unused textiles are being repurposed, reducing the amount of waste from the industry, as well as decreasing the impact of production through sourcing already existing materials.
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainability benefits:</b> Reuse of deadstock material and zero waste patterns are minimizing impact and waste</p> <p><b>Financial benefits:</b> Lower costs associated with using deadstock materials</p> <p><b>Innovation benefits:</b> The minimalist, adjustable and multi-purpose, one-of-a-kind design of the products contribute to creating emotional attachment and decreasing the need for buying multiple pieces</p>
<b>Other comments/remarks</b>	/

## Wear me with flowers

<b>Name of best practice</b>	<b>Poarta-ma cu flori ("Wear me with flowers") - Natural textile dyer</b>
<b>Links</b>	<a href="https://www.instagram.com/poarta_ma_cu_flori/?hl=en">https://www.instagram.com/poarta_ma_cu_flori/?hl=en</a>



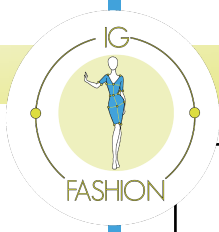
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Sustainable textile dyeing & printing
<b>Location</b>	Borlesti, Piatra-Neamt county, Romania
<b>Description of good practice</b>	<p>Elena Stanciu makes unique clothing products, from natural materials, dyed naturally using traditional Romanian techniques. Then, the dyed materials are cut and sewn, to create the finished product, specific to each individual. Linen dresses, natural silk, wool, fusible cloth curtains, ribbons, silk scarves, children's clothes or textile bags, all are carefully created under the signature "Wear me with flowers".</p> <p>Natural fabric is the main element in this whole process. It is cleaned by boiling of the chemical compounds that were used in its manufacture. Once this first step is done, the flowers, leaves or even roots that have dyeing properties are picked and applied to the fabric depending on the technique we want to use. By steaming, boiling directly in water or immersing the fabric in water already colored with pigment, the final product is obtained.</p> <p>They also create custom natural prints on clothing that requires "a new life", brought in by her customers.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	No numerical data found, but through natural dyeing, a significant amount of chemicals and wastewater are avoided
<b>Sustainability, social, financial, innovative, technological benefits</b>	<b>Sustainability benefits:</b> The impact on the environment is significantly reduced through avoiding the harsh chemicals used in textile dyeing and finishing, as well as not creating any toxic wastewater in the process.
<b>Other comments/remarks</b>	/

## DRESSINGZ

<b>Name of best practice</b>	<b>DRESSINGZ - Luxury reseller</b>
<b>Links</b>	<a href="https://www.dressingz.com/en/">https://www.dressingz.com/en/</a>



<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Circular business model
<b>Location</b>	Romania
<b>Description of good practice</b>	<p>DRESSINGZ offers its community of users the opportunity to sell, through an easy and safe process, the clothes they no longer wear. At the same time, it offers lovers of premium brands the chance to buy pre-owned luxury items, authenticated by experts, at a price up to 80% lower than the retail price. A gratifying experience for users, and at the same time important for the planet.</p> <p>DRESSINGZ wants to make the social mission a modus operandi, proposing in the long term to donate 10% of profits to environmental causes. Although at the beginning of the journey, the projects they develop already have a social footprint - an example is the celebrity pop-up store "RELOVED by You". The best dressed people in Romania - stars, stylists, influencers or designers have already created user accounts and offer for sale items from their personal wardrobes.</p> <p>All products on the platform are checked by a team of specialists with experience in luxury brands. Also, DRESSINGZ concluded an external partnership, with the Luxury Appraisal &amp; Authentication company from the United States, to verify the authenticity of luxury products uploaded by users.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	No numerical data was found but reselling second-hand items has a strong impact in decreasing waste and pollution from the industry.
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainability benefits:</b> Encouraging reuse of items is very beneficial for the environment, as already existing items are valorised to their maximum potential, and not wasted. This also reduces the need to source new materials and produce new products, which saves a lot of emissions.</p> <p><b>Financial benefits:</b> The people that want to get rid of their old item have a secured way of getting money for their objects, as well as clients who would like to buy luxury goods can do so at a discounted price.</p>



	<b>Social benefits:</b> Through involving well-known Romanian people, DRESSINGZ is making reselling popular, and “trendy”. This movement is not only popularized, but brought to mainstream, making it a part of a new society’s sustainable habits.
<b>Other comments/remarks</b>	/

## ONEShirt

<b>Name of best practice</b>	<b>ONEShirt - Upcycled fashion with a social purpose</b>
<b>Links</b>	<a href="https://oneshirt.eu/">https://oneshirt.eu/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Upcycling
<b>Location</b>	Timisoara, Romania
<b>Description of good practice</b>	<p>The ONE project was founded with the explicit intention of reducing textile consumption and creating something new and timeless—the ONE shirt—from textile waste and clothing items users wish to keep.</p> <p>ONE is a social enterprise that aims to communicate about people, with people, and the environment they live in. It does this by emphasizing the creation of flexible and adaptive jobs, the reuse and repurposing of textiles, and the creation of original stories. For socially vulnerable groups of people who have a history of residing in public residential facilities, ONEshirt offers support and flexible employment opportunities.</p> <p>ONE offers 3 types of services: Collection point for unused clothing and textiles, where users can just donate items they don't need. Creating “new pieces” from the donations received. Creating custom pieces on request for clients who have brought their own textiles they would like to upcycle.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the</b>	No numerical data was found, but the impact is reduced waste and increased employability of socially vulnerable groups



<b>Environment, education etc.)</b>	
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainability benefits:</b> Reducing textile waste through upcycling, providing a point for textile collection in the community, not contributing to production-related emissions through local production and not using any other fabrics except donations they received</p> <p><b>Financial benefits:</b> Reusing textiles that have been donated significantly reduces the costs of production</p> <p><b>Social benefits:</b> Creating jobs for marginalized and vulnerable social groups</p>
<b>Other comments/remarks</b>	/

## Studio Heijne

<b>Name of best practice</b>	<b>Studio Heijne - Customized fashion</b>
<b>Links</b>	<a href="https://studioheijne.com/">https://studioheijne.com/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion retail - Design for emotional attachment
<b>Location</b>	Stockholm, Sweden
<b>Description of good practice</b>	<p>The concept of Studio Heijne starts with the idea that clothes should be created for each individual's body. Therefore, they offer the customer the option to use their own measurements, as well as customize the item they want to buy. Then, the item is produced on demand.</p> <p>Through their website, the customer can make a series of alterations to each garment in terms of color, fit and length. These are generated in real-time on a model. Of course, the customizations are limited by the platform to what makes sense to them, as a company. They produce on demand only.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the environment, education etc.)</b>	No numerical data found, but according to description, pollution associated with production is decreased, as well as reduced rates of consumption



<p><b>Sustainability, social, financial, innovative, technological benefits</b></p>	<p><b>Sustainability benefits:</b> Emissions related to production and consumption are significantly decreased due to on-demand production</p> <p><b>Financial benefits:</b> Costs associated with production are decreased due to on-demand production model</p> <p><b>Social benefits:</b> Impact on consumer behavior - customizable clothing has a big potential to create emotional value for the customer, resulting in a better care of the items and a longer lifespan</p> <p><b>Technological benefits:</b> Changes that a user might make are shown in real-time on the platform directly, making the customer experience very easy</p>
<p><b>Other comments/remarks</b></p>	<p>/</p>

## Napapijri

<p><b>Name of best practice</b></p>	<p><b>Napapijri Circular Series</b></p>
<p><b>Links</b></p>	<p><a href="https://www.econyl.com/blog/case-studies-fashion/napapijri-reveals-infinity-the-first-circular-100-recyclable-jacket/">https://www.econyl.com/blog/case-studies-fashion/napapijri-reveals-infinity-the-first-circular-100-recyclable-jacket/</a></p>
<p><b>Industry sector within the f&amp;t industry and position in the life cycle</b></p>	<p>Design for disassembly</p>
<p><b>Location</b></p>	<p>Aosa, Italy (retails worldwide)</p>
<p><b>Description of good practice</b></p>	<p>The primary material innovation of the Circular Series is its mono-material construction, which uses ECONYL® Regenerated Nylon for the fabric and Nylon 6 for the filling and trims. The Circular Series may enter the recycling machine in its current form thanks to the use of a single material, and since the fibers are upcycled without losing any of their original characteristics or quality, ECONYL® Regenerated Nylon can be recycled repeatedly. Using Nylon 6, Napapijri built the Circular Series, which allows for endless repurposing and recycling of the clothing. The brand has also implemented a take-back program for their products.</p>
<p><b>Impact (based on EU legislation/National legislation, real data,</b></p>	<p>This practice has a Gold Cradle-to-Cradle certification</p>



<b>Impact on the environment, education etc.)</b>	
<b>Sustainability, social, financial, innovative, technological benefits</b>	<p><b>Sustainability benefits:</b> Designing with regenerated mono-material reduces the impact on the environment by not using raw materials at all. The product is also fully recyclable, which makes for an infinite loop that saves a lot of energy and resources in the process.</p> <p><b>Financial benefits:</b> Recycling already existing products in an infinite loop will significantly reduce production costs, as no new materials need to be purchased</p> <p><b>Innovation:</b> Using a design for disassembly technique, an infinitely recyclable, but also practical and stylish item is created</p>
<b>Other comments/remarks</b>	The process of recycling still uses a lot of energy to operate the machines, which means that there are still some emissions being produced, although significantly less

## GANNI

<b>Name of best practice</b>	<b>GANNI Repeat</b>
<b>Links</b>	<a href="https://repeat.ganni.com/dk/en/">https://repeat.ganni.com/dk/en/</a>
<b>Industry sector within the f&amp;t industry and position in the life cycle</b>	Fashion retail - rental; circular business models
<b>Location</b>	Copenhagen, Denmark
<b>Description of good practice</b>	<p>GANNI Repeat is the built-in service platform of the brand, that allows users to rent pieces from past collections directly from them, for one, two or three weeks.</p> <p>On this platform, exclusive pieces can also be found, made from reworked items and unused fabrics from previous collections.</p>
<b>Impact (based on EU legislation/National legislation, real data, impact on the</b>	No numerical data was found





<p>environment, education etc.)</p>	
<p><b>Sustainability, social, financial, innovative, technological benefits</b></p>	<p><b>Environmental benefits:</b> Customers reconsider how they shop and use their wardrobe by renting garments from GANNI Repeat, which reduces waste. The procedure enables GANNI to stop carbon emissions from reprocessing materials by recreating fabrics into new items. The environmental objectives to combat waste, pollution, climate change, and biodiversity can be greatly helped by these models.</p> <p><b>Financial benefits:</b> Future Market Insights projects that the market for online garment rentals will develop at an 11% compound annual growth rate (CAGR) from now until 2031, reaching a value of USD 1.8 billion. By using recycled materials and unique design techniques, GANNI has been able to improve tailoring while providing new revenue streams for each product. This has allowed for the creation of high-quality items at the same cost.</p> <p><b>User benefits:</b> Every piece of apparel manufactured from reused textiles becomes a one-of-a-kind item for the wearer, appealing to younger generations. Each item comes with a unique tag that purchasers may scan to get details about the garment's history and design. The user should not worry about the aftercare because cleaning and insurance are included in the total rental fee.</p>
<p><b>Other comments/remarks</b></p>	<p>GANNI also produces ready-to-wear collections that retail worldwide</p>



## 6. GENERAL CONCLUSIONS

More and more of the European apparel and textile sector companies chose sustainability in addition to their top-quality, to stand out in the global market.

Pushed by the companies' values, the choice of sustainability meets both demands from responsible consumers and the European legal requirements, the most stringent in the world. True sustainability comes with great efforts, costs, investments in knowledge, research and innovation and chiefly with collaboration along the whole value chain.

The European apparel and textile sector work on Sustainable Businesses in:

**Chemicals Policy:** *application of EU regulations REACH & CLP, BPR; level playing field*

Chemicals are an essential component in textile and apparel production as well as any other products manufacturing. They are used during different stages of the industrial process, from fibers' washing to clothes' dyeing, from printing to finishing of textiles. They can also be added to the finished product to obtain special characteristics, such as antibacterial properties in sportswear, enhance duration in filters, fire-resistance for firefighters' suits, etc.. In the case of technical textiles and personal protective equipment, chemicals play a crucial role in providing special functionalities and enabling highperformances.

Europe is the continent where the rules on chemicals are the most rigorous. The main legislation is the REACH Regulation, which addresses the collection and assessment of information on the properties and hazards of substances. It also sets restrictions to the use of chemicals in process and products. The purpose of REACH is to ensure a high level of protection of human health and the environment [...] while enhancing competitiveness and innovation.

The companies of the textile value chain are affected by REACH as "downstream users", as they don't manufacture but use chemicals in industrial activities, either on their own or in a mixture. Companies are identified as producers of articles because they incorporate substances or mixtures into or onto materials to form an article.

REACH imposes a set of obligations on downstream users. Textile companies have to comply with a number of provisions including, limitation in the use of substances, exchange of information across the value chain, registration of substances (occasionally), communication to customers.

**Circular Economy:** *opportunities in materials re-use, recycling, resources efficiency, waste management*

An economy is circular when the value of products, materials and resources is kept in, for as long as possible. The generation of waste is reduced, and recycling is a reality. For



the textile sector, in particular, circular economy also implies new ways of designing, making, producing and choosing products.

The European textile industry has been pioneering new types of sustainable products and re-using different types of materials, such as jeans or plastic bottles. These examples are the avant-garde of circular textile.

**Industrial emissions, energy and climate change:** *CO2 emissions, energy efficiency, defining Best Available Technologies (BREF)*

The European Best Available Techniques reference documents (BREFs) provide a description of industrial processes, their respective operating conditions and emission rates. The European Union Member States refer to BREF to authorize and monitor industrial manufacturing and the related emission in the environment.

The Emissions Trading System (ETS) is a cornerstone of the EU's policy to combat climate change and is a key tool for reducing greenhouse gas emissions. The European textile and apparel companies work for correct ETS implementation in finishing activities. Energy efficiency is of critical importance for the textile and clothing industry and to reduce CO2 emissions.

**Sustainable supply chains:** *due diligence, traceability, harmonise certifications, product environmental footprint*

The European textile and apparel companies support relevant business initiatives for due diligence and participate in the efforts of the European Institutions and international organisations, to improve sustainability and promote responsible business conducts in the European and global garment supply chain.

Fair and effective solutions to global issues can only be delivered by collaborating to build up on the achievements from successful voluntary initiatives, respecting the diversity along the value chain.

The European textile and apparel companies work to enable effective voluntary traceability, facilitate transparency and consumer's access to information which ultimately help people to choose sustainable products.

**“Circularity needs design of garments for recyclability, with recyclability or designed for longevity”**

Many of today's products are not yet designed with durability/longevity or recycling in mind. They often consist of mixed fibers and multi-material compositions that are hard to disassemble with current technologies. Many designers still lack the tools to design a circular textile system. Leading Fashion representative organizations encourage fashion industry leaders to train their design and product development teams to create products that are made for longevity, durability, disassembly and recyclability and to increase the share of recycled fibers in their products. Retailers should also increase their efforts to collect end-of-life garments. Based on current technologies, recycling is more difficult when it comes to blends, particularly blends of synthetic and cellulose



ers. Buyers and designers have a crucial role in every textile and clothing supply chain. They select the materials, the finishes, the products and its haberdashery and they define the target group for the products. In a circular supply chain, their role will become even more difficult and complex, as they also have to take into account the end-of-life strategy for the product and to look into the use of secondary materials. In some sense they can be seen as the circular chain manager. However, many designers are lacking the technical background to be able to fulfill that role. In the future they have to be assisted by a more technologically skilled person or an expert system. Together they will have to manage the circular supply chain in textiles and clothing. One of their most important roles is to connect stakeholders in order to optimize the whole chain with respect to the reduction of the environmental impact. Although there is not one correct Design manual for the textile and clothing chain, important aspects are given by the specification of the requirements of the end-product in terms of service life, mechanical properties, physical properties and aesthetical properties. These specifications define:

- Selection of materials: type, virgin or recycled, mono material or blend
- Yarn: Yarn count, twined yarns, monofilament or multifilament
  
- Construction: Woven and weaving techniques, Knitted and types of knits, Non-woven and bonding method
- Textile finishing: Type of dyeing, printing, finishing (mechanical, chemical); coating, lamination
- Production of end-product: combination of fabrics/materials or accessories, assembly method, Haberdashery/trims
- Use, Care method(s), Expected time of service, instructions, way of disposal

All these aspects are interrelated to each other and all have to be dealt with in a circular system. As designers might not be aware of some of these aspects, it might be difficult to design a product suitable for recycling at the end of the functional life of the product.



## 7. SUGGESTIONS

- I. Support concerned spinning mill structures in setting up partnerships outside traditional value chains,
- II. Support investments and Research & Innovation pilot actions,
- III. Facilitate business to invest in technologies and business models while avoiding additional costs on waste processing which would block investments.
- IV. European Authorities shall consider options to facilitate setting up recycling facilities and of new business models. This shall consider and value the local availability of textiles
- V. Manufacturing, the current research efforts on mechanical and chemical recycling, the investment plans of companies in both the textiles and chemical value chains.
- VI. Define agreed criteria to support collaboration for Green Public Procurement to bridge a growing demand and offer. Procurers shall be empowered to sustain higher costs of circularity in textiles products due to higher complexity
- VII. Promote and offer incentives across all European States for circular procurement notably to choose high quality and durability of procured products, reward low-impact manufacturing processes, favour products designed with recycled or biobased/biodegradable materials or are designed for recycling or designed for longevity (i.e. durability)
- VIII. Aggregate public procurement demands with request for circularity of textiles, this allows for orders to be placed in larger volumes which enable scale economies and lower costs
- IX. Support EU regions, cities and governments in pursuing a common strategy while considering:
  - i) manufacturing options of how textiles can be made;
  - ii) options to treat textile products after the end of life
- X. Promote training on textiles recyclability and low impact materials and materials made from renewable sources
- XI. Launch large scale action to educate designers and consumers on circularity in textiles.
- XII. Promote responsible business practices which include circularity for instance by reward low-impact manufacturing processes, favour products designed



with recycled or biodegradable materials or are designed for recycling or designed for longevity (i.e. durability)

- XIII. Promote Research and Innovation to support recyclability of blended materials and mix of raw materials which can facilitate upcycling and recyclability; also engaging with textile machinery manufacturers
- XIV. Design effective mechanisms which drastically improve market surveillance and, deter systematic free-riding behaviour of business which are non-compliant with EU regulation.
- XV. Support the coordination between Market Surveillance Authorities, customs, ECHA forum and other relevant EU authorities
- XVI. Coordinate VAT reduction for sustainable products across EU Member States
- XVII. Support roll out and implementation of a global transparency and traceability standard which facilitate the smooth exchange of data across Business, notably the SMEs, and public operators.
- XVIII. Support the creation of Material Pools in which recycled materials can flow in and which can be used to supply all sorts of industry value chains
- XIX. Thoroughly review the EU, national and local legislation related to handling of industrial textiles wastes; identify un-necessary burdens, overlapping and quantify related costs for the business
- XX. Harmonise legislation related to waste across all the EU
- XXI. Support strategic actions to accelerate the uptake of traceability solutions to address present and future societal/ business needs.
- XXII. Ensure interoperability in data exchange and low burdens for SMEs in traceability solutions
- XXIII. Support by private and public buyers in using robust certification systems confirming recycled materials in textiles.
- XXIV. Promote consumers' and buyers' understanding of robust certification systems.
- XXV. Revise waste framework criteria and procedures across the EU Members States and local area, find best practices, remove un-necessary burdens which were designed in a linear economy model and may no longer be fit for purpose.
- XXVI. Facilitate the use of Life Cycle Assessment (LCA) and keep LCA calculation realistic and at cost and organisational range of SMEs.



- XXVII. Educate and inform consumers to support a higher demand for more sustainable processes and appropriate prices
- XXVIII. Fact-based analysis of labelling and actual impact in consumer decision making
- XXIX. Tailor policy measures based on the size of the business while ensuring level playing field in the market
- XXX. Support access to markets and export for SMEs also considering their efforts on sustainability and potential influence in global regions.
- XXXI. Launch of strategic research and innovation actions to remove critical technology bottlenecks for large-scale industry adoption of circularity.
- XXXII. Facilitate investments, especially by SMEs, in piloting and early-market adoption of innovative enabling technologies and business models, also making use of regional funding instruments
- XXXIII. Avoid additional costs and remove burdens which would block companies' investment plan on circularity
- XXXIV. Create scale economies to reduce testing costs.
- XXXV. For EPRs: consider lessons learned from existing EPR schemes, applicability in case of on-line selling, facts-based assessment of what issues may be solved by EPR schemes versus other opportunities.
- XXXVI. For Eco-design: consider progress of technology for chemical recycling, enforceability in case of products made outside EU jurisdictions.
- XXXVII. For separate waste collection by end 2024: harmonise solutions across all EU Member States considering local specificities and avoiding proliferation of un-coherent and complex solutions
- XXXVIII. Review of needs related to fibre composition and marking



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