



Women co-create sustainable fashion garments

# **EDUCATOR'S** HANDBOOK















# CO-DESIGN, CIRCULARITY, MATERIALS and DESIGN

### **Table of Contents**

- Learning Objectives
- Introduction
- Introduction to Regenerative design englobing Circular Economy and Eco-Social design and enterprises
- Circular fashion Design: Use of resources, waste elimination, life-cycle analysis and impact measurement (environmental and social), ecological footprint
- Sustainable Materials to use, Fashion trends identification and design techniques.
- Integration of the student's local and cultural heritage in the product design
- Case Study: Wear Your Origins
- Bibliography
- Resources and Videos

## Learning Objectives

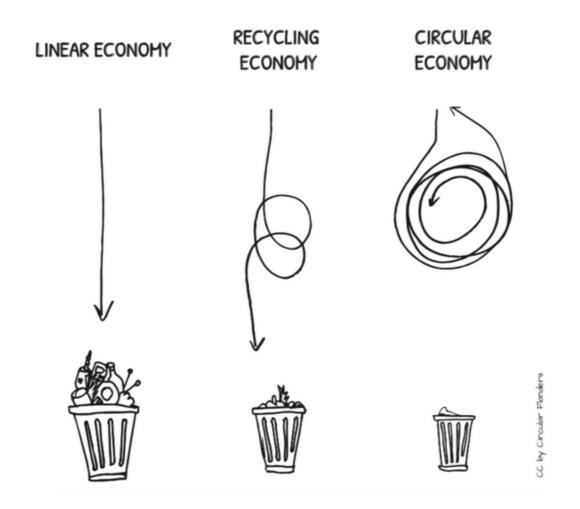
- Define what is Circular Fashion? Following a Comparison of Circular and Linear Fashion.
- Analyse garments' design that come from renewable materials resources. Define garment Value Chain and Its Environmental Impact.
- Analyse how waste elimination contributes to a Circular Fashion Industry and how to achieve Waste Elimination.
- Deploy the methodology of a Life-Cycle Analysis in phases of Material Recovery, to Materials Manufacture, to Product Manufacture, to Transport and Distribution to Product Use and to Material Recovery
- Acknowledge Environmental and Social Impact
- Identify the factors that the fashion industry has a negative impact on the Ecological Footprint. (mainExample: Waste of Water for fabric production, water pollution from dyeing processes and microfibre pollution)
- Identify Design Innovation methods and techniques: Think of Culture as a Resource.
- Definition of Cultural Heritage Symbols of local heritage: Inspires designs in Textiles, Fashion.
- Definition of factors that make the product unique, valuable and longlasting.



### Introduction

The aim of this section is to present to the trainers the roots of Regenerative Design and highlight the comparison of the Linear Fashion Model and the Circular one. Historical Background, Definitions and related concepts, Purpose of a circular economy, Indicators of a circular economy. Furthermore, the Co-Design importance-collaboration and Present the Materials Impact on the environment. Additionally, it will present all the Sustainable Materials and Options which are going to be followed by an analysis for each one of them: Alternative and Circular Materials, Biodegradable Materials, Deadstock Materials, Organic Materials, etc.

Furthermore, this section will examine the concept of thinking of culture as a resource and how heritage inspires fashion and circularity. This will be discovered by a series of design features influenced by cultures throughout the years.



Co-funded by the European Union

# Introduction to Regenerative design, englobing Circular Economy and Eco-Social design and enterprises.

The need for regenerative design today is crucial to go further. Sustainability is not enough today, therefore the need to actively promote a multi-species approach in which humans and nonhumans co-habit holistically is continuously increasing.

#### The Fundamental Aspects of Regenerative Design which are listed below:

- 1. Achieve net-positive impacts for ecology, health and society.
- 2. Adapt its concepts for all project types (including existing buildings) and sizes.
- 3. Generate decisions that are metric based and driven by unique site data.
- 4. Produce projects that continuously evolve and renew.
- 5. Incorporate and build upon existing paradigms, including:
  - Triple net zero (energy, water and waste).
  - Carbon balancing (embodied and operational carbon).
  - Health and wellness design.
  - Materials transparency.
  - · Resiliency.
  - Social equity.
- 6. Engage and involve the community on a continuous basis. (Regenerative design, n.d)

Another Section of the Regenerative Design is the dedication towards Conservation versin comparison to preservation. Humans are part of the Natural Ecosystems. The need of Empowerment of Local Communities by Regenerative Design` will create services, designs, systems, goods for an inclusive world consisting of humans and

more-than-humans. Moreover, the regeneration has to be presented in technical cycles (Reuse, repair, renewal, refurbishment, remanufacture, maintenance, and upgrading are life-extension strategies for products). Generally the word that could characterise all of the previously-mentioned is "Re-fashion".



# Introduction to Regenerative design englobing Circular Economy and Eco-Social design and enterprises

The four key advantages of Circular Fashion Economy and these are mainly achieved by the:

- Reduced dependency on imported raw materials.
- · Creation of eco-friendly industries and jobs.
- Eco-friendly brands benefit from a better public image.
- Reduction in environmental damage caused by resource extraction.

Another aspect of Regenerative design is realised with Eco-Social Design. This is not only about more eco-efficient products and services, but about social-ecological transformations towards future-viable modes of production and living – for sustainable and solidary economies as ecological livelihoods. Based on these general aims and values the design or facilitation of relations, processes, spaces, objects, services and cross-media communication is understood as an integrated task.



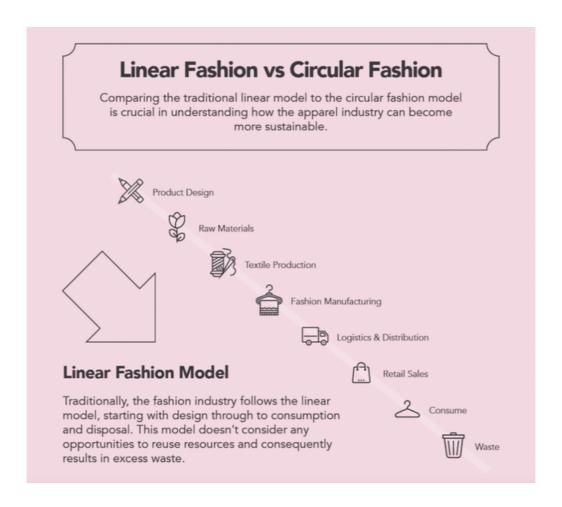
(You are being redirected..., 2020)

# Use of resources, waste elimination, life-cycle analysis and impact measurement (environmental and social), ecological footprint

The comparison of the two most applied Fashion models as an approach on how to use the material in the fashion industry value chain, is showcasing the positive impact of the circular fashion model among different phases of the fashion design value chain.

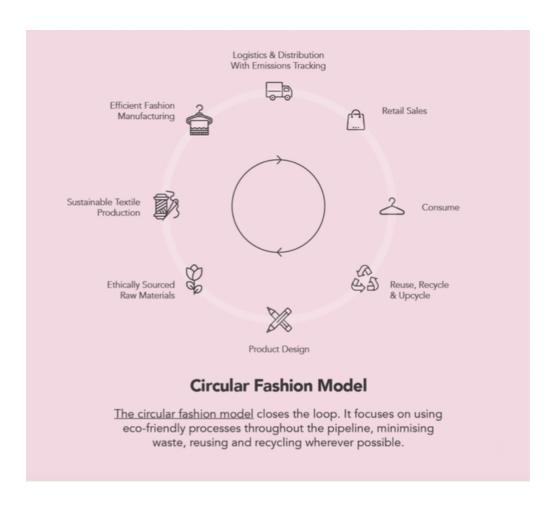
#### The Linear Fashion model:

Clothing design and production processes are full of opportunities to minimise waste, extend the life of products, and support recycling down the road. But in a linear system, the apparel is not designed to be recycled. This approach leads to unfair working conditions for garment workers, waste as there are millions of tons of textile waste every year.



#### The Circular Fashion Model:

In the perfect circular economy, no waste escapes, and no new materials are needed. Everything is created from responsibly sourced existing materials, produced with care for people and the planet, designed to minimize waste, built to last, and eventually, fully recycled. A circular fashion system has a positive impact every step of the way.



(Fashion Brands Transition From Linear to a Circular Economy, 2022)

The considerations to be done are about Rethink, Redesign, Repair and take a slow fashion approach.

Re-thinking the supply chain is a great way for brands and companies to start implementing change to create sustainable fashion. 'Rethinking' offers the opportunity to examine the way that the materials and fabrics are created and how the factories they support are managing the waste they inevitably create. For example: are these textile factories conscious and accountable for the waste that they create? Are off-cuts and scraps being recycled? Is the dyeing process using water efficiently?

This is the first step in creating sustainable designs that reduce waste; taking accountability for the problem. An example of a brand taking accountability is designer Eileen Fisher, who has adopted values such as 'circular by design', 'horizon 2030' and 'here today, here tomorrow'. These values all centre around the idea that clothing should be manufactured in ways that reduce the severe negative impact textile production has on the environment, while also ensuring that their garments have longevity and high quality. In addition to this, Eileen Fisher also has a second hand item resell program called Renew. Lightly used garments in good condition are collected, and re-sold. This initiative proves that clothing can, and should be built to last. As for items that have seen better days, they are not tossed away. Instead, as a part of their 'Waste No More' program they are deconstructed and used to make brand new items such as accessories or home decor.

Redesign is the next step to achieving a reduction of textile waste is creating clothing designs with waste reduction as a priority. Fast fashion relies on mass production and ridiculously short turn around times. This often leads to companies taking shortcuts. When mass producing clothing, there is a significant amount of off-cuts and scrap material that is left behind. Not to mention the thousands of pieces that are destroyed before even making it to the stores due to being created incorrectly. If brands take the time to consider things such as: how can this be cut to use as much fabric as possible, or "where else can we send our offcuts".



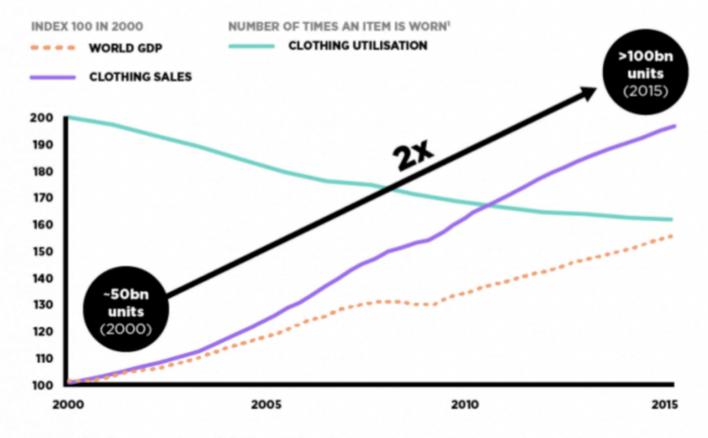
Repair is the final consideration for reducing waste is addressing how designers can create garments with future repairs in mind. Making items that can be repaired or restored throughout their lifetime aids in ensuring a reduction of new textiles and garments being created, therefore inherently reducing waste. If an item has completely. Another example of a brand that takes accountability is Patagonia. While they are known for using recycled materials, they also have a big focus on how the materials are sourced, and the working conditions for those who work in their factories. Their items are backed by their 'Ironclad guarantee', meaning that if items are damaged from wear and tear, you can send them back to the company and have them repaired. Under their 'Worn Wear' program, items that are in good condition are traded in for Patagonia store credit. Second hand items are available to purchase, there is also a small collection of factory seconds, and for those items that cannot be sold in their condition, they are repurposed into new items in their 'recrafted collection'.

Another consideration is taking on a "slow fashion" approach. This would mean making fewer items, releasing new lines less frequently, focusing on the quality of the pieces and a general awareness and consciousness about producing better quality garments. Good On You is a directory that rates the sustainability of brands, and also has various resources about sustainable fashion. This makes shopping for sustainable clothing significantly easier for consumers . As we know, it is estimated that only 10% of textiles being used are recycled. Meaning that companies are basically throwing away brand new fabrics. This is where companies like Vivify come into the picture. Textile recycling is incredibly important, which is why we produce high quality recycled textiles, which means that using our products prevents additional textiles from being incinerated or ending up in landfill.

# Growth of clothing sales and decline in clothing utilisation since 2000







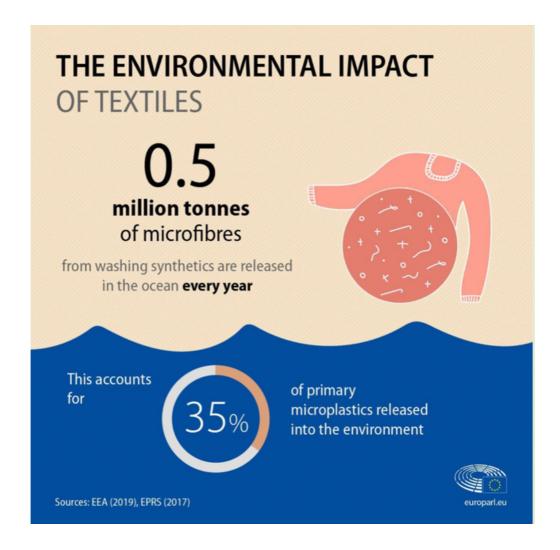
Average number of times a garment is worn before it ceases to be used Source: Euromonitor international Apparel & Footwear 2016 Edition (volume sales trends 2005–2015); World Bank, World development Indicators – GD (2017)

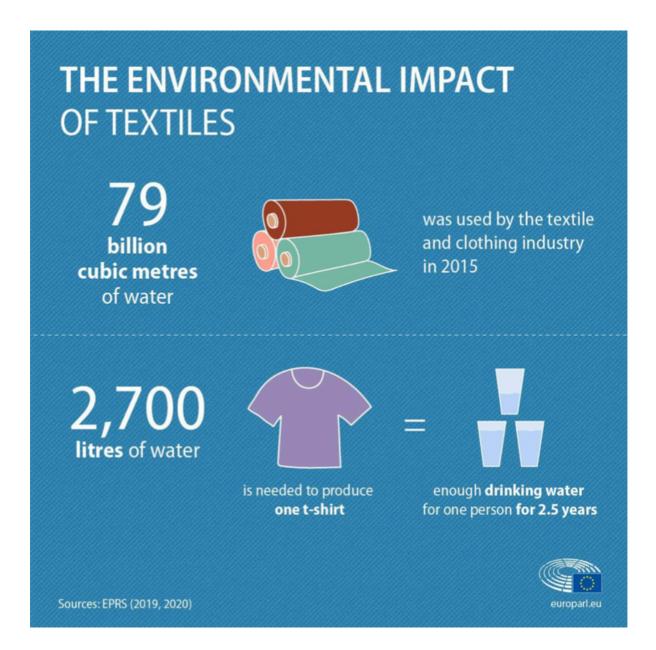
Source: Ellen MacArthur Foundation

(World Economic Forum. 2022)



The use of water in the fashion industry is a big challenge for sustainability. 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.



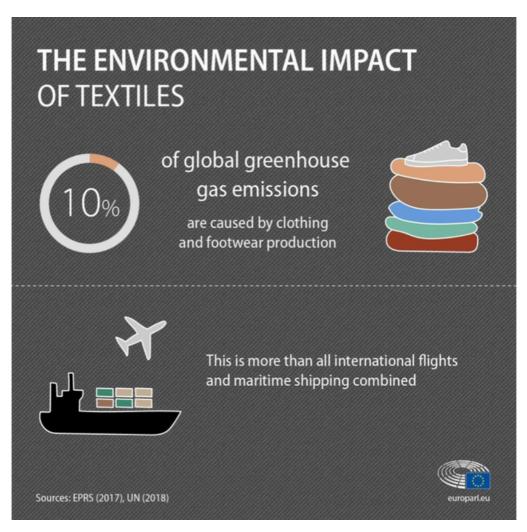


europarl library



Water pollution has reached high levels as 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.



(Textiles and the environment: the role of design in Europe's Circular Economy, n.d

Furthermore, the Greenhouse gas emissions in the fashion industry are 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.

Textile waste in landfills is another factor of the negative impact of the fashion industry. 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. However there have been applied lows and practices tackling textile waste in the EU. In February 2021, the Parliament adopted a resolution on the new circular economy action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050, including tighter recycling rules and binding targets for materials use and consumption by 2030.

As part of the proposals, MEPs asked for new measures against microfiber loss and stricter standards on water use.

As part of the circular economy action plan, the European Commission presented in March 2022 a new strategy to make textiles more durable, repairable, reusable and recyclable, tackle fast fashion and stimulate innovation within the sector.



Sustainable and innovative textiles, collaborating with responsible & certified suppliers and local producers are placed below with details for their composition.

#### Cotton

We prefer organic cotton & local clean cotton supporting greek small producers, and responsible suppliers from Europe.

#### **Cellulose-based Fibres**

Viscose, Tencel Modals are core fabrics of the textile industry. We prefer suppliers that have been Lenzing Certified and can provide ecovero and refibra Lyocell fibres.

#### **Plant-based**

Linen, Hemp, Nettle & Cypress are some nature based fabrics that support environmental regeneration. We support suppliers that embrace these materials.

#### **Animal-free leather**

We reject any kind of animal based leather material, focusing on innovative, plant-based & vegan leather alternatives.

#### Wool

Wool fabric is a controversial material. We keep wool in our supplied materials mainly caring for animal welfare certifications & mulesing-free production. Otherwise we keep an eye for innovative vegan wool initiatives.

#### Silk

For silk textiles we trust suppliers that follow the environmental and welfare standards, or we rely on vegan, animal free innovative producers.

#### **Polyester**

Although we recognize the impact of synthetics fibres, we choose to keep it in our supplied materials due to their useful properties. However we prefer recycled polyester, from reliable suppliers.



#### Pineapple leather

Pineapple leather is an artificial or semi-synthetic leather made from pineapple waste. Piñatex is a pioneer in natural leather alternatives. It's a fabric made from cellulose fibres extracted from pineapple leaves.

The pineapple industry produces 40,000 tonnes of waste pineapple leaves each year globally. With pineapple leather, long leaves suitable for fibre production generate additional income for farmers, instead of being usually burned or left to rot.

Ananas Anam is the company behind Piñatex. It produces leather-like fabrics from pineapple leaf fibre, polylactic acid, and petroleum-based resin.

The process isn't 100% sustainable but a lot more ethical and environmentally friendly than conventional leather production. This vegan leather alternative is already used today by fashion giants like H&M, Hugo Boss, and Paul Smith.

#### Orange peel silk

Orange Fiber is the first patented and manufactured fabric from citrus juice by-products. It's a silky and very light material full of innovation and visionary spirit. Instead of killing thousands of silkworms to produce a silk blouse, ethical and sustainable fabrics made from orange peels in the laboratory are great alternatives.

Orange Fiber is an Italian company and won the Global Change Award in 2015, the annual award initiated by H&M Foundation. The textile manufacturer is currently focused on improving the production process to make it scalable and appealing for fashion brands. "Following a collaboration with Politecnico di Milano University, it has been developed with an innovative process that allows turning virtually more than 700,000 tonnes of by-products that the citrus processing industry produces every year in Italy into a high-quality fabric that can respond to the need for sustainability and innovation of fashion brands. The citrus peel would otherwise have to be disposed of, with costs for both the processing industry and the environment." - Enrica Arena, Orange Fiber co-founder

#### Marine cotton

Also known as algae cotton or seaweed fabric, fibres made from algae are more environmentally friendly materials for textile than regular cotton. They are made from fibrous algae that rapidly grow with water, light, and nutrients.

Marine cotton represents an amazing alternative to current polluting conventional cotton production widely employed in the global textile and apparel industry. Fibrous algae is a high potential material as a source for fibres. Algae-based fibres are more durable and stronger than cotton. They provide a unique raw material to create special clothing. Many emerging fashion labels now offer clothing that includes algae. Companies such as Algalife turn algae into bio-based fibres and eco-friendly dyes.



#### Soy Cashmere

Fabrics made from soy protein fibre are an alternative to more polluting and cruel fibres such as silk and cashmere. Soy fibre is also known as vegetable cashmere or soy silk because it's very soft, lightweight, and breathable.

Soy cashmere is made from soy protein, a by-product of tofu manufacturing. It has amazing properties for clothing. It's comfortable, resistant, durable, anti-bacterial, and quick-drying. By choosing organic farming techniques, soy can be grown without man-made harmful chemicals in fertilisers, pesticides, and herbicides. Soy protein is extracted from soybean oil or tofu production wastes to make textile fibres.

KD New York is one rising fashion brand presenting vegetable cashmere as a luxurious, stylish, and sustainable fabric. The brand already raised more than USD 50,000 through its crowdfunding campaign on Kickstarter.

The Trends forecast is a main phase in designing process

WGSN (https://www.wgsn.com/en) is the world's leading consumer trend forecaster. Our accurate forecasts provide global trend insights, expertly curated data and industry expertise to help our clients understand consumer behaviour and lifestyles, create products with confidence and trade at the right time.

The educator will introduce the platform to the learners in a context of moodboard creation. The whole aim of this section is to empower the design process by cohesive selections and ideas of a collection.

By looking at the trends of the season, the designer/learner will move to the next step of textiles, prints and colour palette selections.

The next step is sketching the designs ideas:

- The educators will give teach the learners on:
- How to create their own personalised drawing style
- Incorporating structured composition into their designs
- Using multiple mediums to create artwork
- How to utilise traditional methods such as ink, watercolour and pastels
- Using their creativity to create original designs
- Using original concepts and themes

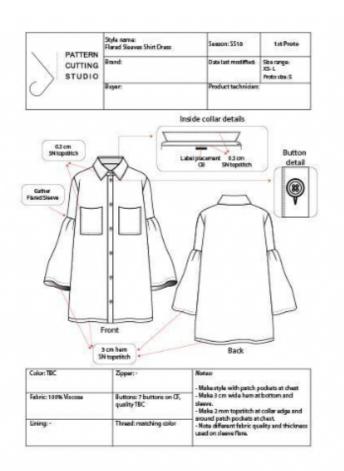
In order to move on the production, the next step is the creation of technical drawings and technical packs in the design aspect. The educator should teach the learners on how to use the software "Adobe Illustrator".

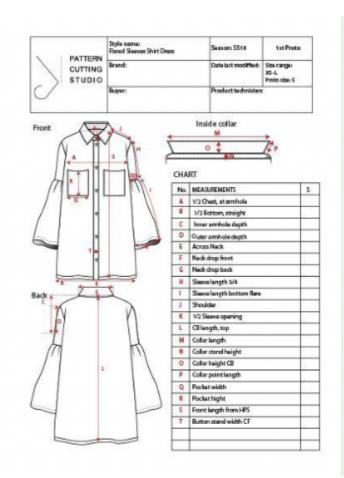




Following that, the technical pack will include all the drawings (front, sides, back), details, closeups, reference images.

SAMPLE TECH PACK





(Pattern Cutting Studio, n.d)



# Integration of the student's local and cultural heritage in the product design

The concept of cultural sustainability is developed under the 2001 UNESCO Universal Declaration on Cultural Diversity which recognises culture as the fourth dimension of sustainable development. Cultural sustainability was first defined by the World Commission on Culture and Development in 1995 (WCCD) as inter- and intragenerational access to cultural resources. According to Pereira (2007), cultural sustainability is based on the principle that the current generation can use and adapt cultural heritage only to the extent that future generations will not be harmed in their capacity of understanding and living the multiple meanings and values of this heritage.

Textile craftsmanship is part of cultural heritage and has been an important element in building cultural identities. This is reflected in the traditional garments of different communities and indigenous people worldwide.

In the context of fashion and textiles, cultural sustainability means transmitting, or supporting the knowledge transfer of traditional textile knowledge and traditional textile cultural expressions to future generations(Boţa-Moisin, 2017).

From: https://www.culturalintellectualproperty.com/cultural-sustainability-in-fashion

With demand for local and ethical sourcing on the rise, major trend-forecasting platforms like WGSN encourage partnerships with local craft communities and honouring of people and tradition

Luxury and non-luxury fashion businesses having established precedent of cultural appropriation with cases like The Maasai tribes of Kenya and Tanzania vs. Louis Vuitton (2012), the Mexican community of Santa Maria Tlahuitoltepec vs. Isabel Marant (2015), The Navajo Nation vs. Urban Outfitters (2016) or Bihor – Romania vs. Dior (2017)



# Integration of the student's local and cultural heritage in the product design

- 1. The responsibility starts in the design department. Research and expert support are paramount to get clarity on the limits between inspiration, appreciation and appropriation.
- 2. Design collaborations with people from the communities and even working with the community directly to produce the garments. This requires a longer planning time and lead time until the garments are put on the market. It is slow and conscious fashion with the additional element of cultural education for both the fashion company and the consumer.
- 3. The embroideries and complex woven or knitted elements of traditional design could be done by the artisans. This increases the product's value and creates an emotional connection with the customer.
- 4. Creating relationships with artisans is important and will generate opportunities for younger generations. Cultural mediators are needed, to be the link between the fashion company and the artisan community. Barriers of language, cultural differences and working routines can be overcome.
- 5. For advertising campaigns fashion companies should get the consent of the local communities and show the local people the history and the sources of inspiration in context, then show the creative reinterpretation of the design. Start with the original design genesis.
- 6. In any form possible, a part of the profit should be devoted to or reinvested in that community.
- 7. Interdepartmental communication at fashion company level is key: from design, production, marketing & communication and CSR the strategies and vision must be aligned.

(The Swedish School of Textiles)

https://www.culturalintellectualproperty.com/library



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- Interdepartmental communication at fashion company level is key: from design, production, marketing & communication and CSR the strategies and vision must be aligned.



# Case Study: Wear Your Origins

PARTNER: THE NEST COUNTRY: GREECE

CONTACT: award@wearyourorigins.com

Date: 30/06/22

#### **Content**

Smart Practice (1). [Project Name]

> Name of the Project: Wear Your Origins

> [City, Country] Athens, Greece

> Founded in 2021

> **Contact:** | https://www.facebook.com/wearyourorigins | https://www.instagram.com/wearyourorigins/ | www.wearyourorigins.com

#### > Type of Organization:

**Brand / Educational Program** 

#### > Field

Circular brand for women empowerment of women victims of trafficking and in risk of exploitation

Fashion entrepreneurship / Cooperation with migrants / Female entrepreneurship / Fashion education / Education Program targeting migrants / Cultural elements in Fashion.. please define)

#### > Project Description

WYO is advocating for the elimination of gender-based violence and the exploration of women. The hidden faces behind our clothes is the central focus of Wear Your Origins. Every garment narrates a story, the story of the women who designed it. Wear Your Origins designers are selected through Wear Your Origins Award. WYO is a cultural meeting centred on clothing. is an opportunity to express the thoughts and the soul through clothing. WYO is a visual journey of the culture, tradition and histories of these women. Wear Your Origins is a sustainable luxury brand with a strong environmental, social, and cultural impact combining different cultural heritage features and is a circular close loop brand. WYO brand collects dead stock from the industry and its own customers to use for the creation of its new collections.



# Case Study: Wear Your Origins

What is in it? / What does it contain? (such as workshops, training formats, business practices, ...)

WYO AWARD: a 4 month free educational program and mentoring by renowned personalities and fashion industry experts in order to create capsule collections. WYO Permanent Lucury Collection: GRECIAN 2022 collections and Alas 2023 collection, depicting cultural elements and built on the principles of sustainable and ethical fashion

#### What is the goal?

30 women from different life paths. 15 international young designers and 15 women victims of violence and exploitation from our partners safe houses and refugee centres will work together to create their own fully ecological capsule collections inspired by their country of origins and their culture.

#### Who are the beneficiaries?

Female entrepreneurs / women victims of violence ? Women Designers

#### Who are the project stakeholders?

SOFFA
Women Designers
Mentors

# What positive impact has been generated? [Please provide numbers and figures if available.]

Strong environmental, social, and cultural impact

#### Insights

Wear Your Origins narrates a story of how a brand can be fashionable, while respecting traditional fashion techniques and heritage, help resolve a social issue and be fully clean to the climate and the planet. Co-create Project supports us in bringing together fashion designers and women from excluded groups of population to create their capsule collections inspired by their country of origin. Co-create helps us learn and understand how to integrate women victims of violence in the design of Wear Your Origins brand.



# Case Study: Wear Your Origins

# How can this project contribute to Women Co-CREATE Sustainable Fashion Garments?

Wear Your Origins comes from the years of experimentation in trying to be environmentally and socially sustainable, it comes as a natural evolution of SOFFA to become fully sustainable and circular by asking its customers to co-create a close loop system. The innovation of WYO is that it is circular and close-loops to us not only towards the environment, but also towards social inclusion and towards cultural heritage preservation. Co-create supports us to accomplish this objective

# How does this case example relate to the topic area of this specific module? What can we learn from this?

Grecian is the first collection of the brand designed by Christangelos Giorgantelis. It is a collection that closes the loop and it is made sustainably and circularly. It is a concrete example of incorporating heritage elements and circular fashion and zero waste approaches and methodology to develop a contemporary collection.





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- https://www.europarl.europa.eu/resources/library/images/20201214PHT9387 2/20201214PHT93872\_original.jpg



### Resources and Videos

https://northboundgear.co/blogs/news/ted-talks-on-sustainable-fashion

https://ellenmacarthurfoundation.org/topics/fashion/overview

https://docs.google.com/presentation/d/17OJaZxWn6c-ylLbi84gc8JAelUzwMEei/edit#slide=id.g131e7d240f7\_3\_71

https://www.instagram.com/p/Cbz6HbYgQRr/

https://www.instagram.com/p/Cbf2L9LAoBg/

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https://www.youtube.com/watch?v=QYqXf6ewboo

https://youtu.be/TO- ApBAGCs

https://youtu.be/jKbiDYgOLF4

https://youtu.be/F8Bh0q32zYk

https://youtu.be/uilb-p3LMB8

https://youtu.be/-40lXKNbd70

https://youtu.be/eI4J5sv0pzM

https://youtu.be/ou6J7YA2BH8



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