Ecodesign and Sustainable Action Plan for textile MSMEs

Handbook for MSMES

Spring 2024

T&A MSMEs' TRANSITION TO CE

switchasia GRANTS PROGRAMME

Funded by the European Union

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Mediterranean Action Plan Barcelona Convention

MedWaves the UNEP/MAP Regional Activity Centre for SCP

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The Handbook

01. Project introduction

Transition to circular economy practices in textile and apparel msmes along the lifecycle in Huzhou and Shaoxing.

This project is an EU Funded project under the ***Switch Asia Program***. The project will be implemented in Huzhou and Shaoxing cities located in Zhejiang province, between 2022 and 2025. The project stems from the need to accelerate the transition to circular economy in an industry which is key to China. As a matter of fact, the country is the world largest textile and apparel producer and exporter, but these activities are generating negative environmental impacts and increasing pressure on natural resources, so circular and sustainable principles must be implemented.

The aim of the project is in line with the **Chinese 14th-Five-Year-Plan** and **SDG 12 "Responsible Consumption and Production"** as well as the **EU Green Deal** and the **EU Circular Economy Action Plan** where the textile sector is listed as a key priority.

Its specific objectives include:

Improved sustainable management, resource efficiency and adoption of circular economy principles by the local textile and fashion industry.

–

Conditions enabled for a conducive policy environment among key stakeholders for circular textile industry in Huzhou and Shaoxing.

–

Increased access of textile and apparel industry to financing for eco-design, recycling investments and clean technology transfer.

The main objective of the project is to transition to circular economy in the textile and fashion industry in Huzhou and Shaoxing, Zhejiang province.

SO1:
To improve sustainable management, resource efficiency and adoption of circular economy principles by the local textile and fashion industry.

SO2:
Enable the conditions for conductive **environmental policies** among key stakeholders for the circular textiles industry in Huzhou and Shaoxing.

SO3:
Increase access of the textile and apparel industry to **financing eco-design, recycling investments and clean technology transfer.**

China National Institute of Standardization (CNIS)

China Textile Development Center (CTDC)

ICLEI - Local Governments for Sustainability

MedWaves, the UNEP/MAP Regional Activity Centre for SCP

The Handbook

02. Framework

The ecodesign tool

This Handbook has been developed through the methodology devised by Medwaves, within the framework of the program to promote green entrepreneurship in the Mediterranean; The Switchers Program. An on-line tool was developed, ***The Switchers Tool box***, so this handbook is an off-line version of the tool adapted to the Chinese context.

The Switchers Toolbox tools and methodologies have been specifically designed to match the needs of entrepreneurs and sustainable businesses, as well as of business support organizations and trainers/mentors.

The eco-design tool, guide companies to re-think and re-design their current service or product in an effort to reduce the overall environmental impact and make it more sustainable.

Both entrepreneurs and companies at any stage of development can follow the methodology and make their products and services better for the environment.

This tool enables MSME's to:

Identify critical environmental hotspots.
–
Identify useful sustainability strategies that could open up opportunities for your company.
–
Create an Action Plan for the implementation.

Jointly with this handbook an excel sheet will be provided to trainers, in order to asset companies and help them to, first self-assess their current situation regarding sustainable and circular practices, help them to identify hotspots, envision circular and sustainable strategies, and settle an Action Plan for their implementation.

Day 02

What is Eco-design

Eco-design is an approach to the **design of products and services** that gives special consideration to **environmental impacts** during the whole **lifecycle** of a product and the full process of delivering a service.

It can be defined as the design that considers the environmental aspects and/or impacts associated with products, processes or systems, together with other traditional aspects, such us costs, quality, safety, ergonomics, etc.

Eco-designing a product or a service is about the application of strategies that allow to reduce the negative impact of products and services related to the activities and resources needed to produce the product or to provide the service, while generating additional value for customers and stakeholders.

Eco-design also brings in a **supply chain perspective**, as in many occasions the sustainability of a product or service depends on the sustainability of the resources used. So, persuading suppliers to be more aware and encouraging them to incorporate sustainability strategies may impact positively on your final product or service.

Bear in mind that this tool will not give you a straight answer on what actions you will have to do in order to improve the environmental performance of your product or service. It is you and your team who, eventually, will identify and plan these actions of improvement.

Day 02

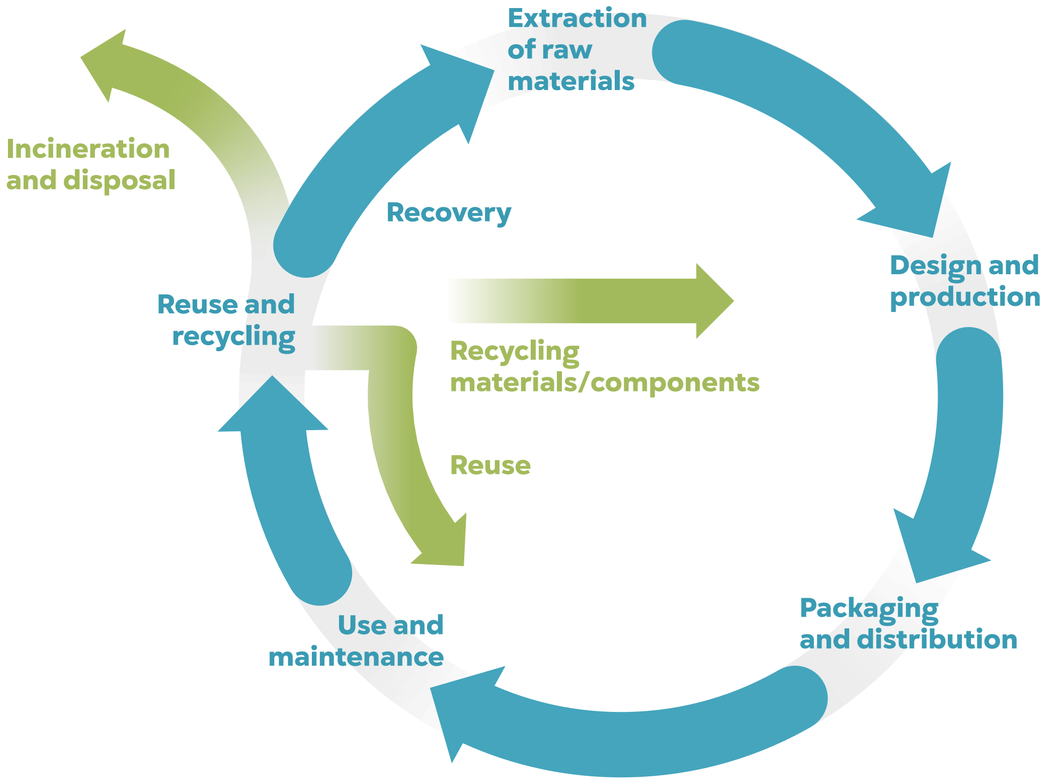
What is a product's life cycle

The shift from pollution control (focusing on the impacts of the production in factories) towards global environmental prevention considering the product throughout the whole life cycle is seen as being positive for both environmental and economic reasons.

Life Cycle Thinking seeks to identify possible improvements to goods in the form of lower environmental impacts and reduced use of resources across its life span.

The typical life cycle of a product has **6 stages:** I)raw material extraction, II) design and production (manufacture), III) packaging, IV) distribution, V)use and/or consumption plus maintenance, VI) end of life -reuse, recycling of materials, energy recovery and ultimate disposal-.

Being aware of the life cycle of the product that you aim to eco-design is preparation for the Environmental Assessment that will be performed afterwards by means of a Qualitative Assessment of a set of Life Cycle Criteria.



The Handbook

04. How the Handbook is structured

This document is structured through three parts, a first one where is explained a specific roadmap for the creation of a sustainable action plan, a second and a third part with materials and resources to carry out the plan;

Part 01 – Road map for the creation of an action plan

This part of the document explains how to proceed to create a sustainable action plan. From the revision of new legislation and requirements form retailers, an initial assessment can be conducted. Afterward, a methodology for the creation of the action plan is explained. An Excel sheet is also provided as a tool, to help companies in the development of their own sustainable action plan.

Part 02 – Ecodesign strategies

This part of the manual describes all the eco-design strategies that companies can apply. The aim is to be a repository of resources and examples so that companies can work on their own challenges and have a technical guide on how to do it.

Handbook for companies

Road map for the creation of a sustainable action plan

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The road map

This is a general view of the main steps the company must go through for the creation of their own Sustainable Action Plan. The steps are divided into two phases. The first one responds to the question WHY. Why the company must introduce new sustainable strategies. Here the main issues that arise are social and environmental impacts, new legislation and how the company is performing in relation with this issues. The second phase responds to the questions, WHAT the company must do and HOW. This first part of the handbook will explain how to proceed with this journey.

The why?

Step 01

01.
Environmental and social impacts.

02.
New legislation.

03.
Requirements from brands.

Step 02 – Assessment tool

01.
Answer the questions related with your own operations.

02.
Identify where the main impacts of the company's operations are.

The what & how?

Step 03 – How to choose & prioritize

01.
Combine what the legislation and brands are asking us, with our main impacts.

02.
Select the attributes related with your main impact.

Step 04 – Strategies and Action Plan

01.
Select the strategies linked to the attributes chosen for each lifecycle stage.

02.
Group the strategies into bigger actions (column L).

Step 05 – Road Map

01.
Create a factsheet for each Action.

02.
Stablish goals, tasks, timelines, KPI's, economic resources, human resources, person in charge.

Road map for the creation of a sustainable action plan

Step 01 – Impacts

New legislation & requirements related to garments

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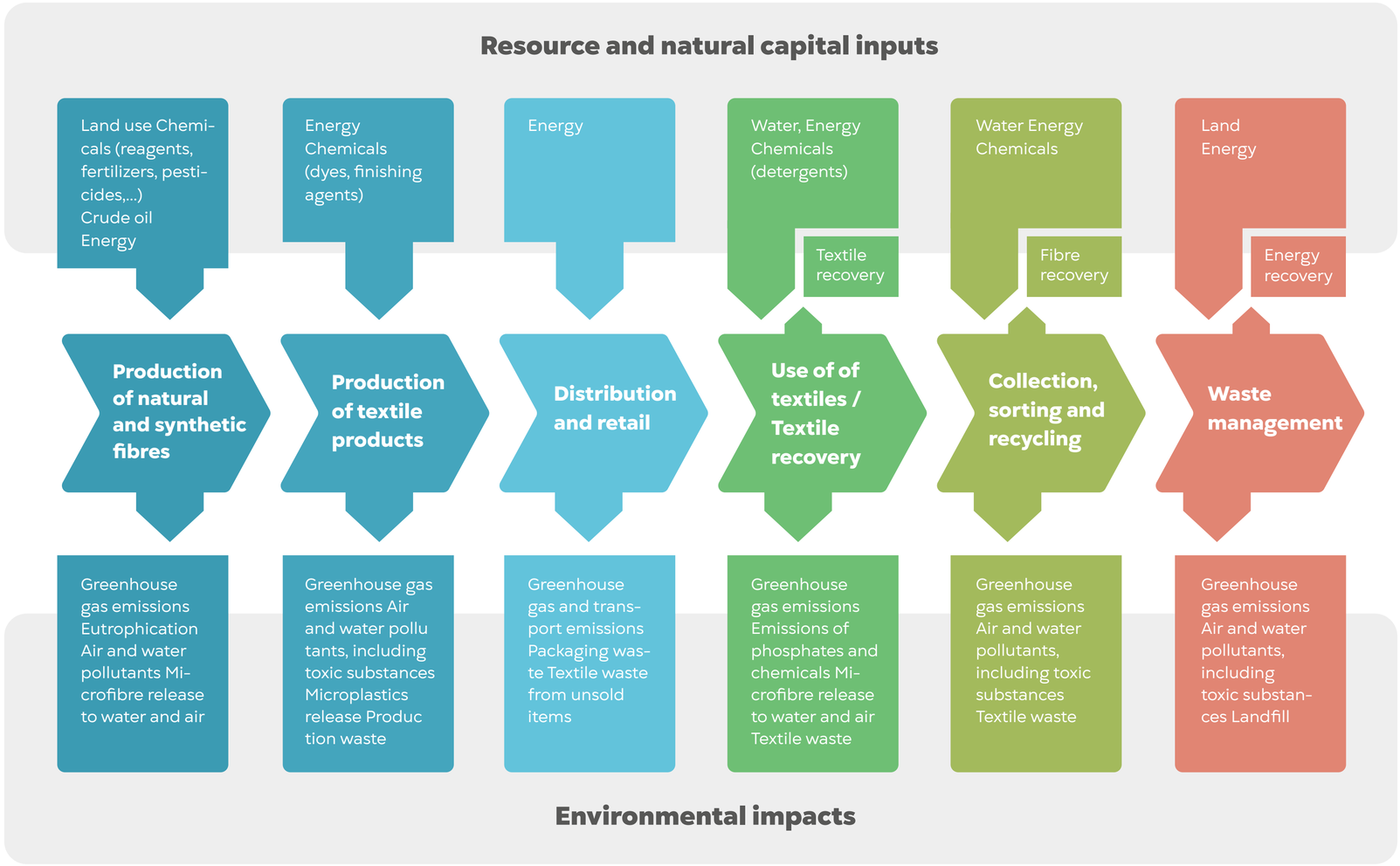
Step 01

The why

The impacts

Environmental and social impacts occur throughout the whole life cycle of garments. This systemic approach allows us to assess which are the most important ones and to recognize them in the industrial operations. In the Chinese context, where companies are generally producers of part of the textile process, they will have to assess what these impacts are, both environmental and social, that occur in their production facilities and processes. The resources that are needed, i.e. inputs, energy, water, materials, chemicals, etc... And the outputs, as waste, release of heat, gases, water, energy, etc... In this first stage it is important to know what are the impacts that the organization is generating to be able, later, to seek for solutions and implement sustainability strategies.



Step 01

Key Facts

Key Facts

80-100 billion

new clothes garments are produced globally every year

92 M.tones

of textile waste is produced in the world every year (China: 20 M.Tons; US: 17 M.Tons)

7%

of waste in global landfills are clothing and textiles

87%

of the materials and fibers used to make clothing will end up in incinerators or landfills

5 M.tones

of clothing discarded each year in the EU - around 12kg per person

1%

of clothes will get recycled into new garments

The textile sector was the third largest source of water and land use degradation.

The fashion industry is estimated to be responsible for 10% of global carbon emissions, more than international flights and shipping combined.

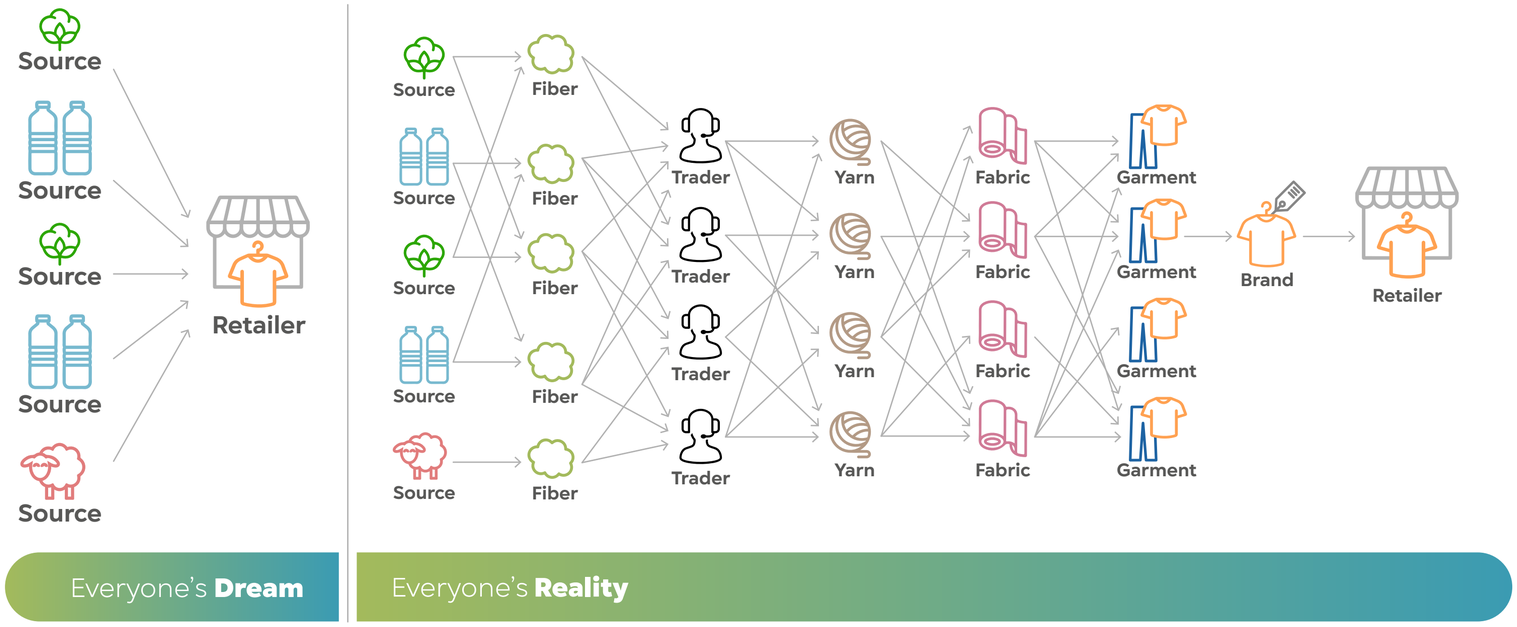
Step 01

The supply chain

This picture illustrates the complexity of the due diligence and its importance in the supply chain management. Due diligence is a process by which companies assess the potential risks associated with doing business with a supplier along the whole production process and in the different tiers (tier 1, tier 2 and so on). The picture shows that traceability and transparency are essential components of due diligence since the effectiveness of due diligence depends on the quality of the information that is shared/collected. Being able to track the origin of goods throughout the supply chain enables companies to identify the source of materials, manufacturing processes, and labor practices involved in producing their products, along all the supply chain. This allows companies to monitor the environmental and social impact of their suppliers such as pollution, waste management, and natural resources use, respect of labour conditions, etc.

The more extensive and complex the supply chain is, the more difficult it is to ensure due diligence and control over all tiers in relation to the aforementioned aspects. That is why it is important to try to simplify the chain as much as possible and avoid players that make more difficult the complete visibility of the chain.

The real challenge we are facing in the sector: the complexity of the supply chain



Step 01

Overview of the european legislation

The end of textile waste, excessive chemicals, the presence of microplastics or production under decent conditions is no longer a goal without a deadline. The industry is racing against the clock to implement EU measures to make all clothing more environmentally friendly and circular in design.

With this situation, the European Union has taken significant steps towards reducing carbon emissions and the textile/fashion sector has been one of its main focuses.

EU-based fashion brands and their supply chains will be hit hard by the numerous regulations and directives that are being implemented now and it is expected more in the coming years.

SUSTAINABLE DEVELOPMENT GOALS

Step 01

Legal framework

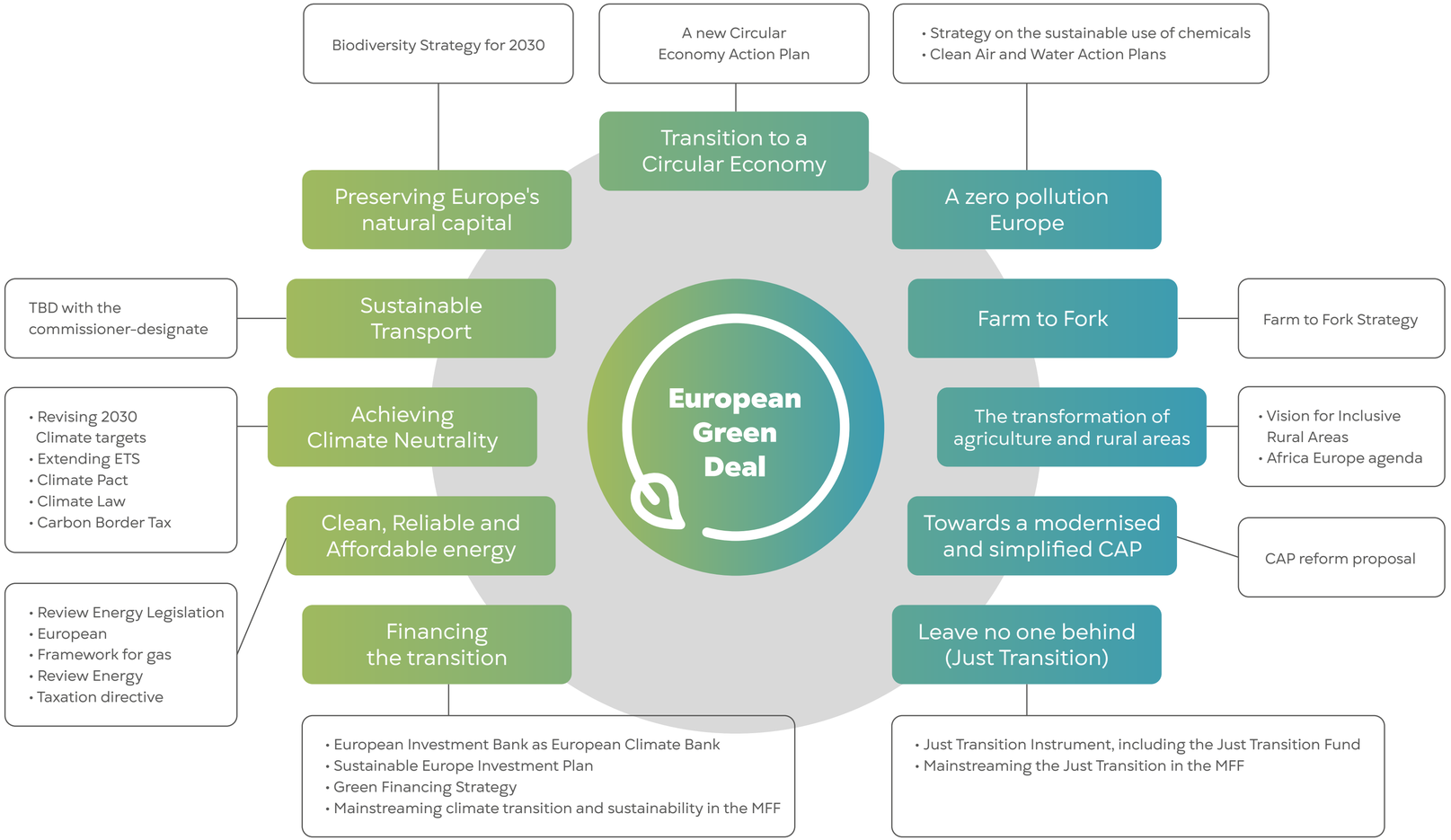
It is a set of policies and investments to make the EU climate-neutral by 2050 and protect the environment and people.

This means that by 2050 the EU will significantly reduce its greenhouse gas emissions, while remaining emissions will be captured by technology or in natural carbon sinks, such as forests.

Among the first key elements of the Green Deal, the ***EU Climate Law*** entered into force in July 2021 and made binding the climate neutrality commitment. It set Europe's goals to become climate-neutral by 2050, as well as a target of 55% less emissions by 2030, in comparison to 1990.

As required under the Climate Law, the Commission also recommended, in February 2024, an additional intermediate target of 90% less emissions by 2040, confirming our direction of travel.

The UE new green deal



Step 01

Legal framework

EU strategy for sustainable and circular textiles 2022/2171(INI)

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.

The Strategy looks at the entire lifecycle of textile products and proposes coordinated actions to change how we produce and consume textiles.

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 in the sector.

The new strategy includes:

01.
New eco-design requirements for textile products.

02.
Clearer consumer information.

03.
A Digital Product Passport and.

04.
Calls on companies to take responsibility and act to minimise their carbon and environmental footprints.

Objectives

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.

–

Consumers benefit longer from high quality affordable textiles.

–

Profitable re-use and repair services are 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.

Step 01

Legal framework

Ecodesign for Sustainable Products Regulation (ESPR) Directive 2009/125/EC

The proposal establishes a framework to set ecodesign requirements for specific product groups to significantly improve their circularity, energy performance and other environmental sustainability aspects.

Currently, the Ecodesign Directive only covers energy-related products, but it will soon be extended to textiles and other sectors. This regulation aims to make products durable, reliable, reusable, upgradeable, repairable, easier to maintain, refurbish and recycle, as well as energy and resource efficient. Fashion brands wishing to sell their products in the EU will need to address product design from start to finish, taking into account durability, recyclability and the inclusion of recycled materials.

For the textile/fashion sector this also means an increased focus on **transparency and traceability**. The new eco-design requirements for textiles are expected to be finalized by 2025.

The regulation also introduces the DPP (Digital Product Passport), which will make it easier for consumers to repair or recycle products, as well as to trace substances used throughout the supply chain.

Objectives

Energy Efficiency:
One of the principal aims of the ESPR is to drastically improve the energy efficiency of consumer products. By imposing rigorous standards, the regulations compel manufacturers to innovate and invest in energy-saving technologies, thereby reducing the overall energy consumption and mitigating the impact on climate change.

Resource utilization:
It also focuses on the efficient use of natural resources encompassing not only the raw materials used in the production process but also the water and energy required throughout a product's lifecycle. Companies are encouraged to adopt responsible sourcing practices and resource-efficient manufacturing processes.

Environmental Performance:
The regulations mandate an enhanced overall environmental performance for consumer goods. This includes reducing harmful emissions, minimizing waste and promoting recycling and reusability. Pro-

Step 01

Legal framework

Ecodesign for Sustainable Products Regulation (ESPR) Directive 2009/125/EC

ducts must meet certain environmental criteria to be marketable within the EU, which often necessitates redesign and innovation.

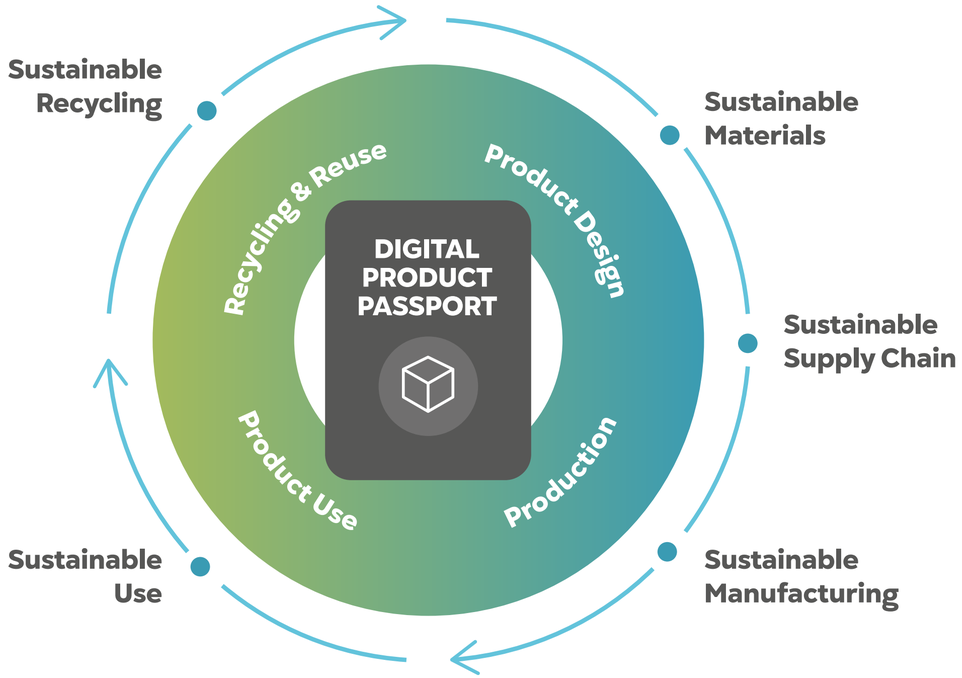
Digital Product Passport

The Digital Product Passport will have important implications for textiles and fashion. All products placed on the European market must have a product passport. This tool will serve as a digital record that provides complete information on the environmental footprint of a product throughout its life cycle.

Each product must include a machine-readable passport, such as a QR code, linked to a unique product ID. For fashion and textile brands, this may include:

- Durability, reusability and repairability of the product.
- Percentage of recycled content.
- Carbon footprint of the product.
- Circularity of the product in relation to its recyclability and environmental sustainability, among other requirements.

Additional Digital Product Passport specifications are expected to be published in 2024, although it is not yet clear when they will come into force. The regulation is expected to enter into force in 2026/27, while most products are expected to be covered by 2030.



Step 01

Legal framework

EU Textile Labelling Regulation (TLR)

The European Commission is revising EU Textile Labelling Regs for sustainable practices & transparency, aligning with Ecodesign for Sustainable Products Regulations.

The EU Commission envisions using QR codes in conjunction with multi-purpose technologies, like the Digital Product Passport (DPP). Additionally, the introduction of a standardised set of fibre codes is anticipated to simplify translations, leading to more concise labels. With the expansion of the TLR's jurisdiction, these products are likely to see a detailed inclusion of factors such as animal species, sourcing methodologies, and implications related to deforestation.

The EU Ecolabel

It helps consumers, retailers and business make truly sustainable choices.

Launched in 1992, the EU Ecolabel logo has become a byword for quality while meeting the highest environmental standards.

Six reasons to embrace EU Ecolabel:

01.
It showcases true 'green' products, empowering sustainable choices.

02.
It benefits the environment while encouraging responsible business.

03.
It allows market actors to contribute to the political objectives of a climate neutral, clean, circular economy, and a toxic-free environment.

04.
It guarantees that products are durable and easy to repair/recycle.

05.
It minimises the use of harmful chemicals, as well as emissions into air and water.

06.
It helps in reducing energy consumption and CO_2 emissions.

Step 01

Legal framework

Directive (EU) 2018/851 of the European parliament and of the council of 30 May 2018 amending Directive 2008/98/EC on waste (Waste Framework Directive)

In 2018, the Parliament adopted the waste directive. The Commission's strategy also includes measures to tackle the presence of hazardous chemicals, calls on producers to take responsibility for their products along the value chain, including when they become waste, and aims to help consumers make sustainable textile choices.

The European Parliament presented ideas for amending the textile waste regulation in March 2024. The revision of the waste directive will introduce extended producer responsibility systems. This means in practice that producers of textile products, such as clothing, footwear, hats and accessories, as well as other companies placing these products on the European single market, will have to cover the costs of separate collection, sorting and recycling.

While the Commission proposed that extended producer responsibility schemes should be introduced 30 months after the entry into force of the directive, MEPs pushed for 18 months. In addition, EU countries would be obliged to collect textiles separately by 1 January 2025 for re-use, preparation for re-use and recycling.

Step 01

Legal framework

Directive (EU) 2018/851 of the European parliament and of the council of 30 May 2018 amending Directive 2008/98/EC on waste (Waste Framework Directive)

The Waste Framework Directive lays down some basic waste management principles.

It requires that waste be managed:

Without endangering human health and harming the environment.
- Without risk to water, air, soil, plants or animals.
- Without causing a nuisance through noise or odours and.
- Without adversely affecting the countryside or places of special interest.

Hazardous waste

Hazardous wastes pose a greater risk to the environment and human health than non-hazardous waste and therefore require a stricter control regime.

The Waste Framework Directive provides additional labelling, record keeping, monitoring and control obligations from the "cradle to the grave", in other words, from the waste production to the final disposal or recovery. It also bans the mixing of hazardous waste with other categories of hazardous waste, and with non-hazardous waste.

Step 01

Legal framework

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The Regulation on the registration, evaluation, authorisation and restriction of chemicals (REACH) is the main EU law to protect human health and the environment from the risks that can be posed by chemicals. The REACH Regulation entered into force in 2007 and has since evolved to reflect the advancement of knowledge regarding various chemicals and their properties.

The REACH Regulation aims to:

Ensure a high level of protection of human health and the environment against harmful substances

–

Assess the safety of chemical substances in use in the EU

–

Promote innovation and competitiveness

–

Promote alternative (non-animal) methods for the assessment of the hazards of substances

The Commission is currently revising the REACH Regulation. It will include a thorough assessment of possible impacts of potential changes to REACH on:

The protection of human health and the environment

–

The use of animal testing

–

The functioning of the internal market

–

The competitiveness and innovation of European industry and businesses

Step 01

Legal framework

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

REACH places responsibility on industry to manage the risks from chemicals and to provide safety information on the substances. To that end, manufacturers and importers are required to gather information on the properties of their chemical substances and to register that information in a central database in the ***European Chemicals Agency (ECHA).***

The Agency is the central point in the REACH system: it manages the databases necessary to operate the system, coordinates the in-depth evaluation of the information provided on chemicals and runs a public database where consumers and professionals can find hazard information.

Protecting consumers

Under REACH, consumers have the right to know whether the products they buy contain harmful chemicals. These substances are found in everyday products, and they have been linked to serious and often irreversible effects on health or the environment. To assist consumers, REACH introduced the "consumer right to know" in Article 33.

Annex XIV, the list of Substances known as Substances of Very High Concern (SVHC)

The first list of SVHCs was published on 28 October 2008 and the list has been updated many times to include new candidates. The most recent update occurred in January 2022 to include a total of 223 SVHC.

To check the complete list:
https://echa.europa.eu/authorisation-list

Step 01

Legal framework

Proposal for a directive of the European parliament and of the council on substantiation and communication of explicit environmental claims (Green Claims Directive)

With 230 environmental labels and certifications, it is no wonder that consumers are confused when analysing brands' sustainability claims. A European Commission study concluded that **53% of environmental claims are false, vague, misleading or unsubstantiated.** Forty per cent have no evidence to back them up.

In March 2022 the Commission published the "Proposal for a Directive on substantiation and communication of explicit environmental claims", also known as Green Claims Directive. to update Union consumer law to ensure that consumers are protected and to empower them to contribute actively to the green transition. The Green Claims Directive will enable consumers to make informed choices by mitigating greenwashing and misleading environmental claims.

Any environmental claims such as 'this product has a reduced carbon footprint' will have to be verified by an independent third party and scientifically proven. Rules will also be enacted to ensure that claims are clearly communicated.

In general, this directive aims to improve the information presented on product labels, particularly with regard to durability and reparability. Any claims related to sustainability will have to be **supported by third party reviewed data**, obtained through the use of a standard methodology. No new labelling schemes will no longer be allowed unless permitted by the EU with a clear demonstration of added value to authorities.

53%
of green claims give vague, misleading or unfounded information

40%
of claims have no supporting evidence

50%
of all green labels offer weak or non-existent verification

Step 01

Legal framework

Proposal for a directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence- CSDDD (amending Directive (EU) 2019/1937)

On 24 April 2024, the European Parliament voted to adopt the Corporate Sustainability Due Diligence Directive (CSDDD). It determines obligations for companies in relation to actual and potential adverse human rights impacts and adverse environmental impacts, with respect to their own operations, the operations of their subsidiaries and value chain operations carried out by entities with which the company has an established business relationship.

It also sets out rules on liability in the event of non-compliance with these obligations.

Although it is true that small and medium-sized enterprises (SMEs) do not fall within its scope, they will necessarily be affected when contracting with companies that do have to comply with the directive.

Scope:

First year the CSDDD applies*	EU companies		Non-EU companies	
	Turnover	Number of employees	Turnover	Number of employees
c. **2027** (three years after entry into force)	1500 million euros **globally**	5000	1500 million euros **in the EU**	N/A
c. **2028** (four years after entry into force)	900 million euros **globally**	3000	900 million euros **in the EU**	N/A
c. **2029** (five years after entry into force)	450 million euros **globally**	1000	450 million euros **in the EU**	N/A

*The exact date will be determined by the date the CSDDD enters into force.

Step 01

Legal framework

Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 concerning sustainability reporting by companies (Corporate Sustainability Reporting Directive - CSRD)

As part of the European Green Deal, the CSRD will transform how companies report on sustainability matters. It modifies the Non-Financial Reporting Directive 11/2018 (NFRD).

It aims to improve the availability and reliability of sustainability information and create a culture of transparency around companies' impact on people and the environment.

One of the central pillars of the CSRD is the requirement for in-scope companies to produce disclosures in accordance with the **European Sustainability Reporting Standards (ESRS)**, which will involve reporting on a broad range of sustainability topics applying a **double materiality approach.**

Scope

European companies:

All large companies.

–

All companies listed on EU-regulated markets and their subsidiaries.

Small and medium-sized companies that meet 2/3 criteria:

Less than 250 employees.

–

Less than EUR 40 million turnover.

–

Less than EUR 20 million in assets.

Non-European companies (meeting at least two of the criteria):

Net turnover of EUR 150 million 150 million in the EU.

–

Have at least one subsidiary or branch in the EU.

Step 01

Legal framework

Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 concerning sustainability reporting by companies (Corporate Sustainability Reporting Directive - CSRD)

European Sustainability Reporting Standards (ESRS)

The CSRD requires companies within its scope to report their non-financial information in accordance with common standards.

The European Financial Reporting Advisory Group (EFRAG) has been appointed as technical advisor to the EC, responsible for developing and issuing this new framework of standards: the European Sustainability Reporting Standards (ESRS).

The standards are built on the four-pillar reporting structure already included in other sustainability disclosure standards and include disclosures for each of the ESG areas (ENVIRONMENTAL, SOCIAL and GOVERNANCE):

Step 01

Legal framework

Other important issues

Product Environmental Footprint (PEF) Method

Method for measuring the environmental footprint of products

The EU is working on the Product Environmental Footprint (PEF) method for the clothing and footwear sector. The PEF incorporates several environmental indicators such as carbon emissions, water use or energy consumption.

Once the Eco-declaration Directive has been implemented, it will be even more important for fashion and textile brands to incorporate a carbon management tool into their workflow. In March 2023, the Commission published a proposal for this directive - although it has not yet been implemented.

It is estimated that the requirements of this directive will apply from 2026.

EU Reaches provisional agreement on banning products made with forced labour

On 5 March 2024, ***European Union legislators reached provisional agreement*** on new rules that, once formally adopted, will ban products made with forced labour from being placed or made available on the EU market or exported from the EU market.

The EU's ban on products made with forced labour regulation (FLR) will apply to products which in whole or in part benefited from forced labour. The FLR supplements the existing EU rules combatting human trafficking.

The FLR will apply to small and medium-sized enterprises (SMEs), as well as large companies, placing products on the EU market, distributing products within the EU, or exporting products outside the EU.

The FLR will now be subject to formal approval and is likely to apply across all EU member states from mid-2027.

Step 01

Legal framework

Other important issues

EN 14682:2014 Safety of Children's Clothing

It was issued for the first time in December 2004. Related to the running development of garments, designs and styles, users find it challenging to adopt the requirements correctly on their products. The current standard is "designated" in the UK and "harmonised" in the EU.

There are requirements for:

Cords emerging on the head or neck area of garments.
–
Decorative features on hoods of garments.
–
Raw edges on garments.
–
Cords on bootees and socks for pre-walking children.
–
Cords in the lower leg area of garments including socks and hosiery.

EN 14682 covers all children's clothing including disguise costumes and ski apparel up to 14 years of age. The standard does not apply to child use and child care articles, footwear, hats, gloves and scarves, to name but a few.

Step 01

Requirements from brands

Why MSMEs need to be aware of the new ue legislation?

01.
For being COMPLIANT:
Understanding and adhering to the regulations ensures that companies operating in the textile sector comply with legal requirements. Failure to comply can result in fines, legal action, and damage to the company's reputation.

02.
For enhancing MARKET ACCESS:
Many consumers are becoming increasingly conscious of the environmental and social impact of the products they purchase. Compliance with sustainability regulations can provide companies with a competitive advantage by demonstrating their commitment to ethical and eco-friendly practices.

03.
For managing RISK:
Non-compliance with regulations poses risks to businesses, including financial penalties, product recalls, and reputational damage. Being informed and trained about these regulations allows companies to identify potential risks and take proactive measures to mitigate them.

04.
For encouraging the efficient USE OF RESOURCES:
Such as water and energy, and the reduction of waste. By understanding and implementing these regulations, companies can improve their resource management practices, reduce costs, and be efficiency in their operations.

05.
For fulfilling STAKEHOLDER EXPECTATIONS:
Investors, consumers, employees and other stakeholders increasingly expect businesses to operate in a socially and environmentally responsible manner. Compliance with sustainability regulations helps companies meet these expectations and build trust with stakeholders.

Step 01

Requirements from brands

Alligned estrategies

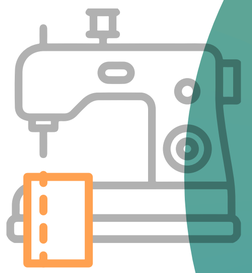
Traceability
Of materials (through certification and verification processes)
Of supply chain production sites - upstream)

Ecodesign
Entire lifecycle of a product, from designing, raw material sourcing to manufacturing, distribution, use and disposal

Reducing impacts
By implementing strategies and initiatives throughout your operations and ply chains, in all steps of production process

Verification/ certification:
Choose the option that best suits your product and business to ensure compliance with standards & regulations

Ethical performance:
Assure compliance of the CoC to improve workers conditions and environmental performance and involving stakeholders



Suppliers

Transition pathway

Retailers

Communication

Step 01

Assure Traceability

To track and trace the journey of a textile product throughout its entire supply chain, in 2 dimensions:

01.
The raw materials sustainable sourcing

as

02.
The production factories in the upstream

Supply chain mapping

Tier 1	Tier 2	Tier 3	Tier 4

Textile Exchange

Textile exchange standards*

*All this standards to ensure the traceability and conditions has two certifications:
SC: Scope certificate – This kind of certification help to know if the facility comply with traceability and CSR aspects.
TC: Transition certification – This kind of certification help to knows "the credit" of available raw materials it works as a balance mass

Labeling	NO LABELING PERMITTED	Material Content Claim	Material Content Claim	Material Content + Processing Claim	Material Content Claim	Material Content Claim	Material Content Claim	Material Content Claim
Processing Requirements				Social Environmental Chemical				
Chain of Custody	CCS	CCS	CCS	CCS	CCS	CCS	CCS	CCS
Input Verification Requirements	Generic	Organic Farm Standard	Recycled Input	Recycled Input	Animal Welfare	Social Land Management Animal Welfare	Social Land Management Animal Welfare	Social Land Management Animal Welfare

Step 01

Assure Ecodesign

It considers the entire lifecycle of a product, from designing, raw material sourcing to manufacturing, distribution, use, and disposal, with the aim of minimizing environmental impact while maximizing efficiency and sustainability.

Bullet points:

01.
Alignment with the principles of the circular economy

02.
Materials that have minimal environmental impact throughout their lifecycle

03.
Implementing production processes that minimize resource consumption, waste generation, and emissions

04.
Lower resource consumption and waste generation with textile products that are durable, long-lasting, and resistant

05.
Designing products that are easily recyclable, using materials that can be biodegraded

06.
Implementing take-back and recycling programs to ensure responsible disposal and reuse of materials

Step 01

Assure ethical performance

Through compliance with the Code of Conduct (CoC) which should include labor practices, human rights of the workers, environmental sustainability and business integrity.

Bullet points:

01.
Assure compliance of the CoC with cascade effect, along the whole supply chain (upstream)

02.
Conduct (or accept) audits of supply chain production sites

03.
Align with international standards certifications to avoid audit fatigue and doble audit efforts

04.
Work together with the supply chain to improve workers conditions, and especially for the CAPs to assure legal requirements and brands expectations

05.
Involve stakeholders from across the textile supply chain, including workers, suppliers, customers, **NGOs, and trade unions associations**, in the development of the code of conduct

06.
Be aware of the non-compliance and the risks of the sector in the different production countries and establish robust monitoring and enforcement mechanisms to ensure compliance

Prohibit discrimination
Employ based on their ability to carry out the duties of a particular job, rather than personal characteristics or beliefs.

Prohibit child labor
Prohibit child labor when the work prevents effective school attendance and the work conditions are hazardous.

Workplace Safety
Address common safety issues such as fire hazards, clearly marked and unblocked exits, cleanliness, and poor lighting

Fair wages & working hours
Compompensate fairly for normal work hours and overtime. Allow time off for rest and being with families.

Freedom of association
Support for freedom of association and the right to organize and bargain collectively.

Environmental safekeeping
Commit to the environment and follow local and national laws to help protect and preserve the environment.

Step 01

Assure verification

Verification processes in the textile sector are essential for ensuring compliance with standards, regulations, and sustainability criteria throughout the supply chain.

Bullet points:

01.
Verify the sustainability and quality of textile products, and choose the option that best suits your product, such as the Global Organic Textile Standard (GOTS), OEKO-TEX Standard 100, Fair Trade certification, the Better Cotton Initiative (BCI), etc., to ensure that products meet specific criteria required by brands

02.
Conduct audits of supply chain to assess compliance with ethical, environmental, and social standards, performed by third-party auditors (or internal audit teams)

03.
Testing and analysis of textile products to assess their quality, performance, and compliance with regulatory requirements or brands' standards. It can be for chemicals residues in wet process, for harmful substances, durability, composition, etc.

04.
Technologies such as barcodes, RFID tags, and blockchain to track the movement of products from raw material sourcing to manufacturing, distribution and retail

Step 01

Managing impacts

Suppliers can manage and reduce their sustainable impacts by implementing various strategies and initiatives throughout their operations and supply chains, in all steps of production process.

Bullet points:

01.
Invest in energy-efficient technologies and practices to reduce energy consumption and greenhouse gas emissions

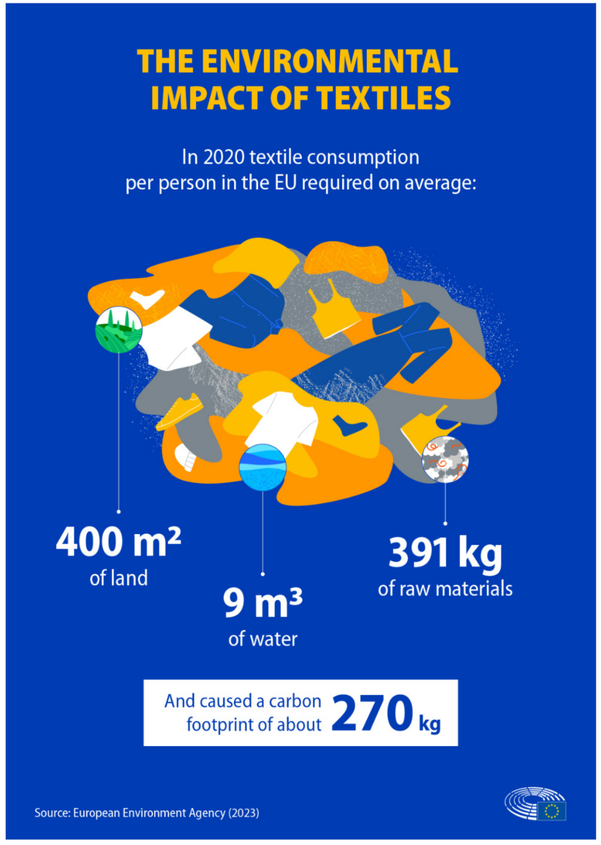
02.
Implementing an EMS, such as ISO 14001, can help suppliers systematically identify, monitor, and reduce their environmental impacts

03.
Implement measures to conserve natural resources such as water. This could involve water recycling and reuse, waste minimization, recycling programs, and responsible sourcing of materials

04.
Selecting sustainable fibers, dyes, and chemicals, as well as adopting cleaner production methods that minimize pollution and waste

05.
Engage with stakeholders of the sector (local and/or international initiatives), to manage concerns regarding sustainability through strategies and action plan definded

06.
Communicate transparently about sustainability efforts and objetives, and set some metrics (KPIs) to measure the progress



Step 01

International initiatives & standards

BCI
www.bettercotton.org

BEPI
www.amfori.org/en/solutions/environment/amfori-bepi

BLUESIGN
www.bluesign.com

BSCI
www.amfori.org/en/solutions/social/about-bsci

CASCALE (formerly SAC)
www.cascale.org

CDP
www.cdp.net

CLEAN CLOTHES CAMPAIGN
www.cleanclothes.org

CRADLE TO CRADLE
https://c2ccertified.org

ELLEN MACARTHUR FOUNDATION
https://ellenmacarthurfoundation.org.cn/

ETHICAL TRADING INITIATIVE
https://www.ethicaltrade.org/

EU ECOLABEL
https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel_en

FASHION REVOLUTION
www.fashionrevolution.org

GLOBAL FASHION AGENDA
https://globalfashionagenda.org/

GRI
www.globalreporting.org

ILO
www.ilo.org

INDUSTRIALL
www.industriall-union.org

INTERNATIONAL ACCORD
www.internationalaccord.org

OCDE
www.oecd.org

OEKO-TEX STANDARD
https://www.oeko-tex.com/en/our-standards/oeko-tex-standard-100

OPEN SUPPLY HUB (formerly OAR)
https://info.opensupplyhub.org/

SA8000
https://sa-intl.org/programs/sa8000/

SCIENCE-BASED TARGETS INTITIAVITE
www.sciencebasedtargets.org

SMETA
www.sedex.com/solutions/smeta-audit

STEP BY OEKO-TEX
https://www.oeko-tex.com/en/our-standards/oeko-tex-step

TEXTILE EXCHANGE
www.textileexchange.org

THE FASHION PACT
www.thefashionpact.org

ZDHC
www.zdhc-gateway.com

Road map for the creation of a sustainable action plan

Step 02

Assessment tool

Handbook for companies

T&A MSMEs' TRANSITION TO CE

switchasia GRANTS PROGRAMME

Funded by the European Union

Step 02

Ecodesign assessment tool

How is the assessment designed

In this second step, the company must carry out a self-assessment, to know which aspects of improvement it can apply to its manufacturing processes. Also to learn about the good practices it currently carries out in order to be able to strengthen them. To do this, an excel sheet has been created. The document is designed so the company can answer several questions for this self-assessment.

The different columns point to the different items necessary for the assessment. Divided through the life cycles stages, each column is related to some item for the assessment. For the assessment several questions, divided into the different life cycle stages have been developed. The idea is that the advised company answers YES or NO to the question. The main columns for this assessment are; Attributes, Attributes description and the questions / answer columns.

Attributes

Each phase of the life cycle has a number of attributes associated with it, which presents possible areas of improvement. The user will be able to decide for each attribute if they select it for their design project, or specifically if that attribute is not related to their productive activity.

Distribution

As mentioned, the excel sheet is divided into several columns. The main one, is the Life Cycle stage. Each stage have different number of attributes, that help the company to identify several aspects regarding the environmental performance of their product, divided in seven life cycle stages;

Code	Life cycle stage
001 System	Raw materials
002 System	Production
003 System	Packaging
004 System	Distribution
005 System	Use and maintenance
006 System	End of life
007 System	Corporate mangement

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
001 system	Raw materials	Diversity of materials	Number of different typologies of materials involved in the product. In general, less is better.	Does your product uses different types of materials? Can you think on how to reduce such number?		

Example

Step 02

Ecodesign assessment tool

Raw materials assessment

In this first step, the user is asked to identify which type of components, materials and resources the company is using and where they are coming from. This is an important step where it is identified and 'counted' everything it is needed to create a product, considering number, type and quality of materials and any resources (like water or energy...).

In this step, it can be seized great opportunities related to raw materials consumption.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
001_SYSTEM_RAWMATERIALS	**RAW MATERIALS** These attributes relate with the type of materials and natural resources needed to produce a specific product, as well as their characteristics. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Diversity of materials**	Number of different typologies of materials involved in the product. In general, less is better.	Does your product combine different types of fibers?		
		Amount and type of materials	Weight and material properties of the materials involved in the product. The less material has to be used in a product, or the longer it lasts, the less resources will be consumed in the production process.	It could be minimize the variety of materials used in the textile product while ensuring functionality and quality?		
				It could be possible using the lightest materials to build the product?		
		Ecological rucksack of materials	It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.	Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification ((GRS, GOTs, FSC, others) of the textile product?		
		Renewability	A renewable resource is a natural resource which can be replenished over time, either through biological reproduction or other naturally recurring processes.	Can the company switch from non-renewable to renewable material sources? (example; can the company switch from poliester and synthetic fibers to natural or celulosic fibers?)		
		Recyclability	The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.	Can the company improve the reciclability of the product?		
		Recycled content & Recovered components	The proportion, by mass, of recycled material in a product or packaging. Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).	Is the company producing any product made of fully recyclable materials?		
		Biodegradability	The capability of being decomposed by biological agents, especially bacteria.	Can the company switch from non-biodegradable to biodegradable materials? Is the company using compostable or biodegradable organic materials?		
		Material's availability	Geographical location from which materials are obtained; and/or amount of resources (materials) that are fundamental for the product provided left in nature. Some substances (materials) are already scarce. Local materials are desirable due to shorter distances.	Does the company use the majority of materials (more than 70%) required for the textile product, which are readily available and commonly found within your region (within a 300km radius)?		

Step 02

Ecodesign assessment tool

System production assessment

In this step, the main production stages are identified (including processes, treatments, manufacturing operations and so on). More complex products, with many elements coming from remote places, add a lot of vulnerable aspects to the business. New efficient technologies, at production stage, can help to improve the way the company craft the products and services. As an example, the sandblasting process (a very hazardous surface treatment for jeans) can be replaced by ozone technologies and save up to 67% of energy consumption per unit.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
002_SYSTEM_PRODUCTION	**PRODUCTION** These attributes refer to the options to improve the efficiency and to optimise the production process. It focuses on energy and material use during production, as well as process loss and waste generated, and the potential for circularity. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Process complexity**	It refers to the level of intricateness of the production process. It can be simplified as the number of production processes (the less, the better).	The facility cannot futher minimise the number of steps in the production. Is this statement true?		
		Overall efficiency of production	It refers to the capability to produce the desired results without wasting inputs of any type (materials, time or energy): I) Energy efficiency refers to the percentage of total energy that is consumed in useful work and not wasted as useless heat. II) Water efficiency refers to ensure a production technology that produces the desired results without wasting water. III) Materials efficiency refers to produce the desired results without wasting materials, often using better technology.	Can the facility improve the efficiency of their technologies?		
				Does the facility monitor production flows?		
		Renewability of energy	A renewable resource is a natural resource which can replenish with the passage of time, either through biological reproduction or other naturally recurring processes.	Can the facility use renewable energy sources?		
		Origin of energy	The origin of energy refers to the geographical location from which it is obtained. Local energy is desirable.	Can the facility get the energy locally?		
		Waste generation and treatment	It refers to the amount of waste generated in the production processes and the way it is treated. Also in how this waste is managed	Has the facility a waste inventory for the identification of non hazardous and hazardous waste?		
				Is it possible to reuse the waste generated? Or to to reduce the rejects generated?		
				Can the facility recover and reuse wasted materials from their own production process?		
		Water Management	It refers to the amount of water used in the production processes and the way it is treated and managed. Thus, it is a consequence of an inefficient use of resources in production.	Is the facility recording the water income and outcome?		
				Is the facility reusing the water in any process?		
		Chemicals Management	It refers to the amount of chemicals used in the production processes and the way it is treated and managed. Thus, it is a consequence of an inefficient use of resources in production.	Does the facility have any program to reduce the hazardous chemicals?		
				The facility cannot improve further minimise chemicals use and their waste is properly managed. Is this statement true?		
		Closed/Open production cycle	Open loop systems are of linear nature, in which resource and capital investments move through the system to become waste, whereas closed loop systems are those where wastes can become inputs for new processes. Production demand and no generating deadstock.	Can the facility exchange materials, water and energy flows with other companies nearby?		
				Can the facility design the material so at the end of its life it can enter the production cycle again? It can either be your own production cycle or those of other companies (waste is used as a resource)		
				Does the facility have an implemented robust preventive maintenance system to reduce production downtimes?		
		Production - market location	It refers to the geographical distance between the production place and the market for the given product/service. Generally, the shorter distance, the better. Can you reduce the distance between your production plance and the market?	Is it possible to relocate the production plant? Or to build new plants in strategic locations?		

Step 02

Ecodesign assessment tool

System packaging assessment

In this step, the main packaging issues are identified and also the retail network infrastructures. The key environmental aspects for this step are related to:
Packaging material shape, size and weight. Innovative packaging design and materials, and new means of transportation are getting commonly used. In many cities, environmental friendly alternatives are working very well. Small and sustainable packages are delivered on foot or by bicycle, a greener way to bring our value to customers.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
003_SYSTEM_PACKAGING	**PACKAGING** These attributes refers to the various aspects that you can take into account when designing the packaging of your product: materials, shape, disposal after use, and labelling. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Standardization of packaging sizes**	It refers to the use of packaging whose size complies with existing size standards. These standards have the aim to help the industry (incl. packaging, producers, transportation) by making mutually consistent decisions on the size of the elements (packaging), so all parties can realize mutual gains.	Is the facility using a standard packaging? if not, could it be adjusted to a standard?		
		Amount and type of packaging materials	It refers to the quantity (weight) and the number of different typologies of materials involved in the packaging.	Could be used less packaging material (e.g. Making it lighter)?		
		Packaging to Product ratio	Ratio between the volume or weight of the packaging and the volume or weight of the product. The smaller, the better.	Could be the packaging volume reduced? Could be the packaging lighter without compromising the strength?		
		Renewability	Packaging can be made of renewable materials.	Is the packaging made of renewable materials?		
		Packaging recyclability, reuse or recovery rate	It refers to the percentage of packaging that can be effectively recycled, recovered and/or reused.	Can the packaging be recycled?		
				Is there the possibility for recovering and reusing the own packaging?		
		Recycled content	The proportion, by mass, of recycled material in a product or packaging.	Can the packaging include recycled material without compromising its quality, properties and strength?		
		Waste from packaging	It refers to the amount of waste generated related to the packaging (e.g. A reusable packaging will generate less waste than a disposable one).	Are the number of packaging layers used for the products reduced to the essential?		
		Freight transport damage	It refers to the damage suffered by the products during their transport, partly due to the packaging used.	Could the packaging be improved in order to reduce transport damage?		
		Labelling	It refers to the labelling in place, which could identify the materials used in the packaging and, thus, provide an indication on the best waste management option for them.	Is the packaging properly labelled?		

Step 02

Ecodesign assessment tool

System distribution assessment

In this step, the main logistics issues are identified such as distribution, and retail network infrastructures. The key environmental aspects for this step are related to the means of transportation and distances.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
004_SYSTEM_DISTRIBUTION	**DISTRIBUTION** These attributes refer to the logistics and the various ways a product can be transported. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Environmental sustainability of logistics**	It refers to the overall environmental performance of the logistics in place.	Could the company optimize the travelled miles or improve the system?		
		Efficiency of transported load	It refers to the optimization of the ratio between the transported load and the loading capacity or the transported volume and the volumetric capacity of the transportation mode.	Can the product be designed so it occupies less volume and the capacity for transport can be increased?		
		Transportation routes and distances	It refers to the routes and distances used to transport goods from one place to another (routes may be quite straightforward or on the contrary redundant).	Can transport routes be optimised?		
		Ecofriendly driving	It refers to the practice of driving in such a way as to minimize fuel consumption and the emission of carbon dioxide.	Are the drivers trained for an ecofriendly driving?		
		Transportation system	It refers to the overall environmental impact of the transportation system used (train, ship, truck,...), thanks to which ransportation modes could be prioritized. For example, transporting 1 ton by ship is environmentally preferable than by train, and by turn, the train is preferable than the truck.	Is the most common mode of transportation the most efficient of all?		
		Technology of the vehicle	The technology of the vehicle conditions not only the performance of the vehicle but also its environmental impact, such as the exhaust gases released and the amount of fuel consumed. Some vehicles, such as cars, are classified according to eco-friendly technologies (EURO 4, EURO 5, etc...).	Does the company choose mostly very new efficient vehicles, big trucks (40Ton) or train instead of aeroplanes?		
				Could the company use vehicles with fewer exhaust gases?		
		Renewability of fuels	It refers to the use renewable energy in vehicles. For example: biomass, electricity from solar panels or wind, etc.	Can the company switch to renewable resources for your vehicles?		

Step 02

Ecodesign assessment tool

System use & mantenance assessment

The use phase is related to the customer interaction with the product. It can be split in three main groups:

Products directly using resources (consumables, energy and water, above all) such as a lamp or a laptop.
–
Products with high maintenance (water, soap, energy...) such as textiles or cutlery.
–
Products with low maintenance (almost no resource input to maintain them or make them work) such as a chair.

The focus are the second groups. Promoting labeling information for textile care, promoting design for durability, design for easy repairing will help to create a long-lasting products.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
005_SYSTEM_USE&MAINTENANCE	**USE & MAINTENANCE** These attributes relate to the energy and material consumption during use and the maintenance of products throughout their life. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Reliability**	It refers to the trustworthiness to do what the product/service is expected or designed to do (e.g. It will fulffill our expectations, it won't get broken, etc.).	Has the company any procedures or testing methodology for the test of several issues regarding reiability?		
		Environmental communication for the use	It refers to the (un)existence of environmental communication aspects aiming to promote an environmentally-friendly use by the user.	In the labelling or the instructions manual, is the company promoting environmentally-friendly use of the product?		
		Efficiency at use	It refers to the capability of the product to use materials and energy wisely and without generating waste during its use or performance.	Does the product generate any waste at use ? Can it be reduced or eliminated?		
		Potential to customize the product	User customization allows for the customer to create a personalized variation of the initial design, which may create an attachment between the product and the user.	Have you thought about customising the product? How it would look like?		
		Product's life span	The product's life span refers to the durability of the product, that is to say, for how long will it be used. There are several conditionants to it: timelessness, durability, adaptability, customer's appreciation and reusability. The longer the life span, the better.	Does the product allow the user adapt or adjust to different needs?		
				Does the product ensure high lifespan apreciation of the product?		
				Can the hight lifespan be introduced when designing the product?		
				Can the product be designed for last longer?		
				Is the product-service system oriented?		
				Can the product be reused?		
		Multifunctionality	Capacity to perform different functions, intrinsically-related to the design.	Can the multifuntionality be introduced when designing the product?		
		Handling of the product / Ergonomics	Product ergonomics refer to the design factors intended to maximize productivity (results) while minimizing operator fatigue and discomfort.	Can the product be designed in a way that reduces the negative side health effects on its users?		
		Storage potential	It refers to the ability to be stored occupying the minimal volume/area and freeing up space.	Can the storage potencial be introduced when designing the product?		
		Need of process materials	Process materials during the use stage are those materials necessary for the functioning of the product. Some products may require many process materials (e.g. A tonner in the case of a printing machine, or soap in the case of a washing machine) while others are designed to reduce its demand.	Can the efficiency be improved in terms of material use of the product during functioning?		
		Waste generation during use or functioning	Amount of waste generated during the use or funtioning of your product.	Can the amount of waste generated be reduced?		
				Do the product release microplastics when using it?		
		Maintenance needs	Maintenance involves fixing any sort of mechanical, plumbing or electrical device should it become out of order or broken; it also includes performing routine actions which keep the device working in order or prevent trouble from arising.	Does the company communicate how to maintain the product?		
				Does the product been designed for easy cleaning?		
				Can it be fixed by the user or does it need technical assistance?		
		Upgrading possibilities	Upgrading is the process of replacing a product with a newer version of the same product, in order to bring the system up to date. The replacement of some parts of a product/service may upgrade it and improve its characteristics.	Have you ever thought on this possibility for the product? It's been designed to be upgraded?		
		Repairability	Ability of a damaged or failed equipment, machine or system to be restored to acceptable operating condition within a specified period (repair time). A product may be repairable while having low maintenance needs.	Can the product be repairable?		
				Does the company communicate how to maintain the product?		
		Availability of spare parts	Spare parts, also known as service/repair/replacement parts, are an interchangeable part that is kept in an inventory and used for the repair or replacement of failed units.	Does the product use stadarized components?		
				Can the company make spare parts available?		

Step 02

Ecodesign assessment tool

System end of life assessment

This is the end of the product life, but, what happens afterwards depends on the way the company thought about it in the design stage. A very good eco-design could make the product practically 'immortal', defying 'obsolescence' (a premature 'end'), completely eliminating the concept of waste towards some kind of 're-birth' in a new industrial product or safe organic matter back to nature (within the natural recycling system). The application of eco-design strategies in the end-of-life stage may unlock very interesting opportunities for improving environmental performances and obtaining savings or new revenue streams. Many products can be resold and reused in a cascade of other market sectors, so it is key to rethink the way we design our product or define our service to seize these opportunities.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
006_SYSTEM_ENDOFLIFE	**END-OF-LIFE** These attributes refer to the different ways a product can be repaired or discharged in order to expand its life or that of its components as long as possible. It is at design level that these aspects should be thought of. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Separability of components and/or materials**	Ability to separate the components and/or materials, in order to manage each of them in an adequate manner.	Are the components of the product easily separable so it can be comfortably disaggregated at the end of life? It is possible to introduce this aspect during the design process?		
				Can be the product designed for easy dissassebly?		
				Can be the product designed for recyclabilty?		
				Can be the product designed without harmful substances?		
		Communication about end-of-life	It refers to the (un)existence of information regarding the end-of-life management of the product/service or its parts.	Can the company introduce an explanation on how to manage the product at the end of its life?		
		Identifiability of materials	Information regarding the type of material, which is useful for an adequate waste management.	Can it be added a list of all the materials that compound the product?		
		Reusability	Capacity to use again a product .	Can the product be designed in a way that it could be reused easily?		
				Can the establish a system to recover your product or its components?		
		Environmentally-sound waste management	A given waste stream may be treated by means of different waste management systems and technologies, which probably have different environmental performance. An environmentally-sound management prioritizes material recovery and, secondly, energy recovery (and ultimately landfilling).	Can the product be easily identifyed to facilitate sorting by color and by type of fiber?		
		Energy valorization potential	Potential to recover energy from waste (the greater, the better; having in mind that it is always preferrable to make a material recovery if possible).	Can de product be energy recovered as a last option and end of life?		

Step 02

Ecodesign assessment tool

System corporate management assessment

This section analyzes the governance of the company and the aspects most related to social challenges, legal compliance, sustainability management and labor practices. The objective is to identify what opportunities and shortcomings the company presents in order to improve the internal performance in sustainability governance, both environmental and social.

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
007_SYSTEM_CORPORATE MANAGEMENT	**Sustainability in corporate management provide the information of the governance inside the companies.**	**Sustainable Business corporate management**	Internal sustainable performance is important because it builds a strong foundation for long-term success. It ensures you're operating efficiently, minimizing environmental impact, and fostering a positive work environment – all crucial for attracting and retaining talent, reducing costs, and building a resilient business for the future.	Does your company has any compilation system due to internal procedures regarding envirormental policy, ethic code, etc.?		
				Has the company settled goals for continous improvement regarding the environmntal performance in all operations?		
				Does the client ask about envirormental requeriments?		
				Is sustainable innovation and co-creation a priority in the company?		
		Green procurement	Green procurement, also known as sustainable procurement, is the strategic acquisition of goods and services that minimize environmental impact across their entire life cycle. This goes beyond just the initial purchase price and considers factors like: Resource extraction and production: Minimizing use of virgin materials, prioritizing recycled content, and considering ethical sourcing practices. Product use: Focusing on energy and water efficiency, durability, and potential for reuse. End-of-life management: Prioritizing products that are easily recyclable, biodegradable, or have minimal disposal impact. Green procurement involves setting clear environmental criteria for purchases, evaluating suppliers' sustainability practices, and using a life-cycle costing approach to factor in long-term environmental benefits.	Is the company buying most of supplyed goods and services needes from green labelled suppliers?		
				Is the company requeriment buying some ecolabelled or certified supplier?		
				Is the environmental information about the supply chain and labels accessible for all stakeholders?		
		Labor Conditions & Polices	Conducting social audits, managing labor conditions, and creating supply chain policies are essential for ethical and sustainable business practices. Social audits identify potential labor violations, ensuring workers throughout your network are treated fairly and work in safe environments. By setting clear policies and managing these conditions, you protect your brand reputation from ethical scandals and potential legal issues. Most importantly, a strong focus on worker well-being fosters a more productive and stable supply chain, contributing to long-term success for your company and all involved. Internal labor management is important because it creates a strong foundation for a successful and sustainable business. By fostering a positive work environment, ensuring fair treatment and competitive wages, and prioritizing employee well-being, you cultivate a loyal and productive workforce. This translates to lower turnover rates, higher morale, and ultimately, increased efficiency and profitability for your company.	Are the company's objectives set to adopt a gender equality policy?		
				Are the company workers and suppliers fairly paid, safe and protected within the legal framework?		
				Is the company adopting social responsibility policy towards all the stakeholders connected with the company?		
				Does the company undergo social audits?		

Road map for the creation of a sustainable action plan

Step 03

Choosing & identification

Handbook for companies

T&A MSMEs' TRANSITION TO CE

switchasia GRANTS PROGRAMME

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Step 03

The what & how?

How to choose & prioritize

Create a materiality matrix

A **materiality matrix** is a tool used by companies to identify and prioritize the social, environmental, and economic issues that are most important to their stakeholders and that have the greatest potential to impact their business. Firstly, we need to identify the main impacts (social, labour and economic) of the business model and operations of the company; then, we need to identify our stakeholders so that they can also decide which the priorities should be.

Mainly this consultation is made through questionnaires. Then, the result of the consultation is shows in a matrix where the most important (material) issues are (in the top quadrant of the matrix). By engaging with stakeholders to identify their priorities, companies can gain a better understanding of the issues that are most important to them, and they need to prioritize and manage. Also, legislation and requirements from brands are criteria for the decision-making.

This information on the matrix ensures that the company is focusing on the issues that matter most to its stakeholders, but also identifying their priorities, companies can better manage the risks associated with those issues. This can help to prevent reputational damage and other negative consequences and be more efficient in the sustainable managing of their business.

How to create the matrix:

01. Define Purpose and Scope:
Start by outlining the goals of your materiality analysis. Are you focusing on environmental, social, and governance (ESG) aspects? Or is there a specific area you want to delve into?
Determine the timeframe for the analysis and any limitations.

02. Identify Stakeholders:
Recognize all groups that have an interest in your company's performance. This includes investors, employees, customers, suppliers, regulators, and communities.

03. Conduct Stakeholder Outreach:
Engage with your stakeholders through inteviews, surveys, workshops, or focus groups.

Step 03

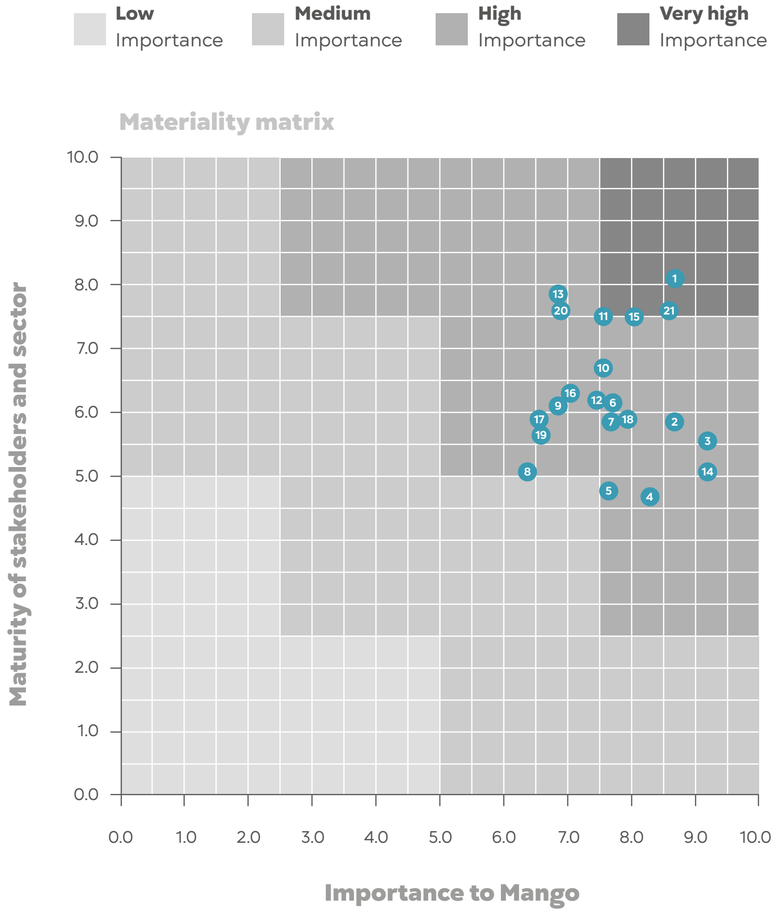
The what & how?

Gather their perspectives on the social, environmental, and economic issues most relevant to your company.

04. Specify Potential Material Topics:
Based on internal data (financial performance, environmental impact reports) and stakeholder input, brainstorm a list of potential material topics.
Consider using sustainability frameworks like GRI (Global Reporting Initiative) or SASB (Sustainability Accounting Standards Board) for guidance.

05. Collect and Analyze Insights:
Design a survey or questionnaire to gather stakeholder feedback on the importance of the identified topics.
Analyze the data to understand how stakeholders prioritize these issues.

06. Prioritize Material Topics:
Plot the topics on a materiality matrix. This is a graph where the x-axis represents the economic impact (significance to the business) and the y-axis represents the social and environmental impact (importance to stakeholders).
Topics in the upper right quadrant are the most material, requiring the most focus in your sustainability strategy.



Governance, responsibility and integrity

1 governance
2 ethics and integrity
3 risk management
4 resilience
5 commitment to stakeholders
6 transparency in communication
7 management of innovation
8 value generated and distributed

Environmental impact management

9 climate change strategy
10 minimisation of environmental impact
11 sustainable use of resources
12 design of sustainable products
13 circularity

Relations with the community and stakeholders

14 management of the relations with customers
15 responsible purchasing
16 protection of human rights
17 commitment to local communities

Employees development

18 employment quality
19 diversity, equality and inclusion
20 health and safety
21 development of human capital

Step 03

Road Map for MSEM'S

Choosing the atributes

In this third step, the company has to choose the main attributes that most affect their operations, and where the improvement must be taken. The attributes are chosen based on the prioritization of areas made through the Materiality exercise, the legal and brand requirements, ans the processes inside the facility. The excel sheet is also been designed so the company can see several strategies and actions to implement for the improvement. In this way, the company can start to develop their action plans.

The next steps to follow are:

Code	Life cycle	Attribute	Attribute description	Assessment	Yes	No	Life cycle stage road map	Strategy code	Strategy description	Action plan	Time line (Short, Medium, Large)	Resources	Responsible
001 system raw materials	Raw materials	Diversity of materials	Number of different typologies of materials involved in the product. In general, less is better.	Does your product combine different types of fibers?			**Raw materials** What strategies will lead to your sustainable vision? What strategies will improve the sustainability of your raw materials?	RW-001-A	Reduce the number of different types of material used to produce your product.	Sustainable raw material plan			

Self-Assessment part

Road Map for the Sustainable Action Plan

Step 03

Road Map for MSEM'S

01.
Challenges identifications.
Based on the self Assessment exercise, identify the most important attributes related with the main activity on the company. This handbook provide a huge number of strategies, perhaps not all of them will be suitable for the company. So here, the person doing the workshop will have to identify the attributes (challenges) that the company want to work on. The company also should choose the attributes regarding the brands and legislation requested.

02.
Choosing the strategies that most fit in the main activity of the company.
Companies will have to choose which strategies fit most to their operations and activities, witch ones make more sense to them, related with their main impacts, and the brands and legal requirements.

03.
Grouping the strategies through concrete Actions.
It is important to get context from this aspects creating a list and review what are the international vanguards and best available technics. The tool provide a column named Action Plan, with a guideline of the action that the company can try to implement. The next column has the strategies that are linked to the attributes that the company has already chosen.

04.
Set goals.
A plan need set goals and this goals should have timing, what resources will be needed, persons that are be involved. It's time to set a timeframe for the implementation of the action, it can be divided into most priority to less priority. Also the tool let to mark a responsible person that will implement the action in the company. A model of a factsheet is provided to help stablish goals, tasks, and responsible. For each Action there must be a factsheet created.

05.
At the end, the company will have this **excel tool** fulfilled with the concrete actions to develop, with a timeframe and with a person in charge.

Step 03

Road Map for MSEM'S

Challenges identifications

Identify through the assessment the key aspects of the company. Those attributes where the company believes there can be improvement. Other attributes may not apply due to the type of product the company is producing.

The assessment makes possible to carry out a diagnosis of the company, to see and identify positive aspects, to identify practices that have just been carried out and can be implemented. It also allows to identify those aspects of improvement or that there is still a stretch of improvement.

Based on this identification, the company can start to establish and prioritize which challenges will face.

Since Excel is divided into life cycle sections, you can group the challenges for each of the stages.

What attributes are relevant to your product?

After identifying your product's life cycle stages, it is time to select the attributes that are relevant to each. Attributes are items required throughout a product's life cycle: materials, energy and water use before and during the production process as well as during use; means of transport and distribution; the various ways the product needs to be maintained during use, and the means of disposal. Not all the attributes listed in the tool will be relevant to your product. Switching out attributes for more sustainable alternatives will bring your product closer to that sustainable vision.

In the following diagram, each stage of the life cycle is linked to a list of default life cycle attributes. Clicking on each icon, make your way through the life cycle and consider which attributes from the displayed list are NOT relevant to your product.

To do so, try to answer the following question: Does it make sense to think about this specific attribute? As you go through, UNSELECT only those attributes that do not relate to your product, those that do not make sense.

The resulting list of selected attributes will be long, but don't worry. The next step will have you evaluate which attributes would have the most impact on your product's sustainability. Make sure that you understand the meaning of each attribute, so you're sure about which ones to unselect. You can add new attributes if needed.

Step 03

Road Map for MSEM'S

Code	Life cycle stage road map
001_ SYSTEM_ RAWMATERIALS	**RAW MATERIALS** These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery agter use. So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components,... . **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your raw materials?**
002_ SYSTEM_ PRODUCTION	**PRODUCTION** The strategies propose different options to improve the efficiency and to optimise the production process. It introduces new approaches such as the potential for circularity, the use of new technologies, or to change the productions process. **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your production process?**
003_ SYSTEM_ PACKAGING	**PACKAGING** These strategies look for alternatives in the way you design your packaging, focusing on materials' substitutes and optimised shapes, while maximising its durability and facilitating its recovery after use. **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your packaging?**
004_ SYSTEM_ DISTRIBUTION	**DISTRIBUTION** These strategies offer options to tranport, focusing on means of transport, capacity load and vehicle efficiency. **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your distribution?**
005_ SYSTEM_ USE &MAINTENANCE	**USE & MAINTENANCE** These strategies provide various approaches to optimise the energy and material consumption during use and various possibilities to maintain products as long as possible. **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your product's use and maintenance?**
006_ SYSTEM_ ENDOFLIFE	**END-OF-LIFE** These strategies offer various possibilities to expand the life span of your product or the materials and components embeded in it when it is ready to be disposed, thus after use. **What strategies will lead to your sustainable vision?** **What strategies will improve the sustainability of your product's disposal?**
007_ SYSTEM_ CORPORATEMANAGEMENT	**Sustainability in corporate management provide the information of the governance inside the companies.** Managing corporate sustainability is critical because it balances profit with environmental and social responsibility. This means reducing waste, being ethical, and giving back to the community. By doing so, companies attract eco-conscious consumers, improve brand image, and even cut costs through resource efficiency. It's a win-win for the planet, society, and the company's long-term success.

Step 03

The what & how?

How to choose & prioritize

Select the attributes related with your main impact

Attributes should be selected based on:

The processes where the company can improve more.

–

The legal and brand requirements.

–

The prioritization given through the materiality exercise.

Example

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
001_SYSTEM_RAWMATERIALS	**RAW MATERIALS** These attributes relate with the type of materials and natural resources needed to produce a specific product, as well as their characteristics. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Diversity of materials**	Number of different typologies of materials involved in the product. In general, less is better.	Does your product combine different types of fibers?		
		Ecological rucksack of materials	Weight and material properties of the materials involved in the product. The less material has to be used in a product, or the longer it lasts, the less resources will be consumed in the production process.	It could be minimize the variety of materials used in the textile product while ensuring functionality and quality?		
				It could be possible using the lightest materials to build the product?		
		Renewability	It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.	Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification ((GRS, GOTs, FSC, others) of the textile product?		
		Recyclability	A renewable resource is a natural resource which can be replenished over time, either through biological reproduction or other naturally recurring processes.	Can the company switch from non-renewable to renewable material sources? (example; can the company switch from poliester and synthetic fibers to natural or celulosic fibers?)		
		Recycled content & Recovered components	The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.	Can the company improve the reciclability of the product?		
		Biodegradability	The proportion, by mass, of recycled material in a product or packaging. Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).	Is the company producing any product made of fully recyclable materials?		
		Material's availability	The capability of being decomposed by biological agents, especially bacteria.	Can the company switch from non-biodegradable to biodegradable materials? Is the company using compostable or biodegradable organic materials?		
			Geographical location from which materials are obtained; and/or amount of resources (materials) that are fundamental for the product provided left in nature. Some substances (materials) are already scarce. Local materials are desirable due to shorter distances.	Does the company use the majority of materials (more than 70%) required for the textile product, which are readily available and commonly found within your region (within a 300km radius)?		

Road map for the creation of a sustainable action plan

Step 04

Choosing strategies

Handbook for companies

T&A MSMEs' TRANSITION TO CE

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Step 04 The what & how?

Strategies and action plan

Select the strategies linked to the attributes chosen for each lifecycle stage

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No
001_SYSTEM_RAWMATERIALS	**RAW MATERIALS** These attributes relate with the type of materials and natural resources needed to produce a specific product, as well as their characteristics. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Diversity of materials**	Number of different typologies of materials involved in the product. In general, less is better.	Does the product combine different types of fibers/ materials?		
		Ecological rucksack of materials	It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.	Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification ((GRS, GOTs, FSC, others) of the textile product?		
		Renewability	A renewable resource is a natural resource which can be replenished over time, either through biological reproduction or other naturally recurring processes.	Can the company switch from non-renewable to renewable material sources? (example; can the company switch from poliester and synthetic fibers to natural or celulosic fibers?)		
		Recyclability	The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.	Can the company improve the recyclability of the product? Has the company the knowledge about how raw materials can be recycled or reused when this product reaches the end of its useful life?		
				Has the company avoided composite materials, banned substances, and combinations of materials in order to achieve better recyclability? If it is applicable; farming, harverstsing and fiber preparation treatments is performed with no toxics, banned or unknown chemicals. Is this a statement true?		
		Recycled content & Recovered components	The proportion, by mass, of recycled material in a product or packaging. Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).	Does the company easily use materials that come from recycled sources?		
				Is the company producing any product made of fully recyclable materials? The company can re-use any component to produce the product?		
		Biodegradability	The capability of being decomposed by biological agents, especially bacteria.	Can the company switch from non-biodegradable to biodegradable materials? Is the company using compostable or biodegradable organic materials? Is the company developing any biobased product to substitute any non renewable resource?		
		Material's availability	Geographical location from which materials are obtained; and/or amount of resources (materials) that are fundamental for the product provided left in nature. Some substances (materials) are already scarce. Local materials are desirable due to shorter distances.	Does the company use the majority of materials (more than 70%) required for the textile product, which are readily available and commonly found within your region (within a 300km radius)? Does the company use the majority of the materials (more than 70%) for the textile product sourced in an environmentally sustainable manner, considering factors such as eco-friendly production methods, renewable resources, and ethical supply chain practices?		

Life cycle stage road map	Strategy code	Strategy	Strategy description
RAW MATERIALS These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery agter use. So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components,... . What strategies will lead to your sustainable vision? What strategies will improve the sustainability of your raw materials?	RW-001-A	Reduce the number of different types of material used to produce your product.	In general, a reduced number of different types of materials is desirable, since it simplifies all life cycle stages (e.g. procurement of materials, production processes, management of wastes, etc.). However, this strategy may be difficult to achieve for reasons of function, strength, etc. Can the company reduce such number? Mono-materials are fabrics or garments that are made entirely from a single type of fibre, such as cotton, polyester, or polyamide. Using mono-materials in the textile sector helps the recycling process because they are easier to separate and process than mixed materials, which often contain different types of fibres, dyes, and finishing chemicals. Mono-materials can also reduce the environmental impact of textile production and consumption, as they can be made from renewable, biodegradable, or compostable sources, such as bio-based plastics or cellulosic fibres. Mono-materials are becoming more popular in the fashion and apparel industry, as they offer both sustainability and performance benefits. Can the company reduce such number?
	RW-001-E	Use materials and components with lower ecological rucksack.	The materials and compoments of your product have an environmental impact. You could select those products and suppliers that have lower ecological rucksacks (e.g. they need less energy or materials to be produced, they have less life cycle emissions, etc.). For example, if you are a food producer, you may choose organic, local and sustainable ingredients.
	RW-001-F	Select suppliers and products under ecolabelling systems or providing environmental information.	Certified and ecolabelled materials are preferable. Check whether you can use these materials or components to produce your product. Can you choose better raw material in order to improve the ecological rucksack?
	RW-001-G	Prioritize renewable raw materials.	Renewable raw materials are not of fossil origin but are made, in most cases, from plants. Their use presents benefits, since other limited resources are not used and, in addition, it provides for adequate disposal. Identify the low-impact fibers from renewable sources most suitable for the type of company and the activity carried out there. Is the company using any renewable or organic material instead of other that are not?
	RW-002-A	Prioritize recyclable materials.	Make sure that not only the characteristics of the material are adequate for recycling, but also that there exist the necessary infrastructure to recover and recycle materials.
	RW-002-B	Select materials without toxic, nocive and harmful substances.	Toxic and/or harmful substances (e.g. heavy metals, dioxins, etc.) may have serious effects on the environment and health even if used in small quantities and should be avoided where possible during the whole life cycle. They impact product recyclability. Can you use non-toxic substances or materials ?
	RW-002-C	Prioritize materials with a high recycled content.	The prioritization of materials with high recycled content promotes a circular economy in which materials are recycled and converted into new products. An example of products thay one may find with high recycled content is paper, glass or aluminum, for which there are options produced from secondary materials. Does the activity of the company allow to use recycled material?
	RW-002-D	Use of recovered components.	Using recovered components avoid the need to produce new components and, thus, all associated impacts. This may result in an environmental benefit but also an economic one.
	RW-002-E	Select biodegradable materials.	When selecting biodgradable materials, it is important not to forget the product use expectatives and, therefore, select materials that satisfy the technical and durability requirements for the product. In textile, the most urgent aspect is to work with non-toxic chemistry, in order to provide safe and help imporve the recycling materiality when the products end it's life.
	RW-003-A	Select local materials to reduce transportation demand.	Using regionally available raw materials reduces the requirement for transportation and thus environmental damage caused by increasing traffic. Thus, one has to take into account the environmental impact through emissions such as CO2, NOx, dust, and noise. The necessary input for transportation depends on factors such as mass and volume of the cargo, hauling distance, choice of the means of transportation, and number of hauling operations required. Can you get your materials or components nearby?

Example

Step 04

Road map for MSME's

Create actions for the implementation of the strategies

Choose the categories and attributes that you want to improve and the strategies that will help make your service/product more sustainable!

It's time to decide which stages need improving and what strategies to follow. These strategies will make up your action plan.

To each attribute corresponds a strategy, classified into groups for the action plan.

This column identifies the various actions that group together a series of strategies that can be used to achieve the objectives.

Code	Life cycle stage road map	Strategy code	Strategy	Action plan
001_SYSTEM_RAWMATERIALS	**RAW MATERIALS** These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery agter use. So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components,... . What strategies will lead to your sustainable vision? What strategies will improve the sustainability of your raw materials?	RW-001-A	Reduce the number of different types of material used to produce your product.	**SUSTAINABLE RAW MATERIAL PLAN** Develop an internal strategy for the progressive substitution of non-renewal fibers to the renewal ones, following different steps: 1. Evaluate the designs coming from the brands to make design counter-proposals with fewer materials. 2. Choose certified materials over materials that do not have environmental information. Implements Certifications GOTS, GRS, OCS, RCS, NATIVA, RWS, OEKOTEX, etc... 3. Monitor the progress and replacement of the quantity of models made with less impactful fibers. 5. Set fiber replacement goals.
		RW-001-E	Use materials and components with lower ecological rucksack.	
		RW-001-F	Select suppliers and products under ecolabelling systems or providing environmental information.	
		RW-001-G	Prioritize renewable raw materials.	
		RW-002-A	Prioritize recyclable materials.	**DESIGN FOR RECYCLABILITY** Work with recyclable fibers. Eliminate toxic and chemical substances not allowed in the REACH regulations. Work as much as possible with monomaterials to make recyclability easier. 2. Investigate the possibility for incorporating recycled material into the products that the comapny develops ussually. Create products that incorporate an % of recycled material without losing their durability.
		RW-002-B	Select materials without toxic, nocive and harmful substances.	
		RW-002-C	Prioritize materials with a high recycled content.	
		RW-002-D	Use of recovered components.	
		RW-002-E	Select biodegradable materials.	
		RW-003-A	Select local materials to reduce transportation demand.	**SUPPLY FOR LOCAL MATERIAL** 1. Identify the origin of the materials used in the company's activity. Prioritize suppliers to be able to always choose the closest ones when possible. Establish goals to increase the proximity of materials. Monitor the flow. 2. Identification of scarce materials. Identify if some of the components we use throughout our activity are scarce and try to replace them.

Step 04 The what & how?

Strategies and action plan

Group the strategies into bigger actions (column L)

Example

Attribute selected | *Strategy for solving the problem* | *Action to resolve the problem*

Code	Life cycle stage	Attribute	Attribute description	Assessment	Yes	No	Life cycle stage road map	Strategy code	Strategy	Strategy description	Action plan	Timeline (Short, Medium, Long)	Resources	Responsible
001_SYSTEM_RAWMATERIALS	**RAW MATERIALS** These attributes relate with the type of materials and natural resources needed to produce a specific product, as well as their characteristics. Is there any attribute that you would discard because it is not relevant for your product? Is there any attribute that does not make sense in the system in which you operate and the product that you produce?	**Diversity of materials**	Number of different typologies of materials involved in the product. In general, less is better.	Does the product combine different types of fibers/ materials?			**RAW MATERIALS** These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery agter use. So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components,... . What strategies will lead to your sustainable vision? What strategies will improve the sustainability of your raw materials?	RW-001-A	Reduce the number of different types of material used to produce your product.	In general, a reduced number of different types of materials is desirable, since it simplifies all life cycle stages (e.g. procurement of materials, production processes, management of wastes, etc.). However, this strategy may be difficult to achieve for reasons of function, strength, etc. Can the company reduce such number? Mono-materials are fabrics or garments that are made entirely from a single type of fibre, such as cotton, polyester, or polyamide. Using mono-materials in the textile sector helps the recycling process because they are easier to separate and process than mixed materials, which often contain different types of fibres, dyes, and finishing chemicals. Mono-materials can also reduce the environmental impact of textile production and consumption, as they can be made from renewable, biodegradable, or compostable sources, such as bio-based plastics or cellulosic fibres. Mono-materials are becoming more popular in the fashion and apparel industry, as they offer both sustainability and performance benefits. Can the company reduce such number?	**SUSTAINABLE RAW MATERIAL PLAN** Develop an internal strategy for the progressive substitution of non-renewal fibers to the renewal ones, following different steps: 1. Evaluate the designs coming from the brands to make design counter-proposals with fewer materials. 2. Choose certified materials over materials that do not have environmental information. Implements Certifications GOTS, GRS, OCS, RCS, NATIVA, RWS, OEKOTEX, etc... 3. Monitor the progress and replacement of the quantity of models made with less impactful fibers. 5. Set fiber replacement goals.	Short	Inversion	Team or person in charge
		Ecological rucksack of materials	It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.	Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification ((GRS, GOTs, FSC, others) of the textile product?				RW-001-E	Use materials and components with lower ecological rucksack.	The materials and compoments of your product have an environmental impact. You could select those products and suppliers that have lower ecological rucksacks (e.g. they need less energy or materials to be produced, they have less life cycle emissions, etc.). For example, if you are a food producer, you may choose organic, local and sustainable ingredients.				
		Renewability	A renewable resource is a natural resource which can be replenished over time, either through biological reproduction or other naturally recurring processes.	Can the company switch from non-renewable to renewable material sources? (example; can the company switch from poliester and synthetic fibers to natural or celulosic fibers?)				RW-001-F	Select suppliers and products under ecolabelling systems or providing environmental information.	Certified and ecolabelled materials are preferable. Check whether you can use these materials or components to produce your product. Can you choose better raw material in order to improve the ecological rucksack?				
		Recyclability	The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.	Can the company improve the recyclability of the product? Has the company the knowledge about how raw materials can be recycled or reused when this product reaches the end of its useful life? Has the company avoided composite materials, banned substances, and combinations of materials in order to achieve better recyclability? If is applicable; farming, harversting and fiber preparation treatments is performed with no toxics, banned or unknown chemicals. Is this a statement true?				RW-001-G	Prioritize renewable raw materials.	Renewable raw materials are not of fossil origin but are made, in most cases, from plants. Their use presents benefits, since other limited resources are not used and, in addition, it provides for adequate disposal. Identify the low-impact fibers from renewable sources most suitable for the type of company and the activity carried out there. Is the company using any renewable or organic material instead of other that are not?				
		Recycled content & Recovered components	The proportion, by mass, of recycled material in a product or packaging. Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).	Does the company easily use materials that come from recycled sources? Is the company producing any product made of fully recyclable materials? The company can re-use any component to produce the product?				RW-002-A	Prioritize recyclable materials.	Make sure that not only the characteristics of the material are adequate for recycling, but also that there exist the necessary infrastructure to recover and recycle materials.	**DESIGN FOR RECYCLABILITY** Work with recyclable fibers. Eliminate toxic and chemical substances not allowed in the REACH regulations. Work as much as possible with monomaterials to make recyclability easier. 2. Investigate the possibility for incorporating recycled material into the products that the comapny develops ussually. Create products that incorporate an % of recycled material without losing their durability.			
		Biodegradability	The capability of being decomposed by biological agents, especially bacteria.	Can the company switch from non-biodegradable to biodegradable materials? Is the company using compostable or biodegradable organic materials? Is the company developing any biobased product to substitute any non renewable resource?				RW-002-B	Select materials without toxic, nocive and harmful substances.	Toxic and/or harmful substances (e.g. heavy metals, dioxins, etc.) may have serious effects on the environment and health even if used in small quantities and should be avoided where possible during the whole life cycle. They impact product recyclability. Can you use non-toxic substances or materials ?				
		Material's availability	Geographical location from which materials are obtained; and/or amount of resources (materials) that are fundamental for the product provided left in nature. Some substances (materials) are already scarce. Local materials are desirable due to shorter distances.	Does the company use the majority of materials (more than 70%) required for the textile product, which are readily available and commonly found within your region (within a 300km radius)? Does the company use the majority of the materials (more than 70%) for the textile product sourced in an environmentally sustainable manner, considering factors such as eco-friendly production methods, renewable resources, and ethical supply chain practices?				RW-002-C	Prioritize materials with a high recycled content.	The prioritization of materials with high recycled content promotes a circular economy in which materials are recycled and converted into new products. An example of products thay one may find with high recycled content is paper, glass or aluminum, for which there are options produced from secondary materials. Does the activity of the company allow to use recycled material?				
								RW-002-D	Use of recovered components.	Using recovered components avoid the need to produce new components and, thus, all associated impacts. This may result in an environmental benefit but also an economic one.				
								RW-002-E	Select biodegradable materials.	When selecting biodgradable materials, it is important not to forget the product use expectatives and, therefore, select materials that satisfy the technical and durability requirements for the product. In textile, the most urgent aspect is to work with non-toxic chemistry, in order to provide safe and help imporve the recycling materiality when the products end it's life.	**SUPPLY FOR LOCAL MATERIAL** 1. Identify the origin of the materials used in the company's activity. Prioritize suppliers to be able to always choose the closest ones when possible. Establish goals to increase the proximity of materials. Monitor the flow. 2. Identification of scarce materials. Identify if some of the components we use throughout our activity are scarce and try to replace them.			
								RW-003-A	Select local materials to reduce transportation demand.	Using regionally available raw materials reduces the requirement for transportation and thus environmental damage caused by increasing traffic. Thus, one has to take into account the environmental impact through emissions such as CO2, NOx, dust, and noise. The necessary input for transportation depends on factors such as mass and volume of the cargo, hauling distance, choice of the means of transportation, and number of hauling operations required. Can you get your materials or components nearby?				

Road map for the creation of a sustainable action plan

Handbook for companies

Step 05

Creating the road map

T&A MSMEs' TRANSITION TO CE

switchasia GRANTS PROGRAMME

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Step 05

The what & how?

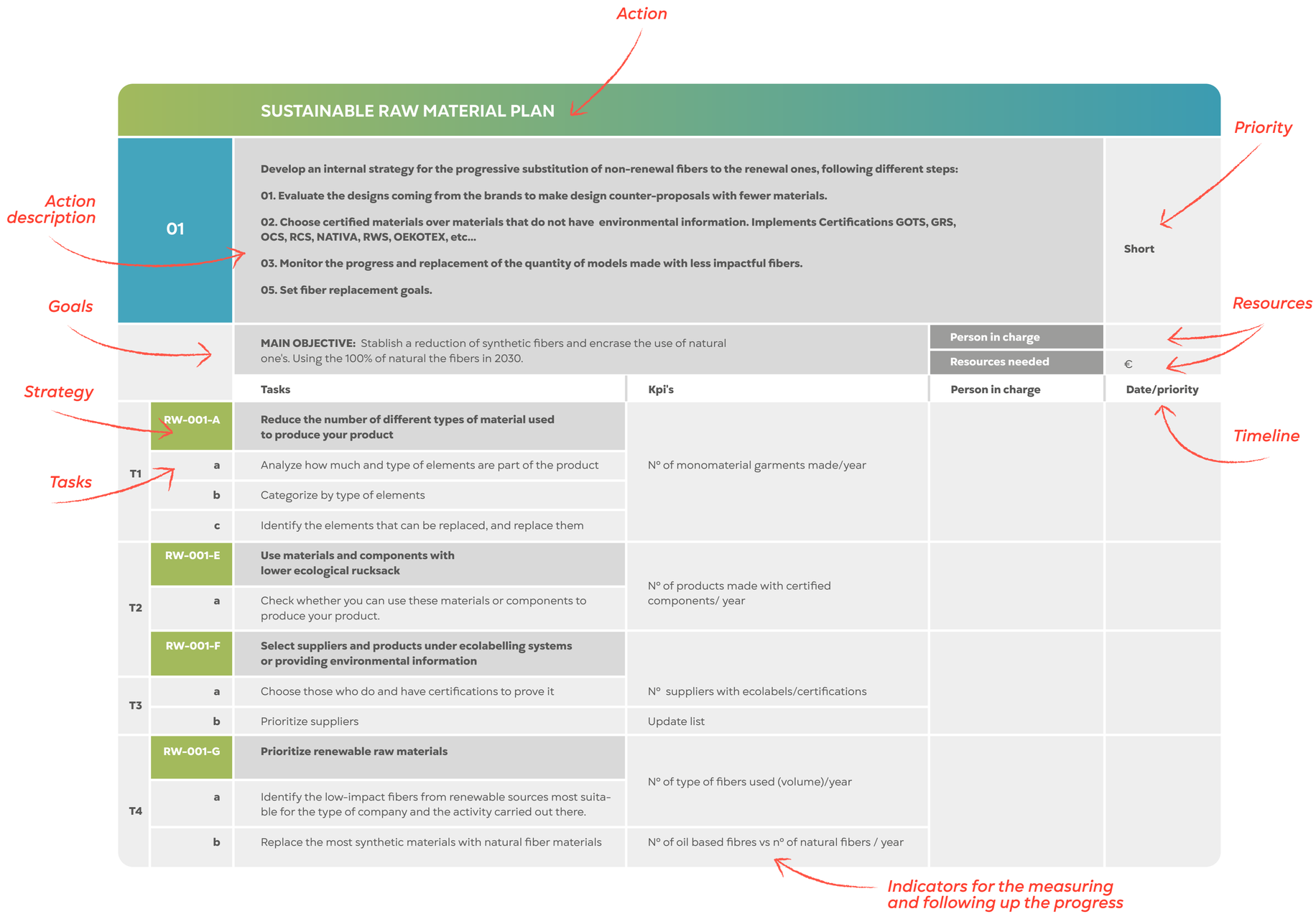
Road map

01.
Create a factsheet for each Action

02.
Stablish goals, tasks, timelines, KPI's, economic resources, human resources, person in charge

For each action create an excel sheet. Also think about objectives in order to implement the actions and follow the progress. This excel sheet let you divide the actions into tasks, with their own objectives, and KPIs. You can also prioritize actions. A column has been added to designate a responsible o in charge person. Also, for the resources or budget you will need for the implementation.

The collection of all the actions in excel the excel sheet will create the Action Plan.



SUSTAINABLE RAW MATERIAL PLAN

01		**Develop an internal strategy for the progressive substitution of non-renewal fibers to the renewal ones, following different steps:** **01. Evaluate the designs coming from the brands to make design counter-proposals with fewer materials.** **02. Choose certified materials over materials that do not have environmental information. Implements Certifications GOTS, GRS, OCS, RCS, NATIVA, RWS, OEKOTEX, etc...** **03. Monitor the progress and replacement of the quantity of models made with less impactful fibers.** **05. Set fiber replacement goals.**		**Person in charge**	**Short**
		MAIN OBJECTIVE: Stablish a reduction of synthetic fibers and encrase the use of natural one's. Using the 100% of natural the fibers in 2030.		**Resources needed**	€
		Tasks	**Kpi's**	**Person in charge**	**Date/priority**
T1	RW-001-A	**Reduce the number of different types of material used to produce your product**	N° of monomaterial garments made/year		
	a	Analyze how much and type of elements are part of the product			
	b	Categorize by type of elements			
	c	Identify the elements that can be replaced, and replace them			
T2	RW-001-E	**Use materials and components with lower ecological rucksack**	N° of products made with certified components/ year		
	a	Check whether you can use these materials or components to produce your product.			
	RW-001-F	**Select suppliers and products under ecolabelling systems or providing environmental information**			
T3	a	Choose those who do and have certifications to prove it	N° suppliers with ecolabels/certifications		
	b	Prioritize suppliers	Update list		
T4	RW-001-G	**Prioritize renewable raw materials**	N° of type of fibers used (volume)/year		
	a	Identify the low-impact fibers from renewable sources most suitable for the type of company and the activity carried out there.			
	b	Replace the most synthetic materials with natural fiber materials	N° of oil based fibres vs n° of natural fibers / year		

Key points

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Key points

Ecodesign methodology

Eco-design is an approach to the **design of products and services** that gives special consideration to **environmental impacts** during the whole **lifecycle** of a product and the full process of delivering a service. It can be defined as the design that considers the environmental aspects and/or impacts associated with products, processes or systems, together with other traditional aspects, such us costs, quality, safety, ergonomics, etc.

–

Eco-designing a product or a service is about the application of strategies that allow to reduce the negative impact of products and services related to the activities and resources needed to produce the product or to provide the service, while generating additional value for customers and stakeholders.

Eco-design also brings in a **supply chain perspective**, as in many occasions the sustainability of a product or service depends on the sustainability of the resources used. So, persuading suppliers to be more aware and encouraging them to incorporate sustainability strategies may impact positively on your final product or service.

–

Bear in mind that this tool will not give you a straight answer on what actions you will have to do in order to improve the environmental performance of your product or service. It is you and your team who, eventually, will identify and plan these actions of improvement.

Life Cycle Thinking seeks to identify possible improvements to goods in the form of lower environmental impacts and reduced use of resources across its life span.

–

The typical life cycle of a product has **6 stages**: I)raw material extraction, II) design and production (manufacture), III) packaging, IV) distribution, V) use and/or consumption plus maintenance, VI) end of life -reuse, recycling of materials, energy recovery and ultimate disposal-.

–

Being aware of the life cycle of the product that you aim to eco-design is preparation for the Environmental Assessment that will be performed afterwards by means of a Qualitative Assessment of a set of Life Cycle Criteria.

Key points

Assessement tool and road map for the sustainable action plan

01.
The **methodology** and the excel sheet want to be a tool for MSMEs to create a **continuous improvement** roadmap and a Sustainable Action Plan.

02.
The tool is divided into **several parts** that guide companies to:

- **Identify** through the Assessment tool those attributes and aspects of your operations that must be changed, that impact the environ ment and the social.
- Once the attributes have been identified, the tool link attributes with **strategies for the improvement**.
- The strategies are then grouped into various **actions** that will make it easier for companies to undertake the transformation journey.

Actions propose what needs to be done to implement the strategies.

03.
Attributes should be chosen based on:

- The **impacts** that the company is generating through its operations.
- The **requirements** linked to the new **legislation.**
- The **requirements** set by the **customers** of the companies, in this context the fashion **brands**.

04.
Each **attribute** is linked to a **strategy** that aims to **mitigate** its impact.

05.
The **Actions column** explains what actions need to be taken to implement the strategies linked to the attributes, which identify the company's impacts.

06.
For each action, an **information sheet** must be created where the following **information** is provided:

- **Description** of the action (what it consists of).
- Specific **objectives/goals** of the action.
- **Strategies** that are part of the action.
- **Tasks** needed for the implementation of each strategy.
- **Timeline**.
- **Priority**.
- **Human** and **financial resources** to carry out the implementation.

07.
The goal is to obtain a file for each of the actions, and this will create the **Action Plan**.

Handbook for companies

Ecodesign strategies

Resources for the implementation

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Ecodesign strategies

What strategies will lead to your sustainable vision?
–
What strategies will improve the sustainability of your raw materials?

001_SYSTEM_Raw Materials

These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery after use.

So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components.

Strategy code	Strategy
RW-001-A	Reduce the number of different types of material used to produce your product.
RW-001-E	Use materials and components with lower ecological rucksack.
RW-001-F	Select suppliers and products under eco-labelling systems or providing environmental information.
RW-001-G	Prioritize renewable raw materials.
RW-002-A	Prioritize recyclable materials.
RW-002-B	Select materials without toxic and harmful substances.
RW-002-C	Prioritize materials with a high recycled content.
RW-002-D	Use of recovered components.
RW-002-E	Select biodegradable materials.
RW-003-A	Select local materials to reduce transportation demand.

001_SYSTEM_Raw Materials

Atribute
Diversity of materials.
–
Description
Number of different typologies of materials involved in the product. In general, less is better.

Does the product combine different types of fibers/ materials?

Strategies

RW-001-A

Reduce the number of different types of material used to produce your product.

In general, a reduced number of different types of materials is desirable, since it simplifies all life cycle stages (e.g. procurement of materials, production processes, management of wastes, etc.). However, this strategy may be difficult to achieve for reasons of function, strength, etc.

Ecodesign strategies

Sustainable raw material plan

Mono-materials are fabrics or garments that are made entirely from a single type of fiber, such as cotton, polyester, or polyamide. Using mono-materials in the textile sector helps the recycling process because they are easier to separate and process than mixed materials, which often contain different types of fibres, dyes, and finishing chemicals. Mono-materials can also reduce the environmental impact of textile production and consumption, as they can be made from renewable, biodegradable, or compostable sources, such as bio-based plastics or cellulosic fibres. Mono-materials are becoming more popular in the fashion and apparel industry, as they offer both sustainability and performance benefits.

Resources

Example 01.
Use of recycled fibres. Bangladesh ramps up use of recycled fabrics in ready-made garments.

Example 02.
Use of Mono-material garment, included accessories. joint news release - inditex and basf develop the first detergent designed to reduce microfiber release from textiles during washing.

Example 03.
GENERAL VISION TO KNOW HOW TO MEASURE SUSTAINABILITY. Measuring sustainability in apparel industry.

Tool 04.
LCA IN TEXTILE SECTOR BY CNTAC. CNTAC Moves Towards a Green Future (shanghaiist.com).

Example 05.
METAVERSE. Clothing does not need to be physical to exist.

Example 06.
DIGITAL SAMPLES. China start-up introduces AI-based technology for virtual fabric samples | Production Technology News China (apparelresources.com)

001_SYSTEM_Raw Materials

Atribute
Ecological rucksack of materials.
–
Description
It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.

Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification (GRS, GOTs, FSC, others) of the textile product?

Strategies

RW-001- E
Use materials and components with lower ecological rucksack.

Ecodesign strategies

Sustainable raw material plan

The materials and components of your product have an environmental impact. You could select those products and suppliers that have lower ecological rucksacks (e.g. they need less energy or materials to be produced, they have less life cycle emissions, etc.). For example, if you are a food producer, you may choose organic, local and sustainable ingredients.

Green washing vs third part certification

Third part certification done through robust standards does that the product ensure social and environmental product attributes.

Resources

Example 01.
ESTANDARS TO DEFINE SUSTIANBALE PORDUCT.
Standards - Textile Exchange

001_SYSTEM_Raw Materials

Atribute

Ecological rucksack of materials.

–

Description

It is the total quantity of materials moved from nature to create a product or service, minus the actual weight of the product.

Is the company using information regarding the environmental impact and sustainability attributes of the materials and components used throughout the lifecycle or any traceability certification (GRS, GOTs, FSC, others) of the textile product?

Ecodesign strategies

Sustainable raw material plan

Certified and ecolabelled materials are preferable. Check whether you can use these materials or components to produce your product.

Best suppliers

Usually social and environmental standard are able to ensure good practices but additionally could rank the best suppliers in order to select the best suppliers in environmental and social topics.

Resources

Example 01.
TREACEABILITY AND SUSTAINABLE ATRIBUTES.
Higg Index Tools - Sustainable Apparel Coalition.

Example 02.
GOTS CERTIFICACIÓN IN SRI LANKA.
GOTS certification in Sri Lanka

Strategies

RW-001-F

Select suppliers and products under ecolabelling systems or providing environmental information.

001_SYSTEM_Raw Materials

Ecodesign strategies

Sustainable raw material plan

Atribute

Renewability.

–

Description

A renewable resource is a natural resource which can be replenished over time, either through biological reproduction or other naturally recurring processes.

Can the company switch from non-renewable to renewable material sources? (example; can the company switch from polyester and synthetic fibers to natural or cellulosic fibers?)

Renewable raw materials are not of fossil origin but are made, in most cases, from plants. Their use presents benefits, since other limited resources are not used and, in addition, it provides for adequate disposal.

Identify the low-impact fibers from renewable sources most suitable for the type of company and the activity carried out there. Is the company using any renewable or organic material instead of other that are not?

Resources

Example 01.
NEW RAW MATERIALS.
Sustainable materials

Strategies

RW-001-G

Prioritize renewable raw materials.

001_SYSTEM_Raw Materials

Atribute
Recyclability.
–
Description
The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.

Can the company improve the recyclability of the product?

Has the company the knowledge about how raw materials can be recycled or reused when this product reaches the end of its useful life?

Ecodesign strategies

Design for recyclability

Make sure that not only the characteristics of the material are adequate for recycling, but also that there exist the necessary infrastructure to recover and recycle materials.

Research and develop and different uses

Textile sector needs research and develop to find new industrial scale to fiber to fiber recycled mainly mixed fibers. Additionally textile sector should focus in other sectors as construction, furniture, etc. to find destination for many waste streams.

Resources

Example 01.
CASES OF RECYCLING IN EUROPE.
Recycling percentage Europe.

Example 02.
RECOVER. COMPANY WHICH DOES MECANICAL RECYCLED. Recover™ Circular Fashion for all | Recover™ (recoverfiber.com).

Strategies

RW-002-A
Prioritize recyclable materials.

001_SYSTEM_Raw Materials

Atribute
Recyclability.
–
Description
The potential to recycle a material, taking into account the difficulty to separate it from other materials, its intrinsic characteristics and its content of toxic substances, which can damage an organism.

Has the company avoided composite materials, banned substances, and combinations of materials in order to achieve better recyclability?

If is applicable; farming, harvesting and fiber preparation treatments is performed with no toxics, banned or unknown chemicals. Is this a statement true?

Ecodesign strategies

Design for recyclability

Strategies

RW-002-B
Select materials without toxic, nocive and harmful substances.

Toxic and/or harmful substances (e.g. heavy metals, dioxins, etc.) may have serious effects on the environment and health even if used in small quantities and should be avoided where possible during the whole life cycle. They impact product recyclability.

Wet process mills

Hazardous chemicals in textile sector are important to consider because they can have adverse effects on human health and the environment, as well as on the business reputation and profitability of textile companies this is specially important in wet process mills.

Resources

Example 01.
EU REGULATION REACH.
Regulation.

Tool 01.
ZERO DISCHARGE HAZARDOUS CHEMICALS.
Roadmap to Zero.

001_SYSTEM_Raw Materials

Atribute

Recycled content & Recovered components.

–

Description

The proportion, by mass, of recycled material in a product or packaging.

Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).

Does the company easily use materials that come from recycled sources?

Strategies

RW-002-C

Prioritize materials with a high recycled content.

Ecodesign strategies

Design for recyclability

The prioritization of materials with high recycled content promotes a circular economy in which materials are recycled and converted into new products. An example of products that one may find with high recycled content is paper, glass or aluminum, for which there are options produced from secondary materials.

Fiber to fiber

Using recycled materials in textile sector is better because it can reduce environmental impact, save resources, create new markets, and improve product quality and safety. Some example could be the recycled cotton or the recycled polyester. There is a trend to find fiber to fiber recycled materials instead of take the recycled raw materials from other sectors as packaging.

Resources

Example 01.

NATURA ENZYMAS FOR FIBER PREPARATION.
Enzymatic textile fiber separation for sustainable waste processing

Example 01.

RECYCLED POLIESTER FIBER TO FIBER.
Jiarenrecycle.com/en/index.php/science

001_SYSTEM_Raw Materials

Atribute

Recycled content & Recovered components.

–

Description

The proportion, by mass, of recycled material in a product or packaging.

Products, components or parts of a production or waste stream captured or separated for reuse (without processing, which would be recycling).

Is the company producing any product made of fully recyclable materials?

The company can re-use any component to produce the product?

Strategies

RW-002-D

Use of recovered components.

Ecodesign strategies

Design for recyclability

Using recovered components avoid the need to produce new components and, thus, all associated impacts. This may result in an environmental benefit but also an economic one.

Review process and continuous improvement

It is important always check if there exist new suppliers of technology or raw materials to get new raw materials or components done by recycled product.

Additionally it is interested to review process and check if is possible to reuse or recycled any component.

Resources

Example 01.

H&M and HKRITA develop new recycled products 香港中華總商會 The Chinese General Chamber of Commerce (cgcc.org.hk)

001_SYSTEM_Raw Materials

Atribute
Biodegradability.
–
Description
The capability of being decomposed by biological agents, especially bacteria.

Can the company switch from non-biodegradable to biodegradable materials?

Is the company using compostable or biodegradable organic materials?

Is the company developing any bio based product to substitute any non renewable resource?

Ecodesign strategies

Design for recyclability

When selecting biodegradable materials, it is important not to forget the product use expectative and, therefore, select materials that satisfy the technical and durability requirements for the product.

From past to the future

There exist many fibers used in the past that nowadays could be scale up and massive use as: linen, hemp or others. Additionally, there exist many bio-based fibers that could be developed from natural resources.

Resources

Example 01.
Example of future raw materials with sustainable attributes. Future materials.

Strategies

RW-002-E
Select biodegradable materials.

001_SYSTEM_Raw Materials

Atribute
Material's availability.
–
Description
Geographical location from which materials are obtained; and/or amount of resources (materials) that are fundamental for the product provided left in nature. Some substances (materials) are already scarce.

Does the company use the majority of materials (more than 70%) required for the textile product, which are readily available and commonly found within your region (within a 300km radius)?

Does the company use the majority of the materials (more than 70%) for the textile product sourced in an environmentally sustainable manner, considering factors such as eco-friendly production methods, renewable resources, and ethical supply chain practices?

Ecodesign strategies

Supply for local materials

Strategies

RW-003-A
Select local materials to reduce transportation demand.

Using regionally available raw materials reduces the requirement for transportation and thus environmental damage caused by increasing traffic. Thus, one has to take into account the environmental impact through emissions such as CO2, NOx, dust, and noise. The necessary input for transportation depends on factors such as mass and volume of the cargo, hauling distance, choice of the means of transportation, and number of hauling operations required.

Resources

Example 01.
Raw materials from China Natural Fibers in China

Example 02.
Bamboo fibres technology. Exploring the innovation landscape of bamboo fiber technologies from global patent data perspective | Cellulose (springer.com)

Example 02.
CERTIFICATIONS TO ENSURE ORGANIC MATERIALS AND OTHER CERTIFICATIONS. China Eco certifications

Ecodesign strategies

002_SYSTEM_Production

These strategies look for alternatives in the materials used to produce a product as a means to make it as simple as possible while maximising its durability and facilitating its recovery after use.

So, the ideal would be to produce a product as simple as possible. That is a product containing the minimum type and amount of materials, having the maximum durability or renewability, using recycled materials or recovered components.

Strategy code	Strategy
PROD-001-A	Minimize and simplify the production processes.
PROD-002-A	Use efficient technologies in the production process.
PROD-002-B	Monitor and optimize energy and water use.
PROD-002-C	Preferably use renewable energy sources along the production process.
PROD-002-E	Waste management.
PROD-002-F	Use techniques and technologies that reduce the generation of waste, rejects and emissions in the production process.
PROD-002-G	Recycle and reuse process materials whenever possible.
PROD-002-H	Water monitoring consumption.
PROD-002-I	Water circularity strategy.
PROD-002-J	General chemical management . REACH implementation.
PROD-003-A	Search for synergies and interactions with neighbouring companies and organizations to close energy and material flows (Industrial symbiosis).
PROD-003-B	Close material cycles in the production process.

002_SYSTEM_Production

Atribute
Process complexity.
–
Description
It refers to the level of intricateness of the production process. It can be simplified as the number of production processes (the less, the better).

The facility cannot further minimize the number of steps in the production. Is this statement true?

Ecodesign strategies

Operational industrial processes

A simplification of the production process may result in (1) a reduction of materials and energy use, (2) reduction of wastes and (3) reduction of processing time. Obviously, this strategy should be studied in detail for each production process, in order to assess the different alternatives.

New machinery and new tech

Many of the advanced new process try to avoid some steps from the "normal" way to produce. This efforts helps to get better water and energy assessment.

Resources

Example 01.
DRY INDIGO FROM TEJIDOS ROYO.
Tejidos royo tintura sin agua

Strategies

PROD-001- A
Minimize and simplify the production processes.

002_SYSTEM_Production

Atribute

Overall efficiency of production.

–

Description

It refers to the capability to produce the desired results without wasting inputs of any type (materials, time or energy):
I) Energy efficiency refers to the percentage of total energy that is consumed in useful work and not wasted as useless heat.
II) Water efficiency refers to ensure a production technology that produces the desired results without wasting water.
III) Materials efficiency refers to produce the desired results without wasting materials, often using better technology.

Can the facility improve the efficiency of their technologies?

Are energy-efficient technologies and practices integrated into the textile manufacturing processes?

Are employees trained and engaged in energy conservation initiatives to promote a culture of sustainability within the textile facility?

Ecodesign strategies

Environmental management system

Strategies

PROD-002-A

Use efficient technologies in the production process.

The type of production technology may have a decisive influence on the consumption of energy, water or raw materials during the manufacture of a product. Selecting adapted production technologies contributes to the minimization of these demands.

The objective is to analyze the consumption flows (water, energy and materials) at the each stage of production and, on the basis of this knowledge, improve the efficiency of the manufacturing process of your product.

You may need to use adequate technologies that reduce energy use, or water consumption or the demand of raw materials. This, in turn, reduces the environmental damage through waste reduction, on the one hand, and reduces the quantity of raw materials extracted from the environment, on the other. Low emission production technologies reduce the need for downstream purification and filter plants. There are many examples of efficient technologies: printers that reduce emissions to air, dying processes that reduce the use of ink and water, etc..

Adaptation of old machinery

Many of the advanced manufacturing vanguards are coming from big data, use of artificial intelligence or sensor use.

Additionally the traditional energy audits and review the energy balances in every process helps to increase the efficiency.

Resources

Example 01.
JEANALOGIA. China leading in Efficiency

002_SYSTEM_Production

Atribute

Overall efficiency of production.

–

Description

It refers to the capability to produce the desired results without wasting inputs of any type (materials, time or energy):
I) Energy efficiency refers to the percentage of total energy that is consumed in useful work and not wasted as useless heat.
II) Water efficiency refers to ensure a production technology that produces the desired results without wasting water.
III) Materials efficiency refers to produce the desired results without wasting materials, often using better technology.

Does the facility monitor production flows?

Is the facility tracking the total energy consumption and/or the primary energy process consumption?

Is the facility doing an estimation of the energy consumption per manufactured unit in the production unit?

Ecodesign strategies

Environmental management system

Is the facility doing conducting audits in order to improve the efficiency?

Does the facility have a preventive maintenance management system in place to enhance energy efficiency, such as insulation inspections, boiler control, and other energy-saving devices?

Strategies

PROD-002-B

Monitor and optimize energy and water use.

In addition to using energy efficient technologies an optimized process design also contributes to a reduction of energy and water consumption, which, in turn, reduces the environmental impact caused by the generation of energy provided for the production process or the sourcing of water. Savings can be realized through constant monitoring and optimization of the process parameters (e.g. temperature, quantity of auxiliary material used, etc.).

Efficient use of materials, process and auxiliary materials by applying adequate technologies (best practice) reduces the overall consumption of raw materials. This, in turn, reduces damage to the environment through waste, on the one hand, and reduces the quantity of raw materials extracted from the environment, on the other. Low emission production technologies reduce the need for downstream purification and filter plants. There are many examples of efficient technologies: printers that reduce emissions to air, dying processes that reduce the use of ink and water, etc..

Resources

Example 01.
Energy monitoring. Energy monitoring in textile

002_SYSTEM_Production

Atribute

Renewability of energy.

–

Description

A renewable resource is a natural resource which can replenish with the passage of time, either through biological reproduction or other naturally recurring processes.

Most of the energy (at least 50%) come from renewable source.

Can the facility use renewable energy sources?

Is the facility producing renewable energy at leas 40%?

Ecodesign strategies

Environmental management system

The use of renewable energy sources such as solar energy, biomass, hydroelectric power, wind energy, and geothermal energy can be done by means of renewable technologies and/or contracting renewable electricity suppliers.

Self energy consumption

If the production unit is able to produce some of the % of their energy from renewable energy it means that there will be not problems if there is some change in the energy prize. Additionally this aspect reduce the energy lost in transport and reduce the Carbon Footprint.

Resources

Example 01.

Green practices.

Asia is becoming green Fast.

Strategies

PROD-002-C

Preferably use renewable energy sources along the production process.

002_SYSTEM_Production

Atribute
Waste generation and treatment.
–
Description
It refers to the amount of waste generated in the production processes and the way it is treated. Also in how this waste is managed.

Has the facility a waste inventory for the identification of non hazardous and hazardous waste?

Has the facility promoted a quality management policy, for the reduction of discarded products and unconformities?

Is the facility recording the textile production waste produced during the internal operations?

Ecodesign strategies

Environmental management system

Strategies

PROD-002-E
Waste management.

Waste management in textile manufacturing is important for both environmental and economic reasons. Textile waste can have negative impacts on the environment, such as pollution, greenhouse gas emissions, resource depletion, and landfill occupation.

Therefore, it is beneficial for the textile industry to adopt waste management practices that aim to reduce, reuse, and recycle textile waste, as well as to recover energy and materials from it.

Resources

Example 01.
Morocco preindustrial textile waste management.
Morocco_EN-Toward-an-efficient-and-competitive-circular-textile-industry_low.pdf (switchmed.eu)

Example 02.
Waste management.
Time to rethink Waste Management.

002_SYSTEM_Production

Atribute

Waste generation and treatment.

–

Description

It refers to the amount of waste generated in the production processes and the way it is treated. Also in how this waste is managed.

The facility cannot reduce further the waste generation, and waste is managed by an authorized organization within regulations, is that true?

Is it possible to reuse the waste generated? Or to reduce the rejects generated?

Ecodesign strategies

Environmental management system

The goal of each production process consists in the transformation of raw materials into products. Thus, process waste may be considered an indicator for inefficient use of materials. Apart from the environmental impact caused by the disposal of waste the consumption of raw materials extracted from the environment has to be taken into account. Rejects could be defined as product without any direct benefit attributable to the input of resources used up in the manufacture of the product. It is also an indicator of inefficiency. Thus, minimizing the reject rate is an important goal that also contributes to cost reduction, quality management and quality assurance.

Strategies

PROD-002-F

Use techniques and technologies that reduce the generation of waste, rejects and emissions in the production process.

Resources

Example 01.

Case to increase the life time of garments. Business-case-Circular-fashion-design-Morocco_EN.pdf (switchmed.eu)

Example 02.

Example of waste uses. Value Creation with Textile Waste in China

002_SYSTEM_Production

Atribute
Waste generation and treatment.
–
Description
It refers to the amount of waste generated in the production processes and the way it is treated. Also in how this waste is managed.

Can the facility give a second life to the textile waste created during the internal operations?

Can the facility recover and reuse wasted materials from their own production process?

Strategies

PROD-002-G
Recycle and reuse process materials whenever possible.

Ecodesign strategies

Environmental management system

Recovering production waste materials and returning them into the production process reduces consumption of primary raw materials while lowering the cost of waste disposal. In addition, transportation needs are reduced (compared to external recycling or disposal). One of the prerequisites consists in the use of recyclable materials and in collecting and sorting of process waste.

In some sectors, the recycling of some materials is already considered best practice (e.g. recycling of water in closed cycles, in combination with heat recovery).

Textile waste and another outputs

Nowadays textile waste management is a world challenger and there are many opportunities in order to find new business opportunities.

In production every industrial should be check the best available technics in each process in order to ensure efficiency and reuse of water, energy and less waste.

Resources

Example 01.
Deadstock Deadstock and Reclaimed Materials.

Example 02.
Jeans recycled in Tunisia. MED TEST III pilot Tunisia Nudie Jeans collaboration - Report summary.docx.pdf (switchmed.eu)

002_SYSTEM_Production

Atribute
Water management.
–
Description
It refers to the amount of water used in the production processes and the way it is treated and managed. Thus, it is a consequence of an inefficient use of resources in production.

The water intake used in the facility has licenses or prior studies to ensure that it will not harm any ecosystem, while also respecting water resources and ecological limits?

Is the facility recording the water income and outcome?

Is the facility doing an estimation of the water consumption per manufactured unit or per kg of raw material?

Ecodesign strategies

Environmental management system

Strategies

PROD-002-H
Water monitoring consumption.

This strategy refers to monitoring and controlling in each of the steps of the facility the consumption of water. In order to start planning a reduction of this resource, we need first to know the consumption, and in which steps can be reduced, or changed by another technology.

Resources

Example 01.
China water report. China Report on Water.

Example 02.
CEO Water mandate from ONU CEO Water Mandate - Sign the Business Pledge for Water Stewardship.

002_SYSTEM_Production

Atribute
Water management.
–
Description
It refers to the amount of water used in the production processes and the way it is treated and managed. Thus, it is a consequence of an inefficient use of resources in production.

The water supply and discharge is not damaging or changing the local environment. Is this statement true?

Is the facility reusing the water in any process?

Does the facility reuse all the water in production?

Ecodesign strategies

Environmental management system

Strategies

PROD-002-I
Water circularity strategy.

This strategy refers to the circularity, flow a reuse of the water resource. There could be inside the facility a purifier technology, or some kind of cleaning the water technology.

Water availability
Textile sector mainly the wet process mills (dyeing and finishing plant) use huge quantity of water, mainly this kind of facilities are distributed close to the rivers and wet areas. In case of drought or water stress this facilities could stop the production.

Resources

Example 01.
Water data from China Circularity Policy on Water.

Example 02.
DRY INDIGO FROM TEJIDOS ROYO.
Tejidos royo tintura sin agua.

Example 03.
Milano reuse of water. Nosedo Wastewater Treatment Plant | Veolia Water Technologies.

Example 04.
Water drought in Spain cut textile production 25%.
Drought in Catalonia reduce textile production.

002_SYSTEM_Production

Atribute
Water management.
–
Description
It refers to the amount of water used in the production processes and the way it is treated and managed. Thus, it is a consequence of an inefficient use of resources in production.

Does the facility have a chemical inventory with information about: use, stocks, type of product, CAS number, etc.?

Does the facility has in place the safety data sheet of each chemical product used?

Is the facility using only water-based chemistry or eco-labelled elements. Is this statement true?

Does the facility have any program to reduce the hazardous chemicals?

Ecodesign strategies

Environmental management system

Does the facility guaranteeing that chemicals storage is fully controlled, without risk to the environmental and people (water leakage, PPE, labelled, management, etc. and legally responsive?

Strategies

PROD-002-J
General chemical management.

This strategy refers to the correct management on chemicals through the facilities. The storage, the use phase and the consumption. Also better knowing which kind of chemicals are been used.

Additionally every production unit should have a good chemical inventory with the follow information: Kind of product, use of product, name, quantity, Cas Number, and if this product it is forbidden to use in any country or for any standard.

And every product should be correctly labelled and with their risk identify.

Resources

Example 01.
China Textile Industry Efforts on Chemicals/

Example 02.
Certification of Good chemical use and management. bluesign® - Solutions and services for a sustainable textile industry - Bluesign

Example 03.
ZDHC, Zero Discharge Hazardous Chemicals. Roadmap to Zero.

002_SYSTEM_Production

Atribute

Closed/Open production cycle.

–

Description

Open loop systems are of linear nature, in which resource and capital investments move through the system to become waste, whereas closed loop systems are those where wastes can become inputs for new processes. Production demand and no generating deadstock.

Can the facility exchange materials, water and energy flows with other companies nearby?

Strategies

PROD-003-A

Search for synergies and interactions with neighboring companies and organizations to close energy and material flows (Industrial symbiosis).

Ecodesign strategies

Industrial symbiosis

Interactions among organizations may bring opportunities to increase efficiencies and reduce costs (e.g. sharing common services, reusing waste flows...).

Synergies and symbioses with other organizations is a pillar of industrial ecology, which is a discipline that conceptualizes industry as a man-made ecosystem that operates in a similar way to natural ecosystems, where the waste or by product of one process is used as an input into another process. Industrial ecology interacts with natural ecosystems and attempts to move from a linear to cyclical or closed loop system.

Symbiosis often happens in industrial clusters, where the proximity between industrial facilities enables these interactions (e.g. recycling of water in closed cycles, in combination with heat recovery). These strategies may not only reduce environmental impacts but also costs.

Resources

Example 01.

Impact of technological progress on China's textile industry and future energy saving potential forecast.

Example 02.

Textile sector symbiosis between textile and packaging. The handbook of industrial symbiosis between the textile and packaging sectors.

002_SYSTEM_Production

Atribute

Closed/Open production cycle.

–

Description

Open loop systems are of linear nature, in which resource and capital investments move through the system to become waste, whereas closed loop systems are those where wastes can become inputs for new processes. Production demand and no generating deadstock.

Can the facility design the material so at the end of its life it can enter the production cycle again? It can either be your own production cycle or those of other companies (waste is used as a resource)

Strategies

PROD-003-B

Close material cycles in the production process.

Ecodesign strategies

Industrial symbiosis

Recycling waste materials and returning them into the production process reduces consumption of primary raw materials as well as the cost of waste disposal, promoting a closed material cycle. In addition, transportation needs are reduce (compared to external recycling or disposal). One of the prerequisites consists in the use of recyclable materials and in collecting and sorting of process waste.

Close the loop strategies

Close the loop strategies should focus in the main or priority areas of the company and could includes for textile sector:

Water

–

Waste

–

Chemistry

–

Fibers, fabrics, garments, etc.

Resources

Example 01.

China Goals of recycling. China : Recycling of 25 % of all textile waste by 2025 (textiletechnology.net)

Ecodesign strategies

003_SYSTEM_Packaging	Strategy code	Strategy
	PK-001-A	Dimension the packaging according to standard transportation measures
	PK-002-A	Reduce the packaging to the minimum
	PK-002-B	Use monomaterial (only one material) packaging
	PK-004-A	Use renewable raw materials for packaging
	PK-005-A	Use recyclable materials in the packaging
	PK-005-B	Use a reusable / returnable packaging
	PK-009-A	Label packaging materials (including instructions for disposal)

The key environmental aspects for this step are related to: *Packaging material shape, size and weight.*

Innovative packaging design and materials, and new means of transportation are getting commonly used. In many cities, environment friendly alternatives are working very well.

Small and sustainable packages are delivered on foot or by bicycle, a greener way to bring our value to customers.

003_SYSTEM_Packaging

Atribute

Standardization of packaging sizes.

–

Description

It refers to the use of packaging whose size complies with existing size standards. These standards have the aim to help the industry (incl. packaging, producers, transportation) by making mutually consistent decisions on the size of the elements (packaging), so all parties can realize mutual gains.

The product and its packaging shape is a flat or cubic, with almost no air (fully optimised) is this statement true?

Is the facility using a standard packaging? if not, could it be adjusted to a standard?

Ecodesign strategies

Packaging strategy

Strategies

PK-001- A

Dimension the packaging according to standard transportation measures.

The use of packaging dimensioned to logistics and retailers optimizes the room in trucks and warehouses better than non standard packaging.

Resources

Example 01.

Sustainable Packaging Standards China.

Tool 01.

Guide about packaging. An Interactive Tool for Designing Sustainable Packaging Designed and launched as part of the UNIDO SwitchMed II project in collaboration with Afeka Institute and the Israel Packaging Institute.

003_SYSTEM_Packaging

Atribute

Amount and type of packaging materials.

–

Description

It refers to the quantity (weight) and the number of different typologies of materials involved in the packaging.

Could it be used less packaging material (e.g. Making it lighter)?

Ecodesign strategies

Packaging strategy

Reducing the material input in packaging can be done by optimization of packaging or by appropriate product design (e.g. casings that endure transportation without or with only a minimum of packaging) A packaging made of only one material enables easy handling for proper waste management. In contrast, when packaging is made of different materials, these need to be separated and managed in different ways.

Resources

Example 01.

Packaging Standards China.

Example 02.

Packaging from bio based plastic. Biobased, biodegradable and compostable plastics - European Commission (europa.eu)

Strategies

PK-002-A

Reduce the packaging to the minimum.

003_SYSTEM_Packaging

Atribute

Amount and type of packaging materials.

–

Description

It refers to the quantity (weight) and the number of different typologies of materials involved in the packaging.

The packaging can't be simpler, with fewer elements, fewer materials types, is this statement true?

Ecodesign strategies

Packaging strategy

Reducing the material input in packaging can be done by optimization of packaging or by appropriate product design (e.g. casings that endure transportation without or with only a minimum of packaging) A packaging made of only one material enables easy handling for proper waste management. In contrast, when packaging is made of different materials, these need to be separated and managed in different ways.

Resources

Example 01.

Recycled Plastic Materials. Recycled plastic materials | EFSA (europa.eu)

Strategies

PK-002-B

Reduce the packaging to the minimum.

003_SYSTEM_Packaging

Atribute
Renewability.
–
Description
Packaging can be made of renewable materials.

Can the use of plastic and cardboard for logistical activities be minimized?

Can the packaging be made of renewable materials?

Ecodesign strategies

Packaging strategy

The use of renewable raw materials (e.g. non fossil materials) is preferable since it does not contribute to the depletion of resources and, in addition, it constitutes an adequate solution for the disposal of packaging material. Typical renewable packaging materials include paper, cardboard or wood, but you may find many other local renewable materials.

Resources

Example 01.
Recycled Plastic Materials. Recycled plastic materials | EFSA (europa.eu)

Example 01.
Circular Economy. Towards a circular economy for plastics in china

Strategies

PK-004-A
Use renewable raw materials for packaging.

003_SYSTEM_Packaging

Ecodesign strategies

Packaging strategy

Atribute

Packaging recyclability, reuse or recovery rate.

–

Description

It refers to the percentage of packaging that can be effectively recycled, recovered and/or reused.

Can the packaging be recycled?

Using recyclable materials reduces the consumption of virgin materials, and it allows to recirculate waste materials into the economy. Materials for which there are already well established recycling channels facilitate the recycling of packaging materials.

Resources

Example 01.

European Packaging Standard.

Strategies

PK-005-A

Use recyclable materials in the packaging.

003_SYSTEM_Packaging

Ecodesign strategies

Packaging strategy

Atribute

Packaging recyclability, reuse or recovery rate.

–

Description

It refers to the percentage of packaging that can be effectively recycled, recovered and/or reused.

It is possible to recover and reuse the own packaging?

The company chooses a resistant, highly recyclable materials for multiple uses and returnable systems. Is this statement true?

Packaging designed for multiple use reduces the overall environmental impact of packaging. In this sense, returnable packaging is particularly advantageous when deposit and return schemes are in place (which facilitate the return of packaging and its reuse). This strategy is being implemented with success in the food and beverages sector.

Resources

Example 01.
Logistic center ZERO WASTE. Inditex

Example 02.
Return vs Recycle. DRS vs RAP

Example 03.
Plastic and packaging Laws.

Example 04.
Retuned pallets - Bienes de consumo | CHEP Espana

Strategies

PK-005-B

Use a reusable/returnable packaging.

003_SYSTEM_Packaging

Atribute
Labelling.
–
Description
It refers to the labelling in place, which could identify the materials used in the packaging and, thus, provide an indication on the best waste management option for them.

Is the packaging properly labelled?

Strategies

PK-009-A
Label packaging materials (including instructions for disposal).

Ecodesign strategies

Packaging strategy

A clear labelling of packaging material is necessary to foster its recycling or reuse. Packaging usually has only a very short life, therefore labelling is particularly important in order to ensure appropriate recycling (value added), reuse or environmentally acceptable disposal.

Labeled of packaging

China has specific regulations and standards for labelling of packaging in textile sector, which are enforced by the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) and the Standardization Administration of China (SAC).

GB 5296.4-2012 (Instructions for use of products of consumer interest)
–
GB 18401-2020 (Safety)
–
GB/T 29862-2013 (Fibre content)

Resources

Example 01.
Legislation on labelling in China China Packaging Labelling.

Ecodesign strategies

004_SYSTEM_Distribution

In this step, we are asked to identify main logistics issues such as distribution and network infrastructures.

The key environmental aspects for this step are related to the transportation and distances that materials and products travel along all the life cycle.

Strategy code	Strategy
LOG-001-A	Implement a logistics broker system at the industrial park level.
LOG-002-A	Optimize weight and volume transported in the vehicle.
LOG-003-A	Optimize transportation routes and minimize distribution distances.
LOG-004-A	Foster eco-friendly driving patterns.
LOG-005-A	Choose environmentally acceptable means of transportation for distribution of product.
LOG-006-A	Use vehicles with the most efficient technology available (less energy consumption).
LOG-006-B	Use vehicles with less emissions.
LOG-007-A	Use fuels from renewable origin.

004_SYSTEM_Distribution

Atribute
Environmental sustainability of logistics.
–
Description
It refers to the overall environmental performance of the logistics in place.

Could the company optimize the travelled miles or improve the system?

Ecodesign strategies

Corporate transport plan

A sustainable logistics management would introduce operational improvements that can produce profits: re-evaluating a company's supply chain from purchasing and planning, and managing the use of materials to shipping and distributing finished products. The Logistics Broker service answers to the need of improving the sustainability and efficiency of logistics processes. The service consists in interjecting a logistics broker between the companies and the carriers. Using modern ICT-Tools (software) the broker supports the customers and the carriers in their daily transport planning. Firms often do the planning of transports internally rarely using specific optimizing systems.

They manage the whole amount of data management on their own. The interposition of a broker, between these two stakeholders introduces essential changes in the proceeding of the transport planning. The broker takes over the entire transport planning acting as a mediator between customers and carriers and reducing their effort to find the best and cheapest transport solutions.

Resources

Example 01.
Impact of Green Logistics Performance on China's Export Trade to Regional Comprehensive Economic Partnership Countries Green logistics China

Strategies

LOG-001-A
Implement a logistics broker system at the industrial park level.

004_SYSTEM_Distribution

Atribute
Efficiency of transported load.
–
Description
It refers to the optimization of the ratio between the transported load and the loading capacity or the transported volume and the volumetric capacity of the transportation mode.

Can the product be designed so it occupies less volume and the capacity for transport can be increased?

Ecodesign strategies

Corporate transport plan

An optimization of the load transported in the vehicle can be achieved by reducing either the product's weight (products are lighter) or its volume. doing so, the transported weight is as close as possible to the maximum allowed, and/or the transported volume is as close as possible to the volumetric capacity of the vehicle.

Resources

Example 01.
Improving efficiency in Chinese trucking and logistics
China Trucking Report

Strategies

LOG-002-A
Optimize weight and volume transported in the vehicle.

004_SYSTEM_Distribution

Atribute
Transportation routes and distances.
–
Description
It refers to the routes and distances used to transport goods from one place to another (routes may be quite straightforward or on the contrary redundant).

Does the company do reverse logistics?

Can transport routes be optimized?

Ecodesign strategies

Corporate transport plan

Transportation routes may be optimized by an adequate planification of the points to be covered. It includes distances, an optimization of loads in vehicles, and the hauling operations to be done in each point.

A reduction of distribution distances is possible by means of an adequate planning of the transportation routes looking for overall shorter distances between delivery points through the route. The shorter distances, the better.

Resources

Example 01.
Transportation route optimization with cost object in China Route optimization inside China

Strategies

LOG-003-A
Optimize transportation routes and minimize distribution distances.

004_SYSTEM_Distribution

Atribute
Ecofriendly driving.
–
Description
It refers to the practice of driving in such a way as to minimize fuel consumption and the emission of carbon dioxide.

Are the drivers trained for an ecofriendly driving?

Ecodesign strategies

Corporate transport plan

There are several tips for an eco-friendly driving, such as (1) keeping tires properly inflated, (2) using the recommended grade of motor oil, (3) checking and replacing air filters regularly, (4) not speeding, (5) avoid aggressive driving, (6) taking advantage of cruise control, (7) using overdrive gears to lower engine speed, save gas and reduce engine wear and (8) avoiding peak rush hours if possible.

Trainning and indicators

Training about the importance of fostering eco-friendly driving patterns and KPIs to know the efficiency of the logistics processes is a way to educate and motivate drivers, fleet managers, and logistics service providers to adopt more sustainable practices in their operations. This can help them reduce their environmental impact, improve their health and safety, save money and time, and increase their competitiveness and customer satisfaction.

Resources

Example 01.
China transition to a Greener Economy by promoting ecological transport. Eco-driving Day

Strategies

LOG-004-A
Foster ecofriendly driving patterns.

004_SYSTEM_Distribution

Atribute

Transportation system.

–

Description

It refers to the overall environmental impact of the transportation system used (train, ship, truck,...), thanks to which transportation modes could be prioritized. For example, transporting 1 ton by ship is environmentally preferable than by train, and by turn, the train is preferable than the truck.

Is the most common mode of transportation, the most efficient?

Ecodesign strategies

Corporate transport plan

The choice of appropriate means of transportation reduces the environmental impact caused by the distribution of the product. Among the locally available systems choose the one that is environmentally most acceptable. Switching from transportation by truck to railroad or ship can drastically reduce damage to the environment.

Ask to your logistic operator

It is possible to ask to the logistic operator to know types of transportation and even to get Carbon footprint of the logistics processes.

Resources

Example 01.

China's CO2 emissions sorted by means of transport CO2 emissions China

Example 01.

Carbon footprint benchmarking between different transports. Comparative Carbon Footprint Assessment of Cross-Border E-Commerce Shipping Options - Lynette Cheah, Qiuhong Huang, 2022 (sagepub.com)

Strategies

LOG-005-A

Choose environmentally acceptable means of transportation for distribution of product.

004_SYSTEM_Distribution

Atribute

Technology of the vehicle.

–

Description

The technology of the vehicle conditions not only the performance of the vehicle but also its environmental impact, such as the exhaust gases released and the amount of fuel consumed. Some vehicles, such as cars, are classified according to eco-friendly technologies (EURO 4, EURO 5, etc...).

Does the company choose mostly very new efficient vehicles, big trucks (40Ton) or train instead of airplanes?

Could the company use eco-friendly (EURO 4, EURO 5,...) vehicles?

Ecodesign strategies

Corporate transport plan

Strategies

LOG-006-A

Use vehicles with the most efficient technology available (less energy consumption).

Environmentally friendly vehicles produce less harmful impacts to the environment than comparable conventional vehicles (e.g. internal combustion engine vehicles running on gasoline or diesel). Within each technology of vehicle, there may be different levels of efficiency, with effects on energy consumption and vehicle emissions.

Trainning and indicators

Training about the importance of fostering eco-friendly driving patterns and KPIs to know the efficiency of the logistics processes is a way to educate and motivate drivers, fleet managers, and logistics service providers to adopt more sustainable practices in their operations. This can help them reduce their environmental impact, improve their health and safety, save money and time, and increase their competitiveness and customer satisfaction.

Resources

Example 01.

How can China reduce their transport emissions.
How China can cut emission in transportation.

004_SYSTEM_Distribution

Atribute

Technology of the vehicle.

–

Description

The technology of the vehicle conditions not only the performance of the vehicle but also its environmental impact, such as the exhaust gases released and the amount of fuel consumed. Some vehicles, such as cars, are classified according to eco-friendly technologies (EURO 4, EURO 5, etc...).

Could the company use vehicles with fewer exhaust gases?

Strategies

LOG-006-B

Use vehicles with less emissions.

Ecodesign strategies

Corporate transport plan

A low-emission vehicle is a motor vehicle that emits relatively low levels of motor vehicle emissions. In general, the less energy consumption of the vehicle, the less emissions (this is particularly true for combustion engine vehicles running on fossil fuels). Also better vehicle technology in the combustion of the engine, filters, etc. can help. The use of fuels from renewable origin constitutes an alternative to the use of fossil fuels, that are scarce. If possible, it is suggested to opt for local renewable energy sources, such as biodiesel from Used Cooking Oils, or solar energy.

Diagnosis and take the decisions

Evaluating vehicles for less CO2 means comparing the carbon dioxide emissions of different vehicles, and choosing the ones that have the lowest emissions per kilometer or per passenger. This can help reduce the environmental impact of transportation, and contribute to the company CO2 goals.

Resources

Example 01.

How can China reduce their transport emissions.
How China can cut emission in transportation.

004_SYSTEM_Distribution

Atribute
Renewability of fuels.
–
Description
It refers to the use renewable energy in vehicles. For example: biomass, electricity from solar panels or wind, etc.

Can the company switch to renewable resources for your vehicles?

Ecodesign strategies

Corporate transport plan

The use of fuels from renewable origin constitutes an alternative to the use of fossil fuels, that are scarce. If possible, it is suggested to opt for local renewable energy sources, such as biodiesel from Used Cooking Oils, or solar energy.

Resources

Example 01.
China roadmap for renewable energy.
China Renewable Energy Roadmap 2030

Strategies

LOG-007-A
Use fuels from renewable origin.

Ecodesign strategies

005_SYSTEM_Use&Maintenance

The use phase is related to the customer interaction with the product. It can be split in three main groups:

Products directly using resources (consumables, energy and water, above all) such as a lamp or a laptop.
–
Products with high maintenance (water, soap, energy...) such as textiles or cutlery.
–
Products with low maintenance (almost no resource input to maintain them or make them work).

Strategy code	Strategy
005-USE-001	Ensure high reliability of the product
005-USE-002	Introduce environmental communication in order to foster a responsible use of the product/service
005-USE-003	Promote an efficient use of materials during use
005-USE-004	Promote an efficient use of energy during use
005-USE-006	Allow the user to personalize the product and tailor it
005-USE-007	Allow the product to adapt/adjust to different users and/or to the evolution of their needs
005-USE-008	Ensure high appreciation of the product
005-USE-009	Realize a timeless product design (timeless design)
005-USE-011	Realize user-oriented product aiming at a high frequency of use
005-USE-012	Use standardized elements, parts, and components to use again a product for the same function as it was initially designed.
005-USE-014	Design product for easy handling and ergonomics
005-USE-017	Avoid and/or minimize waste at use stage
005-USE-018	Provide for incentives for collecting waste from use stage
005-USE-019	Reduce maintenance needs to minimum
005-USE-020	Design product and components for easy cleaning
005-USE-021	Ensure maintenance with standard tools
005-USE-023	Concentrate wear on replaceable components of product
005-USE-026	Ensure availability and accessibility of spare parts and components for repair and replacement
005-USE-027	Preferably use refurbished components as spare parts

005_SYSTEM_Use&Maintenance

Atribute
Reliability.
–
Description
It refers to the trustworthiness to do what the product/service is expected or designed to do (e.g. It will fulfill our expectations, it won't get broken, etc.).

Has the company any procedures or testing methodology for the test of several issues regarding reliability?

Ecodesign strategies

Reliability testing methodology

The concept of reliability refers to the probability of the product fulfilling its functions under given service conditions for a predetermined period of time without becoming defective.

Resources

Example 01.
Guide on how to asses quality for a product in China.
How to do quality control in China

Strategies

005-USE-001
Ensure high reliability of the product.

Ecodesign strategies

Labelling

005_SYSTEM_Use&Maintenance

Atribute

Environmental communication for the use.

–

Description

It refers to the (un)existence of environmental communication aspects aiming to promote an environmentally-friendly use by the user.

In the labelling or the instructions manual, is the company promoting environmentally-friendly use of the product?

The planned and strategic use of environmental communication to support a responsible use of the product and service is an important strategy, particularly for those products that have a relevant environmental impact during the use stage. As an example, an important part of the impact of textiles is during the use stage (washing, drying, ironing), therefore it is of interest to provide instructions to the user on how to maintain the textiles in an environmentally-friendly manner. For this, information can be provided in the label of the piece of textile.

Resources

Example 01.

Guide on how to communicate inside the alimentation industry to comply with the standards that can be applied to textile.

Report of how green communication is done in the alimentation industry

Strategies

005-USE-002

Introduce environmental communication in order to foster a responsible use of the product/service.

005_SYSTEM_Use&Maintenance

Atribute
Efficiency at use.

Description
It refers to the capability of the product to use materials and energy wisely and without generating waste during its use or performance.

Does the product generate any waste at use ? Can it be reduced or eliminated?

Does the product need any source of energy at use? Can the amount of energy required to function be reduced? Does it generate any waste from energy use (battery, transformer,...)? can it be prevented or designed to last longer?

Ecodesign strategies

Labelling

Strategies

005-USE-003

Promote an efficient use of materials during use.

The design of products and services can be done in such a way that allows to use the fewest resources during use, without having a negative impact on their functionality or appearance. This can be achieved by introducing more efficient devices and technologies and by a smart design contributing to reduce the demand of such materials.

005-USE-004

Promote an efficient use of energy during use.

The design of products and services can be done in such a way that allows to consume the fewest energy during use, without having a negative impact on their functionality or appearance. This can be achieved by introducing more efficient devices and technologies and by a smart design contributing to reduce the demand of energy.

Textile care

There are several ways to promote an efficient use of energy during garments care and for textile fabrics. Here are some examples:

Wash clothes less frequently.
–
Use cold water and Eco detergents for washing.
–
Air dry clothes.
–
Choose fabrics with high durability.
–
Reduce fails and mistakes during clean/production.

Resources

Example 01.
Initiative inside China to improve efficiency in production.
China recycling turbines and solar panels

005_SYSTEM_Use&Maintenance

Atribute

Product's life span.

–

Description

The product's life span refers to the durability of the product, that is to say, for how long will it be used. There are several conditionings to it: timelessness, durability, adaptability, customer's appreciation and reusability.

The longer the life span, the better.

Does the product allow the user adapt or adjust to different needs?

Does the product ensure high lifespan appreciation of the product?

Ecodesign strategies

Design for durability

Strategies

005-USE-007

Allow the product to adapt/adjust to different users and/or to the evolution of their needs.

Products are produced for different users and conditions of use. For this reason, the adaptability of the product to different users and needs constitutes an relevant attribute. This adaptability fosters a longer service life of the product.

005-USE-008

Ensure high appreciation of the product.

A high appreciation of the product on the part of the user is an important prerequisite for long use. Products that work well and that are appreciated will rather be repaired than exchanged for new products.

Resources

Tool 01.

Lifecycle assessment launched by the government in China for the textile sector.
Chinese Textile Sector launches
LIFECYCLE ASSESMENT

005_SYSTEM_Use&Maintenance

Atribute

Product's life span.

–

Description

The product's life span refers to the durability of the product, that is to say, for how long will it be used. There are several conditionings to it: timelessness, durability, adaptability, customer's appreciation and reusability.

The longer the life span, the better.

Can the high lifespan be introduced when designing the product?

Is the product-service system oriented?

Ecodesign strategies

Design for durability

Strategies

005-USE-009

Realize a timeless product design (atemporary design).

Long-lived products create maximum benefit for a long time with minimum input of raw materials and energy. It can be done in different ways. For instance, ensuring that surfaces are corrosion resistant, or harmonising its service life. The external shell and surfaces of a product have to be incorporated in an overall concept aiming at durability. The surfaces should be resistant to impacts and scratches and tolerate traces of use. In addition, they should prevent corrosion. Harmonizing the service life of individual components will prevent the product from becoming wasted after a short time and being discarded on account of minor defects. All parts and components of the product should be about equally durable.

005-USE-011

Realize user-oriented product aiming at a high frequency of use.

Products that, once produced are not used afterwards, are not environmentally sound, even if manufacture was based on environmentally acceptable criteria; resources and energy have already been used up for manufacture and transportation.

Resources

Example 01.

Chinese textile sector launches LCA assessment.
LCA China in textile sector

005_SYSTEM_Use&Maintenance

Atribute
Product's life span.
–
Description
The product's life span refers to the durability of the product, that is to say, for how long will it be used. There are several conditionings to it: timelessness, durability, adaptability, customer's appreciation and reusability.
The longer the life span, the better.

Atribute
Multifunctionality.
–
Description
Capacity to perform different functions, intrinsically-related to the design.

Can the product be reused?

Ecodesign strategies

Design for durability

Strategies

005-USE-012
Use standardized elements, parts, and components to use again a product for the same function as it was initially designed.

All parts and components of the product should be about equally durable. Products that, once produced are not used afterwards, are not environmentally sound, even if manufacture was based on environmentally acceptable criteria; resources and energy have already been used up for manufacture and transportation. Product-service systems are oriented towards an efficient use of resources. Reuse of components is preferable to recycling, which is easier when using standardized elements.

Resources

Example 01.
Report on the state of the art disassembling solutions in the textile industry.
Dissasembling solutions

005_SYSTEM_Use&Maintenance

Atribute

Handling of the product / Ergonomics.

–

Description

Product ergonomics refer to the design factors intended to maximize productivity (results) while minimizing operator fatigue and discomfort.

Can the product be designed in a way that reduces the negative side health effects on its users?

Ecodesign strategies

Design for durability

The overall environmental performance of a product depends on the actual use during its service life. Thus, simple handling of the product and an ergonomic interface man-product is essential in order to assure a proper use. For this purpose, the use of the product should be self-explanatory, and the product should clearly show its potential functions and the way it works.

Resources

Example 01.

Smart Textile Gloves Jacket: This is a jacket that has smart textile gloves attached to the sleeves. The gloves have sensors and actuators embedded in the fabric. They can monitor the wearer's hand movements, temperature, and pressure, and provide feedback or assistance.

They can be used for various tasks.

Strategies

005-USE-014

Design product for easy handling and ergonomics.

Ecodesign strategies

Microplastics dissipation mitigation

005_SYSTEM_Use&Maintenance

Atribute

Waste generation during use or functioning.

–

Description

Amount of waste generated during the use or funtioning of your product.

Can the amount of waste generated be reduced?

Strategies

005-USE-017

Avoid and/or minimize waste at use stage.

The prevention of waste at use stage/functioning is important for those products that are intensive in the consumption of resources (energy and materials) during use. In some cases, the impact of such waste may be one of the greatest environmental threats of the products. Some examples of waste generated during use are coffee machines that use capsules.

005-USE-018

Provide for incentives for collecting waste from use stage.

Collecting waste from use stage is of interest in order to allow a re-use or recycling parts, components and materials, or if this not possible, to provide an adequate management of waste (in particular for hazardous waste). Some incentives (such a discount in the new product when offering the old one) have proved to be successful.

Clients and suppliers

It is easy to find trade-offs to get that inverse logistics could be useful in order to decrease costs. As example the reuse of pallets or create take back programs with suppliers to reuse containers or raw materials for recycling.

Resources

Example 01.

China plan for a greener industry

Inside China's plan to clean up its textile industry

005_SYSTEM_Use&Maintenance

Atribute

Maintenance needs.

–

Description

Maintenance involves fixing any sort of mechanical, plumbing or electrical device should it become out of order or broken; it also includes performing routine actions which keep the device working in order or prevent trouble from arising.

Does the company communicate how to maintain the product?

Strategies

005-USE-019

Reduce maintenance needs to minimum.

Products that imply high levels of maintenance are prone to become waste after a very short time. On the contrary, those products that have reduced maintenance requirements will have longer service life (reducing the environmental impacts on the whole life cycle).

Caring for clothes is good for the environment because it reduces the negative impacts of the fashion industry, which is one of the most polluting and wasteful industries in the world. Some of the benefits of caring for your clothes are:

It lowers your carbon footprint by using less energy and resources to produce, transport, and maintain new clothes.

–

It conserves natural resources by reusing and recycling materials instead of extracting new ones from the earth.

–

It saves water by avoiding the excessive use of water in growing cotton, dyeing fabrics, and washing clothes.

–

It prevents textile waste from ending up in landfills or oceans, where it can harm wildlife and ecosystems.

Ecodesign strategies

Microplastics dissipation mitigation

Clients recomendations

There is an important issue regarding the durability of the products and how the clients should do the textile products care in order to dry, clean or how to use it to extend their life and durability as much as possible.

Resources

Example 01.

Lifecycle assessment for the Chinese textile industry.
LCA China textile industry

Example 02.

Joint news release - Inditex and BASF develop the first detergent.
Designed to reduce microfiber release from textiles during

005_SYSTEM_Use&Maintenance

Atribute
Maintenance needs.
–
Description
Maintenance involves fixing any sort of mechanical, plumbing or electrical device should it become out of order or broken; it also includes performing routine actions which keep the device working in order or prevent trouble from arising.

Does the product been designed for easy cleaning?

Can it be fixed by the user or does it need technical assistance?

Ecodesign strategies

Microplastics dissipation mitigation

Strategies

005-USE-020

Design product and components for easy cleaning.

Products that imply high levels of maintenance are prone to become waste after a very short time. On the contrary, those products that have reduced maintenance requirements will have longer service life (reducing the environmental impacts on the whole life cycle). Products that are difficult to clean are prone to become waste after a very short time. They will be replaced for bad looks, not for malfunction. In this context, surface design is of great importance. Surfaces should be easy to clean and inaccessible corners or edges should be avoided.

005-USE-021

Ensure maintenance with standard tools.

The use of standard tools for maintenance is preferred in order to make it easier and ensure that maintenance work can be done at any time.

Resources

Example 01.
Easy clean cloths.
Sepiia | Easy clean garments

Example 02.
Chemical products for waterproof and repellents.
Nano Water Repellent & Anti-Stain Series - GO YEN CHEMICAL INDUSTRIAL CO LTD

005_SYSTEM_Use&Maintenance

Atribute
Repairability.
–
Description
Ability of a damaged or failed equipment, machine or system to be restored to acceptable operating condition within a specified period (repair time). A product may be repairable while having low maintenance needs.

Can the product be repairable?

Ecodesign strategies

Design for upgrading, upcycling and repairability

If a certain degree of wear and tear is unavoidable it should be directed to those parts in the product that can easily be exchanged and replaced. This measure aims at prolonged product life through adequate maintenance and repair. An adequate maintenance according to prescribed servicing intervals contributes to prolonging product life considerably and avoid potential troubles.

Resources

Example 01.
How China is repairing their ancient textiles
China repairing of ancient textiles

Example 02.
Repair bonus from Refashion in France.
Refashion

Example 03.
Textile Testing Standard in the China Republic
China testing textile standard

Strategies

005-USE-023
Concentrate wear on replaceable components of product.

005_SYSTEM_Use&Maintenance

Atribute
Availability of spare parts.
–
Description
Spare parts, also known as service/repair/replacement parts, are an interchangeable part that is kept in an inventory and used for the repair or replacement of failed units.

Can the company make spare parts available?

Ecodesign strategies

Design for upgrading, upcycling and repairability

Strategies

005-USE-026

Ensure availability and accessibility of spare parts and components for repair and replacement.

Successful repair work presupposes that spare parts are readily available. Special parts that are difficult to procure make basically simple repair work impossible. Easy access to components for repair and replacement ensures a longer service life. In many cases, designers concentrate on simple assembly but forget how to disassembly and repair products.

005-USE-027

Preferably use refurbished components as spare parts.

Reuse of parts in a product either as spare parts needed for of repair work or as refurbished parts in the manufacture of new products is an important measure with a view to closing cycles and optimizing the efficiency of resources. The consumption of resources for refurbishing parts and components is usually much lower than is the case in the manufacture of new components. Structural parts designed for a long service life can survive two or three product life cycles and contribute to a reduction of the overall environmental impact of a product.

Resources

Example 01.
How the inventories are managed across the China's textile industry
Management of inventories across China

Ecodesign strategies

006_SYSTEM_End of life

This is the end of the product life, but, what happens afterwards depends on the way we have thought about it in the design stage.

A very good eco-design could make our product practically 'immortal', defying 'obsolescence' (a premature 'end'), completely eliminating the concept of waste towards some kind of 'rebirth' in a new industrial product or safe organic matter back to nature (within the natural recycling system).

The application of eco-design strategies in the end-of-life stage may unlock very interesting opportunities for improving environmental performances and obtaining savings or new revenue streams. Many products can be resold and reused in a cascade of other market sectors, so it is key to rethink the way we design our product or define our service to seize these opportunities.

Strategy code	Strategy
006-END-001	Design product structure for easy disassembly
006-END-002	Reduce the number of parts to simplify assembly and disassembly
006-END-004	Make possible separation of materials for recycling and avoid inseparable composite materials
006-END-005	Ensure simple extraction of harmful and valuable substances
006-END-007	Allow an easy identification of materials
006-END-011	Dispose of unavoidable waste in an environmentally acceptable manner
006-END-012	Allow the energy valorization of waste, once material valorization options are not possible

For example, businesses related to the automotive industry started to recover used tyres for urban applications. Something that was a special waste (a cost!) for one industry, become a very cheap raw material for another (savings!).

006_SYSTEM_End of life

Atribute
Separability of components and/or materials.
–
Description
Separability of components and/or materials.

Are the components of the product easily separable so it can be comfortably disaggregated at the end of life? It is possible to introduce this aspect during the design process?

Can be the product designed for easy disassembly?

Ecodesign strategies

Design for dissassemble

A clear and easily understandable structure ensures easy disassembly, which is important in case of manufacturing defects, to repair the product during use and, particularly, for disassembly after end of life. The disassembly process should be simple and easy and it should require the minimum time, ensuring greater possibilities for the recovery of parts and components. It implies using easily detachable connections, thus avoiding a destructive disassembly which would impair the reuse of parts and components.

Strategies

006-END-001
Design product structure for easy disassembly.

006-END-002
Reduce the number of parts to simplify assembly and disassembly.

Reducing the diversity of components makes assembly and disassembly simpler and minimizes work input, and it also improves reparability of the product at use stage.

Resources

Example 01.
Current Situation and Construction of Recycling System in China for Post-Consumer Textile Waste Recycling Post Consumer in China

Example 02.
Enterprise specialized on the textile sorting and separation. Resortecs

006_SYSTEM_End of life

Atribute
Separability of components and/or materials.
–
Description
Separability of components and/or materials.

Can be the product designed for recyclability?

Can be the product designed without harmful substances?

Ecodesign strategies

Design for dissassemble

Design should ensure easy separation of different materials, since the recycling of materials requires the use of uniform or at least recyclable materials. The potential for recycling is reduced when using composite materials or when gluing materials together for strength reasons.

006-END-005
Ensure simple extraction of harmful and valuable substances.

Harmful substances should be identifiable and be able to be extracted in order to avoid impairing recycling. In the case of valuable substances, which retain their high value only when treated separately, it should be possible to separate them. This requires an adequate labelling of components.

Resources

Example 01.
Enterprise specialized on the textile sorting and separation.
Resortecs

Strategies

006-END-004
Make possible separation of materials for recycling and avoid inseparable composite materials.

006_SYSTEM_End of life

Atribute
Identifiability of materials.
–
Description
Information regarding the type of material, which is useful for an adequate waste management.

Can it be added a list of all the materials that compound the product?

Ecodesign strategies

Product passport indentification

Materials should be easily identified by means of an adequate labelling system in order to allow for their recycling or proper disposal.

Resources

Resource 01.
Transitions to circular economy practices in textile and apparel MSMEs along the lifecycle in Huzhou and Shaoxing
Circular economy practices

Strategies

006-END-007
Allow an easy identification of materials.

006_SYSTEM_End of life

Atribute

Environmentally-sound waste management.

–

Description

A given waste stream may be treated by means of different waste management systems and technologies, which probably have different environmental performance. An environmentally-sound management prioritizes material recovery and, secondly, energy recovery (and ultimately landfilling).

Can the product be easily identified to facilitate sorting by color and by type of fiber?

Strategies

006-END-011

Dispose of unavoidable waste in an environmentally acceptable manner.

Ecodesign strategies

Extended producer responsability systems

The unavoidable waste has to be disposed of in such a way as to ensure that the environmental impact is kept to a minimum.

Waste management in textile sector mill is the process of reducing, reusing, recycling, or disposing of the waste generated by the textile production. Some of the steps involved are:

Reducing:
This means using less raw materials, water, energy, and chemicals in the textile production, as well as minimizing the waste and emissions. Some examples are using natural or organic fibers, optimizing the dyeing and finishing processes, and implementing quality control measures.

Reusing:
This means using the waste materials again for the same or different purposes, without changing their form or properties. Some examples are using the fabric scraps for making accessories, quilts, or rugs, or using the wastewater for irrigation or cleaning.

Recycling:
This means transforming the waste materials into new products or materials, either by mechanical or chemical methods. Some examples are shredding the textile waste into fibers and spinning them into new yarns, or depolymerizing the synthetic fibers into monomers and making new polymers.

Disposing:
This means sending the waste materials to landfills or incinerators, or exporting them to other countries. This is the least desirable option, as it causes environmental pollution and resource depletion. Some examples are dumping the textile waste in open spaces, burning them in open fires, or shipping them to developing countries.

Resources

Example 01.
Main textile waste streams in a facility.
Potential Wastes from Textile Wet Processing Industries and their Management-Globaltextiles.com

006_SYSTEM_End of life

Atribute
Energy valorization potential.
–
Description
Potential to recover energy from waste (the greater, the better; having in mind that it is always preferrable to make a material recovery if possible).

Can de product be energy recovered as a last option and end of life?

Ecodesign strategies

Extended producer responsability systems

The waste management hierarchy places material valorization as preferable to energy valorization. This is because a product can be materially recycled several times (depending on the material) but it can only be energetically valorized once (which makes it to be considered a finalist treatment option). However, if the product can not be recycled, an energy valorization will allow to obtain energy from it (which will avoid the obtention of energy from other sources).

Resources

Example 01.
Complete recycling and valorization of waste textiles for value-added transparent films via an ionic liquid.
Recycling and valorization of waste

Strategies

006-END-012
Allow the energy valorization of waste, once material valorization options are not possible.

Ecodesign strategies

007_SYSTEM_Corporate management

Sustainability in corporate management provide the information of the governance inside the companies.

Strategy code	Strategy
001-COR-001	Develop different policies in order to avoid internal risks (social, environmental and governance)
001-COR-002	Create sustainable goals, values and mision
001-COR-003	Identify sustainable criteria for clients
001-COR-004	Research and develop with other stakeholders
001-COR-005	Green purchase
001-COR-006	Eco-labelling, certification and environmental audits
001-COR-007	Information
001-COR-008	Equity
001-COR-009	Working conditions
001-COR-010	Stakeholder involved
001-COR-011	Social audits

007_SYSTEM_Corporate management

Atribute
Business management.
–
Description
Internal sustainable performance.

Does your company has any compilation system due to internal procedures regarding environmental policy, ethic code, etc.?

Ecodesign strategies

Policies

Define what internal risks are and how they can affect the performance, reputation, and sustainability of the organization. Internal risks are the potential threats or losses that arise from within the organization, such as unethical behavior, operational failures, legal violations, or poor governance practices.

Provide examples of internal risks in each of the three domains of ESG: environmental, social, and governance. For instance, environmental risks could include pollution, waste, or carbon emissions; social risks could include labor disputes, human rights violations, or diversity issues; governance risks could include fraud, corruption, or lack of transparency. Explain how developing different policies can help mitigate or prevent these internal risks by establishing clear rules, principles, and guidelines for the organization and its stakeholders. Policies can help address pertinent issues, ensure compliance with laws and regulations, reflect the culture and values of the organization, give guidance for decision-making, and streamline internal processes. Highlight the benefits of developing different policies for avoiding internal risks, such as improving the efficiency, productivity, and profitability of the organization, enhancing the trust and loyalty of customers, employees, suppliers, and investors, and contributing to the social and environmental well-being of the communities where the organization operates.

Resources

Example 01.
Certification that helps to create internal and external compliance to avoid social and environmental risks
China | B Corp Asia

Strategies

001-COR-001
Develop different policies in order to avoid internal risks (social, environmental and governance).

007_SYSTEM_Corporate management

Atribute
Business management.
–
Description
Internal sustainable performance.

Has the company settled goals for continuous improvement regarding the environmental performance in all operations?

Ecodesign strategies

Carbon footprint

Defining goals and values for the organization in a sustainable perspective is important because it helps the organization align its strategy, operations, and culture with the needs and expectations of its stakeholders, such as customers, employees, investors, suppliers, and communities. By setting clear and measurable goals and values, the organization can communicate its vision and purpose, guide its decision-making and behavior, and monitor its progress and impact. This can enhance the organization's performance, reputation, and resilience, as well as contribute to the social and environmental well-being of the world.

Resources

Example 01.
Certification that helps to create internal and external compliance to avoid social and environmental risks
China | B Corp Asia

Strategies

001-COR-002
Create sustainable goals, values and mission.

007_SYSTEM_Corporate management

Atribute
Business management.
–
Description
Internal sustainable performance.

Does the client ask about environmental requirements?

Ecodesign strategies

Carbon footprint

ESG criteria are the environmental, social, and governance factors that measure the sustainability and ethical impact of an organization. ESG criteria are becoming increasingly important for the textile industry, which is one of the most polluting and wasteful industries in the world1. Textile facilities need to know the ESG criteria from their clients for several reasons:

To comply with the legal regulations and standards that apply to the textile industry in different regions and countries. These regulations may include limits on emissions, water use, waste disposal, chemical use, labor rights, and human rights.

To meet the expectations and demands of their clients, who are increasingly aware of the ESG issues and risks in the textile industry. Clients may require textile facilities to provide transparency and accountability on their ESG performance, and to adopt more sustainable and ethical practices in their production processes.

To improve their own competitiveness and profitability in the textile market, which is facing growing pressure from consumers, investors, and stakeholders to adopt ESG principles and practices. Textile facilities that demonstrate high ESG performance can attract more clients, reduce costs, enhance efficiency, and mitigate risks.

Resources

Example 01.
Examples of Ecolabel internationality accepted.
All ecolabels in China | Ecolabel Index

Example 02.
HIGG INDEX CERTIFICATION AND TOOLS.
Higg Index Tools - Cascale

Strategies

001-COR-003
Clients sustainable criteria's identify.

007_SYSTEM_Corporate management

Atribute
Business management.
–
Description
Internal sustainable performance.

Is sustainable innovation and co-creation a priority in the company?

Ecodesign strategies

Open innovation

Sustainable innovation and co-creation are important for the textile sector because they can help address the environmental and social challenges that the sector faces, such as high resource consumption, waste generation, pollution, and poor working conditions. By involving customers and other stakeholders in the value creation process, the textile sector can develop eco-innovations that meet the needs and preferences of the market, while reducing the negative impacts on the planet and the people. Sustainable innovation and co-creation can also enhance the competitiveness and resilience of the textile sector, by fostering differentiation, collaboration, and adaptation.

Resources

Example 01.
Cocreation organization SAC to face environmental al social challengers in textile manufacturing.
Cascale - Cascale

Example 02.
Cocreation alliance to face fiber raw materials challengers
Standards - Textile Exchange

Example 03.
Decarbonization Working Groups to promote textile sector decarbonization.
Fashion Industry Charter for Climate Action | UNFCCC

Strategies

001-COR-004
Research and develop with other stakeholders.

007_SYSTEM_Corporate management

Atribute
Green procurement.
–
Description
The companies can choose their suppliers according to social and environmental attributes which increase the good performance of the company in CSR topics..

Is the company buying most of supplied goods and services needs from green labelled suppliers?

Strategies

001-COR-005
Green purchase.

Ecodesign strategies

Green purchase Policy

Green purchase for textile manufacturers is important because it can help them reduce their environmental impact, improve their social responsibility, and enhance their competitive advantage. By buying eco-friendly materials, equipment, and services, textile manufacturers can lower their resource consumption, waste generation, and greenhouse gas emissions, as well as avoid using harmful chemicals and substances. Green purchase can also help textile manufacturers comply with environmental regulations, meet the demand of green consumers, and differentiate themselves from competitors. Additionally, green purchase can foster innovation, collaboration, and efficiency in the textile sector, leading to cost savings and increased profitability.

China Ecolabel

The China Ecolabel for textile sector covers various types of textile products, such as fabrics, garments, bedding, towels, carpets, etc. The criteria for the textile sector include aspects such as raw materials, energy consumption, water consumption, wastewater discharge, air emissions, noise, solid waste, hazardous substances, packaging, and product performance. The China Ecolabel for textile sector aims to reduce the environmental impact of textile production and consumption, improve the quality and safety of textile products, and encourage the use of renewable and recycled materials.

Resources

Example 01.
Examples of Ecolabel internationality accepted.
All ecolabels in China | Ecolabel Index

Example 02.
China Eco-label.
China Environmental Labelling | Ecolabel Index

007_SYSTEM_Corporate management

Atribute

Green procurement.

–

Description

The companies can choose their suppliers according to social and environmental attributes which increase the good performance of the company in CSR topics..

Is the company requirement buying some eco-labelled or certified supplier?

Ecodesign strategies

Environmental Audits

Green purchase for textile manufacturers is important because it can help them reduce their environmental impact, improve their social responsibility, and enhance their competitive advantage. By buying eco-friendly materials, equipment, and services, textile manufacturers can lower their resource consumption, waste generation, and greenhouse gas emissions, as well as avoid using harmful chemicals and substances. Green purchase can also help textile manufacturers comply with environmental regulations, meet the demand of green consumers, and differentiate themselves from competitors. Additionally, green purchase can foster innovation, collaboration, and efficiency in the textile sector, leading to cost savings and increased profitabilityrials.

Resources

Example 01.

Cocreation organization SAC to face environmental al social challengers in textile manufacturing

Cascale - Cascale

Example 02.

Cocreation alliance to face
fiber raw materials challengers

Standards - Textile Exchange

Strategies

001-COR-006

Green certification or green audits.

007_SYSTEM_Corporate management

Atribute

Green procurement.

–

Description

The companies can choose their suppliers according to social and environmental attributes which increase the good performance of the company in CSR topics..

Is the environmental information about the supply chain and labels accessible for all stakeholders?

Ecodesign strategies

Product passport information

Sharing information with stakeholders is important for a textile company because:

It empowers people It creates sustainable change It builds relationships It builds a better company It increases success It educates.

Resources

Example 01.

Examples of Ecolabel internationality accepted.

All ecolabels in China | Ecolabel Index

Example 02.

China Ecolabel.

China Environmental Labelling | Ecolabel Index

Strategies

001-COR-007

Information for consumers.

007_SYSTEM_Corporate management

Atribute
Labor Conditions & Polices.
–
Description
There are many topics than a company can do in order to increase their social performance; gender equality, health and safety conditions, etc.

Are the company's objectives set to adopt a gender equality policy?

Ecodesign strategies

Equity gender Policy

Gender equity is the principle of fairness and justice in the treatment of people of different genders. It means that people of all genders have equal rights, opportunities, and responsibilities in society. Gender equity is an important aspect of CSR because it reflects the social and environmental impacts of a company's actions on its stakeholders, especially women and girls who often face discrimination, violence, and exclusion.

Gender equality plans

An equality plan is a fundamental tool to promote gender equality in the workplace. Its objective is to eliminate the barriers that prevent equality between women and men in organizations. Some of the actions that are included in an equality plan are:

Diagnosis and analysis:
Existing inequalities in the company are evaluated, identifying areas for improvement.

Concrete measures:
Specific actions are established to correct imbalances and promote equality.

Training and awareness:
Awareness of gender equality is promoted among staff.

Promotion and access to employment:
The aim is to guarantee that women and men have the same opportunities for professional development.

Work-life balance:
Measures are implemented to facilitate compatibility between work and personal life.

Resources

Example 01.
Report gender equality from ONU.
Gender equality

Strategies

001-COR-008
Equality.

007_SYSTEM_Corporate management

Atribute

Labor Conditions & Polices.

–

Description

There are many topics than a company can do in order to increase their social performance; gender equality, health and safety conditions, etc.

Are the company workers and suppliers fairly paid, safe and protected within the legal framework?

Ecodesign strategies

Worker plan and labour conditions

It is a matter of quality and reliability, as workers in the textile sector are essential for the production and delivery of our products. By caring about their health, safety, and satisfaction, we can ensure that they perform their tasks efficiently and effectively, and that they do not suffer from absenteeism, turnover, or low productivity.

It is a matter of reputation and responsibility, as workers in the textile sector are part of our value chain and stakeholders. By caring about their rights, interests, and feedback, we can build trust, respect, and loyalty among them, as well as among our customers, partners, and the public. We can also demonstrate our commitment to corporate social responsibility (CSR) and sustainable development.

Therefore, caring about the worker conditions of our suppliers in the textile sector is not only a moral duty, but also a strategic advantage for our company.

Resources

Example 01.
Example of SMETA social audits.
SMETA Audit, the world's leading audit - Sedex

Example 02.
Example of SA8000 social audits.
SA8000® Standard - SAI (sa-intl.org)

Example 03.
Last CSR Report published by the
China institutions China CSR Report 2021

Strategies

001-COR-009
Worker conditions.

007_SYSTEM_Corporate management

Atribute
Labor Conditions & Polices.
–
Description
There are many topics than a company can do in order to increase their social performance; gender equality, health and safety conditions, etc.

Is the company adopting social responsibility policy towards all the stakeholders connected with the company?

Strategies

001-COR-010
Stakeholders envolving.

Adopting a social responsibility policy towards all the stakeholders connected with your project is good for your textile company because it can bring you many benefits, such as:

Ecodesign strategies

Stakeholder Plan

Increased employee engagement: By caring about the well-being, rights, and interests of your employees, you can improve their motivation, satisfaction, and loyalty, which can lead to higher productivity, creativity, and retention.

Better bottom-line financials: By implementing eco-friendly and ethical practices throughout your value chain, you can reduce your costs, risks, and waste, and increase your efficiency, quality, and innovation, which can boost your profitability and competitiveness.

More support for local and global communities: By contributing to the social and environmental development of the communities where you operate, you can create positive impacts and value for them, and foster trust, respect, and collaboration with them.

How to involve them?
In the textile industry, the active participation of stakeholders is essential for the success and sustainability of companies. Some methodologies:

Workshops.
–
Complaint offices (direct communications channels to express their concerns)
–
Training
–
Public hearings (meetings with communities), online surveys.
–
Creation of committees and pacts

Resources

Example 01.
Asia garment Hub.
Member Profiles - Asia Garment Hub

Example 01.
Training programme done by different stakeholders.
Eco Tex : Circular Economy Innovative Skills in the Textile Sector (ecotexerasmus.eu)

007_SYSTEM_Corporate management

Atribute
Labor Conditions & Polices.
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Description
There are many topics than a company can do in order to increase their social performance; gender equality, health and safety conditions, etc.

Does the company undergo social audits?

Strategies

001-COR-011
Social audits.

Social audits are important for your company because they can help you evaluate and improve your performance on corporate social responsibility (CSR) and societal impact. By conducting social audits, you can:

Ecodesign strategies

Social audits

Assess how well you are meeting your CSR objectives and benchmarks, and identify areas for improvement. Enhance your reputation, trust, and loyalty among your stakeholders, such as employees, customers, suppliers, communities, and the environment.

Reduce your costs, risks, and waste, and increase your efficiency, quality, and innovation, by implementing eco-friendly and ethical practices throughout your value chain. Attract more investors who are looking for sustainable and responsible businesses, and lower your cost of equity (CoE), which is the rate of return that investors require to invest in your company. Meet the needs, preferences, and expectations of your customers, who are increasingly aware and concerned about the social and environmental impacts of their consumption. Offer a positive and inclusive work environment, and provide opportunities for learning, development, and participation for your employees.

Resources

Example 01.
Example of SMETA social audits.
SMETA Audit, the world's leading audit - Sedex

Example 02.
Example of SA8000 social audits.
SA8000® Standard - SAI (sa-intl.org)

Ecodesign and Sustainable Action Plan for textile MSMEs

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