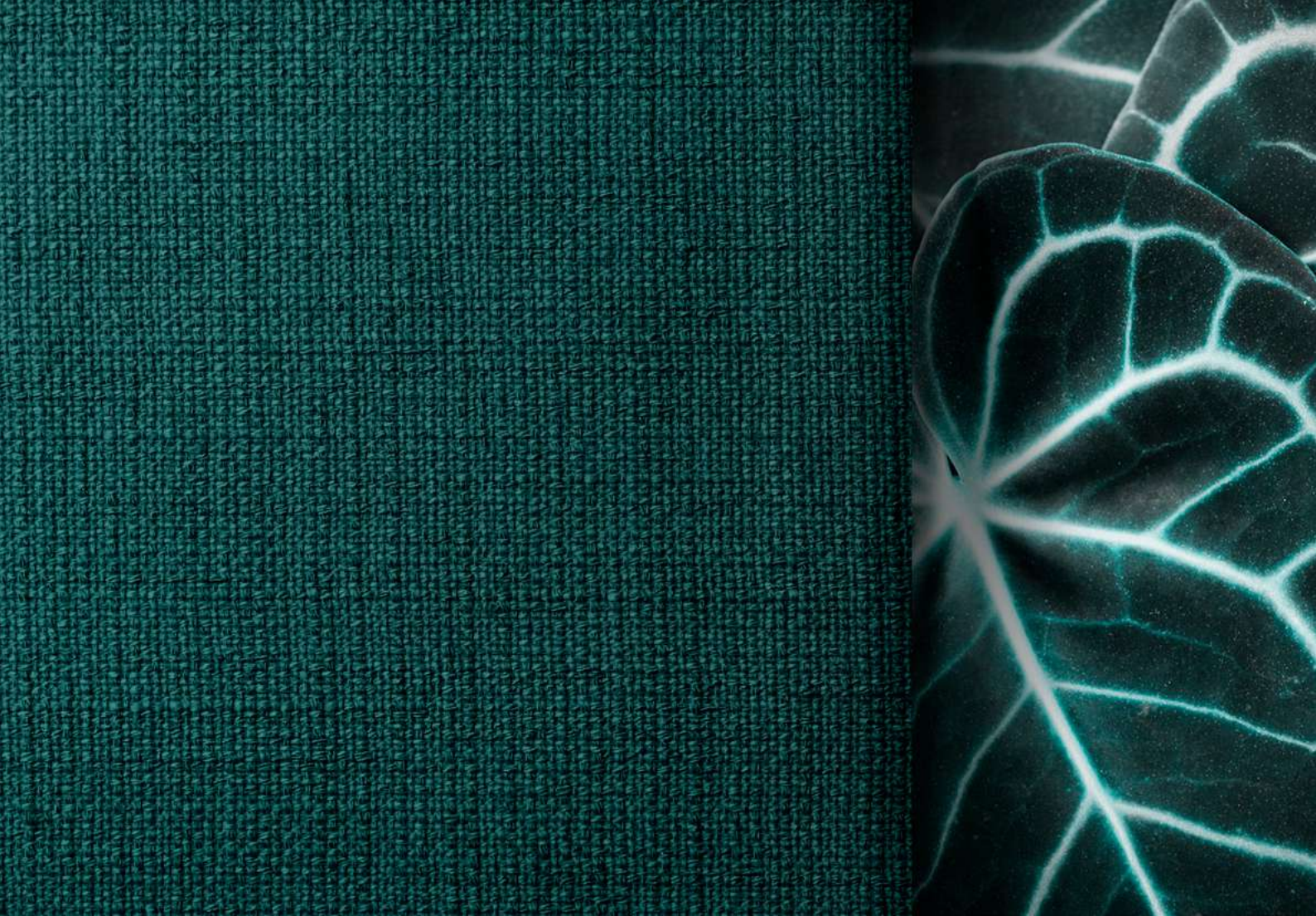




WHITE PAPER

Sustainability in *Fashion* *Value Chains*

Strategies, regulatory frameworks, and operational
levers for sustainable transition in the fashion sector



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About Tecno Group



Tecno Group is a SustainTech corporation that helps companies turn sustainability, technology and data into measurable business value. Founded in 1999 and today listed on Euronext Growth Milan as Tecno S.p.A. Società Benefit, the Group works with more than 4,100 companies through an integrated model that connects sustainable transformation, digital innovation and transition accounting.

At the core of Tecno Group's approach is the belief that sustainability creates value when it becomes part of how companies make decisions, manage operations and invest for the future. Bringing together strategic expertise, digital solutions and data-driven methodologies, the Group supports organizations in improving performance, strengthening resilience and navigating the Twin Transition with greater clarity and effectiveness.

This approach is reflected in the Group's broader ecosystem of specialised capabilities and partnerships, as well as in the creation of Italy's first Sustainability Hub, designed to connect businesses, universities and financial institutions around a shared objective: accelerating the transition towards more competitive, innovative and sustainable business models.

Executive Summary

Fashion's value equation is changing.

Brand strength, creativity and efficient production remain essential, but they are no longer enough on their own. Lower purchase prices can hide higher costs from quality failures, delays, waste and supplier dependencies, while higher selling prices increasingly need to be supported by product attributes that customers can recognise, such as quality, provenance, craftsmanship and durability. The result is a growing need for stronger evidence and control behind the product promise.

Sustainability creates value when it changes how the business operates.

This means shifting from purchase price to total product economics, from supplier approval to control over production conditions, and from brand promise to demonstrable product value. Market and regulation reinforce the same direction: the market determines where sustainability strengthens the customer proposition, while regulation raises the baseline for evidence and accountability.

Execution depends on moving evidence into decisions earlier. Environmental measurement needs to influence materials, design and sourcing before specifications are fixed. Traceability needs to support sourcing and supplier management, not transparency for its own sake. Claims need formal governance, while periodic audits and supplier codes need to be complemented by continuous multi-tier due diligence and responsible sourcing practices. SustainTech supports this shift by integrating data, technologies and scientific methodologies into business decisions.

The final challenge is scale.

Many of these capabilities sit across fragmented supplier networks and cannot always be built company by company. Shared platforms, district initiatives and industry cooperation can reduce duplication and strengthen execution across the value chain.

Key lessons

- Sustainability is becoming a lever for value creation, not a parallel agenda.
- Value increasingly needs to be demonstrated, not only communicated.
- Evidence matters when it changes product, sourcing or production decisions.
- Environmental & social evidence must be assessed upstream, before key choices are locked in.
- Stronger product economics and stronger value-chain control are becoming part of the same management agenda.

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Fashion's new value equation requires a change in how companies operate

Key message

Sustainability must become an operating mechanism for fashion's new value equation. Brand strength, creativity and efficient production remain fundamental, but sustaining their value increasingly requires evidence about the product and control over how it is made.

Pressure is building at both ends of the value chain. Lower purchase prices can conceal higher production costs, while pricing power weakens where selling prices exceed the value customers recognise. Market rewards for sustainability remain selective; regulation raises evidence and accountability requirements across companies, products and activities within scope.

The response requires three changes in how companies manage value:

- From purchase price to total product economics: incorporate resource use, quality, waste and lifecycle costs into product and sourcing decisions.
- From supplier approval to control over production conditions: connect supplier oversight with purchasing practices, capacity and visibility beyond direct suppliers.
- From brand promise to demonstrable product value: connect differentiation and communication with relevant product attributes and evidence that can be substantiated.

The value at stake is commercial and operational: credible differentiation, margin protection, production continuity and market access. Capturing it requires sustainability to inform the decisions made by product, procurement, production and communication functions, supported by the suppliers that deliver the product.

1.1. The breaking point: the end of the price-driven model

Fashion's historical value model has operated through a combination of brand strength, outsourced production and supply-chain efficiency^{1,2}. Cost optimisation has protected margins upstream, while pricing power has monetised brand strength downstream.

This model supported rapid growth, flexibility and relatively low internal complexity, allowing brands to concentrate resources on design, marketing, distribution and customer relationships. Its success also produced increasingly fragmented and multi-tier production networks^{2,3}. While brands built sophisticated capabilities to understand customers, visibility developed less consistently upstream, where information on materials, manufacturing processes and suppliers remains distributed across multiple actors, systems and tiers.

This has created a supply-chain asymmetry: sophisticated knowledge of customers is often accompanied by limited visibility over how and where product value is created upstream. As production networks become more complex, market preferences evolve and regulatory scrutiny increases, this visibility gap is becoming more economically material.

1.1.1. The breaking point: the end of the price-driven model

Global competition and margin pressure have pushed purchasing towards lower costs, shorter lead times and greater flexibility, transferring pressure across increasingly fragmented supplier networks^{2,3,4}. Beyond a certain point, however, lower purchase prices no longer translate into lower total product costs. Unauthorised subcontracting, quality

failures, delays and labour or compliance issues can offset initial sourcing savings and create additional exposure.

Limited visibility across fragmented production networks can widen the gap between planned and actual product cost through quality failures, inventory exposure, logistical inefficiencies and hidden supplier dependencies. These effects may remain outside conventional purchasing metrics until disruption or remediation makes them visible.

The economic issue is where the cost sits and when it becomes visible. A saving recorded by procurement may coexist with additional costs borne by production, logistics or quality functions, or with pressure absorbed by suppliers through their own production and subcontracting decisions. When these effects are assessed separately, the company can improve a purchasing metric while weakening the economics of the product as a whole.

Purchase price therefore provides an incomplete measure of sourcing performance. Protecting margin requires companies to understand the costs and risks generated by the conditions under which production is delivered.

1.1.2. Pricing power depends on the value customers recognise

Pricing power is facing a parallel constraint. Years of price increases across luxury have widened the gap between headline price and the value consumers perceive in product quality, craftsmanship, durability and experience. Recent price recalibrations, including a leading global fashion maison reduction of around 20–25% on its Mercato tote⁵, signal growing pressure to reconnect

price architecture with perceived product value.

Quality, provenance and craftsmanship remain sources of differentiation, but their contribution depends on what customers can recognise and what brands can substantiate. Materials, construction, durability and production conditions give substance to the product proposition. Fragmented information on these attributes makes the relationship between brand promise and product reality harder to demonstrate, particularly when a higher selling price asks consumers to recognise a corresponding increase in value.

The limits of the model emerge when lower input prices create hidden costs and higher selling prices are no longer matched by equivalent perceived value. Sustaining the value equation requires better control over product economics and stronger evidence behind the attributes customers are asked to reward.

1.1.3. The new value equation: value increasingly needs to be demonstrated

The new value equation extends the historical model. Brand strength and creativity continue to generate desirability, while efficiency and access to specialised production support the ability to deliver it. Sustaining those advantages increasingly depends on the ability to demonstrate product attributes and manage the production conditions behind them.

Value creation depends on the relationship between the value customers recognise in a product and the economics of delivering that value. Quality, provenance, craftsmanship and durability support differentiation and value retention. The materials, processes and production conditions behind them determine whether the promise can be fulfilled, at what cost

and with what exposure to disruption. Managing these dimensions together connects commercial positioning with the operational reality of the value chain.

Sustainability contributes to this equation through the performance of the product and its production system. Environmental choices influence resource use, waste and durability; social performance is shaped by labour conditions, purchasing practices and supplier relationships. When these considerations enter product and sourcing decisions, they can strengthen relevant product attributes, reveal hidden costs and reduce exposure to production failures. Their economic contribution comes from these effects, alongside the protection of market access and credibility.

Evidence and control make that contribution manageable. Product and supplier information allows companies to substantiate attributes and identify where performance needs to improve. Value-chain control gives them the ability to act on that information through specifications, purchasing conditions and supplier relationships. Collecting evidence has limited value if it leaves the underlying decisions and production conditions unchanged.

The resulting equation connects brand desirability, demonstrable product value and the ability to deliver it consistently at an acceptable cost and level of risk. Sustainability supports this connection when it improves how value is created, delivered and retained. The commercial return remains dependent on positioning and customer priorities, while regulation raises the evidence and accountability required across the activities within scope.



1.2. Product value increasingly depends on evidence and value-chain control

Market and regulation reinforce the new value equation through different mechanisms. The market determines where sustainability strengthens the customer proposition and which improvements consumers are willing to reward. Regulation raises the evidence and accountability required for companies, products and value-chain activities within scope, including where customers remain unwilling to pay an additional premium.

The distinction matters for strategy. A requirement to substantiate product information does not establish a commercial premium; limited willingness to pay does not remove the need to manage environmental and social performance. Companies need to understand both forces to identify where sustainability supports differentiation and where its contribution lies primarily in efficiency, risk management or market access.

1.2.1. Market polarisation is changing the economics of sustainability

Sustainability plays a different economic role across market segments. At the upper end of the market, it can reinforce differentiation when environmental and social performance support provenance, craftsmanship, durability and responsible production^{6,7,8}. As price sensitivity increases, its contribution needs to be more directly connected to product performance, efficiency and affordability.

This changes the investment rationale. Where provenance and craftsmanship support positioning, evidence can reinforce the credibility of a premium product. Where affordability dominates, improvements need to sustain the price-value proposition through product longevity or better operating economics. The role of sustainability follows the product proposition and the customer's priorities.

Table 1 – Sustainability plays a different economic role across fashion market segments

Market segment	Sustainability role	Value creation logic	Management implication
Top-end luxury	Value multiplier	Reinforces differentiation where provenance, craftsmanship, durability and responsible production support the product proposition	Use verified evidence to strengthen product credibility and premium positioning
Premium	Value enhancer	Adds value when sustainability is embedded in recognisable product attributes rather than offered as a separate benefit	Integrate sustainability into quality, durability and product performance
Accessible luxury	Value and margin protection	Limited room for additional premiums increases the importance of value for money, longevity and residual value	Protect the consumer proposition while reducing transition and compliance costs
Mass market and fast fashion	Efficiency and licence to operate	Sustainability creates value primarily through resource efficiency, risk reduction and compliance across high-volume supply chains	Embed environmental and social requirements into sourcing, cost and operating decisions

Source: 9, 10, 6, 8

The commercial implication is that there is no single sustainability premium. At the upper end of the market, sustainability can reinforce an already differentiated product proposition. As price sensitivity increases, its business case shifts towards tangible consumer

value, operating efficiency and margin protection. Stated willingness to pay therefore needs to be read alongside observed purchasing behaviour, which remains strongly influenced by price [Testa et. Al 2025].

FOCUS ON | Sustainability creates value when it reinforces product fundamentals

Sustainability does not create pricing power on its own. Its commercial value is stronger when it reinforces the attributes consumers already use to assess a product, rather than when it requires consumers to accept a separate premium.

- Standalone premiums face resistance. Only 24% of consumers selected the sustainable product when it carried a higher price. A further 40% chose the cheaper conventional alternative, while 36% continued searching.

- Circular offers can combine sustainability and affordability. When a second-hand alternative combined lower environmental impact with a lower price, 40% of consumers selected it.
 - Price remains a dominant decision factor. Only 36% of consumers demonstrated an ability to balance competing priorities in a fashion purchase. When sustainability competes directly with price, price remains the prevailing choice for most consumers.
 - Circular participation cannot be assumed. Between 2022 and 2024, the use of collection centres fell from 50% to 30%, donations from 50% to 36% and creative reuse from 32% to 13%. Circular strategies therefore cannot rely on consumer behaviour alone.
 - Product fundamentals remain central. For a coat, environmental attributes influence approximately 15 to 30% of purchase decisions, compared with 74% for price, 69% for comfort and 64% for quality and durability.
- Source: 6



Value retention extends this logic beyond the first transaction. The second-hand market, estimated at approximately €50 billion and growing two to three times faster than primary sales ^{9,7}, increases the economic relevance of durability, authenticity and verified product information.

Resale makes the persistence of product value more visible: the attributes that sustain desirability at purchase also need to support continued use and confidence in a subsequent transaction. This brings lifecycle considerations into the value equation. It also requires a distinction between value retained by the customer and value captured by the company through its own repair, resale or service model.

1.2.2. Regulation is raising the baseline for evidence and accountability

Multiple regulatory requirements increasingly depend on the same product and supplier information. Their cumulative effect covers product design, sourcing, reporting, labour conditions, environmental communication and end-of-life responsibility ^{11 - 15}.

For fashion companies, the resulting challenge is organisational as well as legal. Evidence held by different suppliers and functions needs to support several obligations and business decisions, with consistent information on the product and the conditions under which it is made.

TABLE 2 – European regulation is extending evidence requirements across the fashion value chain

Framework	What it means for textiles	Key dates
Directive (EU) 2022/2464 Corporate Sustainability Reporting Directive (CSRD) ¹⁶	Sustainability reporting, including Scope 3 and supply chain impacts.	2025: first reports. 2026: more large companies. 2027–2029: later waves.
Directive (EU) 2024/1760 Corporate Sustainability Due Diligence Directive (CSDDD) ³	Mandatory human-rights and environmental due diligence across the value chain.	2024: in force. 2026: transpose. 2027–2029: phased application.
Regulation (EU) 2024/1781 Ecodesign for Sustainable Products Regulation (ESPR) ¹²	Eco-design rules and digital product passport for selected textile products.	2024: in force. 2026+: product rules expected.
Regulation (EU) 2023/1115 EU Deforestation-free Products Regulation (EUDR) ¹³	Due diligence for deforestation-linked raw materials in textile supply chains.	2026 for medium and large operators. 2027 for micro and small operators.
Directive (EU) 2025/1892 amending Directive 2008/98/EC on waste Textile Extended Producer Responsibility (EPR) ¹⁴	Producers pay for collection, sorting, reuse and recycling of textile waste.	2024–2027: national schemes expand.
(EU) 2024/3015 Regulation on prohibiting products made with forced labour on the Union market – Forced Labour Regulation (FLR) ⁴	Bans textile products made with forced labour.	2024: in force. 2027: applies.
Directive (EU) 2024/825 Empowering Consumers for the Green Transition (ECGT) ¹⁵	Bans generic / unsubstantiated green claims and weak ecolabels in B2C communication.	2026: transposition and rules apply.

Source: EU legal frameworks referenced in this chapter 11–15.

The strategic significance extends beyond individual regulatory timetables. Sustainability information is moving closer to the product and deeper into the supply chain. Fragmented systems, duplicated supplier requests and unclear data ownership increase the cost of meeting requirements that draw on overlapping evidence.

Compliance therefore depends on the operating model: how information is

collected, who validates it and how it is used across design, procurement, sustainability, legal and communication functions. Product specifications, supplier selection and communication decisions shape the evidence a company will subsequently need to provide. Addressing these requirements when choices are made gives the business a more coherent basis for execution than assembling information only when a report, claim or regulatory obligation becomes due.

1.2.3. Market and regulation converge on evidence and control

Product and supplier evidence increasingly serves both commercial and regulatory purposes. Provenance can support differentiation and origin

requirements; lifecycle information can support value retention and product responsibilities; production records can support credible claims and supplier oversight ^{17,12}.

TABLE 3 – Market and regulation converge around four management requirements

Theme	Market pressure	Regulatory pressure	Management requirement
Provenance and traceability	Origin and authenticity increasingly support trust and differentiation	ESPR, DPP and EUDR increase product and origin information requirements	Build a consistent product and supplier evidence base across the value chain
Circularity and value retention	Repair, resale and longevity extend value beyond the first transaction	ESPR and textile EPR extend responsibility across the product lifecycle	Connect product design, lifecycle information and end-of-life management
Credible communication	Trust declines where claims cannot be substantiated. More than half of environmental claims assessed in the referenced EU analysis lacked adequate verification ¹¹	ECGT raises the threshold for environmental communication	Link claims to verified evidence and formal approval processes
Responsible production	Production conditions increasingly influence brand and product credibility	CSDDD and the Forced Labour Regulation (FLR) strengthen supply-chain accountability	Extend visibility and control beyond direct suppliers

Source: Authors’ elaboration based on market, consumer, regulatory and product-data.

Traceability provides an information base for these requirements. Turning it into control depends on validating the evidence, assigning accountability and connecting the information to business decisions. Product-level data must remain linked to the suppliers, processes and production conditions it describes.

The distinction between information and performance is central to the new value equation. Knowing where a material originates enables scrutiny of its provenance; it does not by itself improve the material or the conditions under which it is produced. The commercial and

operational benefit depends on using that knowledge to support a product promise, address an identified weakness or change a production decision.

The bottleneck is execution. Companies may hold substantial information on materials, suppliers and production, yet still struggle to use it across functions and tiers. The strategic task is to connect the evidence needed to demonstrate value with the decisions needed to create and protect it. This is where sustainability becomes a management discipline within the business model.

1.3. Sustainability must become an operating mechanism for value creation

Sustainability must become an operating mechanism for the new value-creation model, connecting product differentiation, supply-chain performance, risk management and customer relevance. The new value equation requires companies to manage the value promised to the customer together with the economics and responsibilities of producing it. Environmental and social considerations contribute when they influence material choices, product development, purchasing conditions and the capabilities on which production depends ^{2, 18}.

1.3.1. The new value equation changes how product and sourcing decisions are made

The contribution of sustainability depends on where it changes a business decision. Material selection affects resource use, quality and cost; purchasing terms influence supplier capacity and labour conditions; product information shapes what customers can assess and trust. These connections bring sustainability into the decisions that determine both the product proposition and its economic viability.

TABLE 4 – Three management shifts connect sustainability with the new value equation

Management shift	What changes in the decision	Contribution to the new value equation
From purchase price to total product economics	Assess materials, processes and sourcing against resource use, quality, waste, durability and lifecycle costs before specifications are fixed ^{2, 18} .	Protect margin through better resource use and fewer production failures; improve performance and longevity where they support the customer proposition.
From supplier approval to control over production conditions	Connect supplier oversight with pricing, lead times, order volumes and capacity. Extend visibility to subcontractors and use findings to adjust purchasing conditions and support improvement ^{2, 3, 4} .	Reduce exposure to hidden subcontracting, defects and delays. Support the labour conditions and skills needed for reliable production.
From brand promise to demonstrable product value	Align product specifications, supplier evidence and market communication. Substantiate attributes such as origin, craftsmanship, durability and production conditions ^{16, 15} .	Make differentiation credible and relevant to the customer. The commercial return depends on positioning and customer priorities.

1.3.2. Governance and digital integration turn sustainability into a management discipline

Companies already hold substantial supply-chain information in supplier records, production logs, certifications,

logistics systems and quality controls. The structural weakness is governance: information remains distributed across systems that do not communicate, formats that differ between actors and processes managed independently at each tier ¹⁸. This fragmentation limits the

ability to connect product performance with the conditions and costs of production.

SustainTech is a business management operating model that integrates data, technologies and scientific methodologies to enable decisions aimed at generating

measurable, profitable and lasting value for the business, people and the planet. In fashion, it connects environmental and social evidence with the product, production and commercial information used to manage the business.

FOCUS ON | Building shared supplier data across brand networks

Digital traceability platforms, such as Ympact, illustrate how supplier information can be organised across large, multi-brand networks. They bring together and manage ESG and traceability data across the supply chain and at product level with certification and audit records, creating a structured information base and giving smaller suppliers, which may not be able to build this infrastructure individually, a practical way to participate.

The management value lies in turning duplicated and fragmented supplier requests into structured information that can be maintained consistently and reused across brand relationships. This creates a stronger basis for supplier engagement, assessment and follow up while reducing duplication across the network.

Shared infrastructure does not replace accountability. Clear responsibilities for data quality, validation and use remain essential, while brands and other organisations retain responsibility for the production and purchasing decisions informed by that data.

Within a SustainTech operating model, data collection and traceability platforms provide the shared infrastructure through which data, technology and structured methodologies can operate across company boundaries and support better informed business decisions.

Scientific methodologies provide a basis for assessing impacts and comparing alternatives. Digital integration connects these assessments with product development, sourcing and enterprise systems, keeping information linked to the materials, suppliers and processes it describes. Data governance establishes ownership, validation, access and updating responsibilities. Together, these elements allow teams to use consistent evidence and evaluate the results of their decisions ^{18, 17}.

Executive leadership must nurture an organisational culture that connects sustainability objectives with business plans, budgets and performance reviews. Product, procurement, production and communication teams remain accountable for the decisions they own; sustainability specialists contribute methodologies, expertise and evidence. Shared information allows these functions to identify conflicts early, assess their economic and operational implications and agree changes ^{18, 17, 12, 15}.



Leadership behaviour and incentives must encourage teams to use evidence, raise concerns and take responsibility for improving results.

Traceability provides an information base for this model. Turning visibility into control requires validated evidence, authority to act and follow-through on corrective measures. Its contribution becomes tangible when findings change specifications, purchasing terms, supplier development or product claims, and the resulting improvements can be measured.

"The future of sustainable fashion depends not only on how products are made, but also on how their value is understood. As consumers increasingly look for tangible proof of what lies behind a product, transparency and traceability can make craftsmanship, environmental impact and social responsibility more visible and verifiable. But evidence alone is not enough. Education, from schools to universities, has a critical role to play in building the awareness needed to recognise this value. Companies and consumers therefore need to move together: businesses making product value increasingly transparent and verifiable, and consumers developing the knowledge to understand it and make more informed choices."

Alessandro Allocca,
Journalist, La Repubblica

1.3.3. Shared capabilities extend execution across the value chain

Implementation also depends on capabilities distributed across the supply base. Smaller manufacturers may hold essential production knowledge while lacking the resources to build measurement systems, digital infrastructure or specialist expertise independently. Shared services and industrial platforms can make these capabilities accessible, coordinate supplier participation and reduce repeated information requests ^{2, 17}.

The appropriate arrangement depends on the capability required. Partnerships can support investment in specific processes; consortia and district initiatives can provide common tools and technical support where firms share needs. Effective coordination requires clear responsibilities, compatible data standards, protection of commercially sensitive information and a workable allocation of costs and benefits. Public institutions and sector associations can support continuity, skills development and access to investment, helping collective initiatives become lasting industrial capabilities ^{19, 20}.

"No company, regardless of its scale or commitment, can transform the system on its own. Leading GFA, one of the most important focuses has been to mobilize the entire industry and its ecosystem understanding that sustainability challenges are shared across the value chain and can only be addressed through collective actions"

Federica Marchionni,
CEO, Global Fashion Agenda

Institutional cooperation between the Italian and French fashion systems, reinforced by the voluntary ESG harmonisation framework developed by Camera Nazionale della Moda Italiana (CNMI) and Fédération de la Haute Couture et de la Mode (FHCM), shows how cross-border alignment can reduce fragmentation across shared supply chains. Greater consistency in ESG information and supplier expectations can reduce duplication, support collaboration on sustainability, skills and savoir-faire, and create a more coherent operating environment for brands and suppliers, while leaving due diligence responsibilities with each company ²¹.

Building on these agreements, institutional and industry cooperation should support capabilities that improve environmental and social performance, strengthen products and sustain the industrial base across both countries. Common requirements provide a foundation; the value comes from their application in production and business decisions.

The operating starting point is the product: its materials, processes and supplier relationships. Environmental measurement informs design and sourcing choices, helping improve resource efficiency, durability and the evidence behind product claims. The social conditions behind the product reinforce that value when responsible purchasing, fair labour practices and skills development support production continuity and the capabilities behind quality and craftsmanship. Governed data connect both dimensions to the decisions that shape the product, making the new value equation a discipline of business management.

The operational imperative: building verifiable product value through environmental performance management

Key message

Environmental sustainability creates value when it becomes part of how products are designed, sourced, managed and communicated. For fashion companies, the challenge increasingly lies in turning fragmented product and supply-chain information into evidence that can support operational decisions.

Turning this ambition into execution requires **four connected steps**:

1. **Measure** environmental performance early enough to influence design, material, sourcing and investment choices.
2. **Trace** materials, suppliers and processes across tiers, linking product impacts to where they are actually generated.
3. **Govern** environmental claims through a common evidence base connecting product, sustainability, legal and communication functions.
4. **Scale** the model across supplier ecosystems through shared infrastructure and collaborative platforms, particularly where SMEs cannot build these capabilities independently.

The value at stake is operational as well as commercial. Stronger environmental information helps companies focus investment where it delivers the highest measurable return. Companies that remain reactive face higher adaptation costs, weaker control over environmental performance and greater regulatory, operational and competitive pressure.

2.1. Environmental performance as a product management discipline

The pressure comes from the scale and inefficiency of the system. Large volumes of materials enter and leave the fashion value chain with limited visibility, low recovery rates and weak

coordination across actors. The scale of these flows makes environmental performance an industrial issue as much as a sustainability one.

FOCUS ON | Material flows reveal the scale of the operating challenge

- In Italy, textile waste generation is estimated at around 615,000 tonnes per year, while approximately 154,000 tonnes are collected separately, corresponding to roughly 16–20% of textiles placed on the market.
- Across the EU, textile consumption reached approximately 19 kg per person in 2022, with around 12 kg per person discarded each year.
- This consumption footprint is associated with significant lifecycle impacts, including approximately 355 kg of CO₂ emissions, 12 m³ of water use, 323 m² of land use and 523 kg of raw materials per person.

Source: 27, 28, 29

The operating-model gap extends across product design, raw-material origin, processing, manufacturing, logistics, use and end-of-life. Yet the data required to manage these impacts is often fragmented across functions, systems, suppliers and geographies ^{29, 30}.

For the industry, fragmentation creates hidden costs across the value chain: inefficient material use, exposure to overproduction and waste, limited control over upstream impacts, duplicated data requests, difficulties in verifying product information and greater complexity in aligning design, sourcing, compliance and communication.

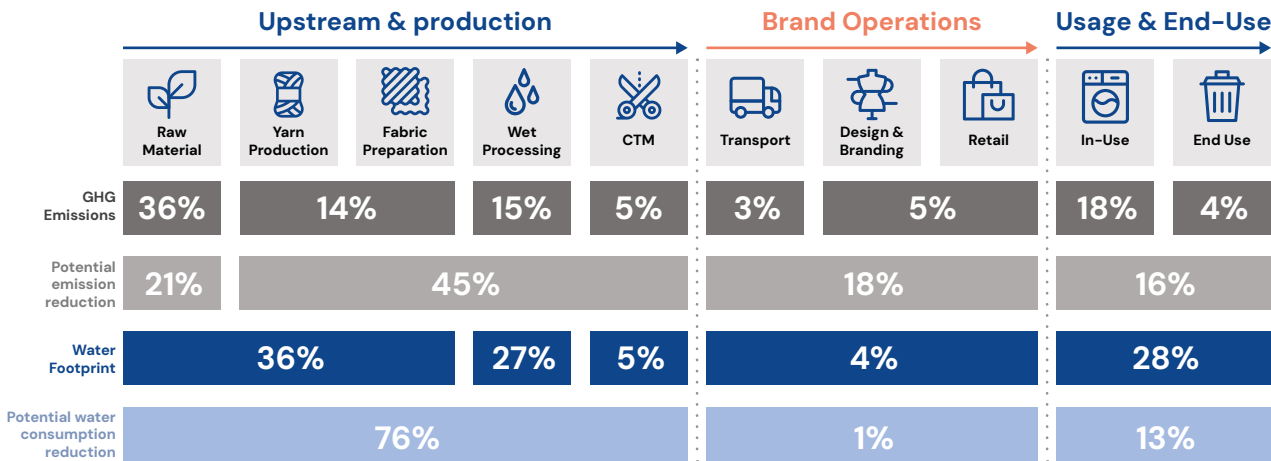
Closing this gap requires a product-data operating model that turns environmental performance into a managed business discipline across the value chain.

Regulation accelerates this operating shift, but does not fully define its business case. The Ecodesign for Sustainable Products Regulation and the Digital Product Passport translate environmental performance into product-level information and design requirements. Rules on environmental claims increase the need for evidence-backed communication, while textile waste and end-of-life requirements raise the cost of weak lifecycle control.

The strategic issue for companies is broader than compliance: building the internal and external capabilities needed to use environmental data effectively and strategically across the value chain ³⁰.

TABLE 6 – Emission and water impact of the textile industry

The textile industry generates an estimated 2–8% of global GHG emissions ²², while dyeing and finishing operations account for around 20% of global clean-water pollution ²⁸.



Source: Authors’ analysis based on 23, 26.

2.2. Measurement must move upstream

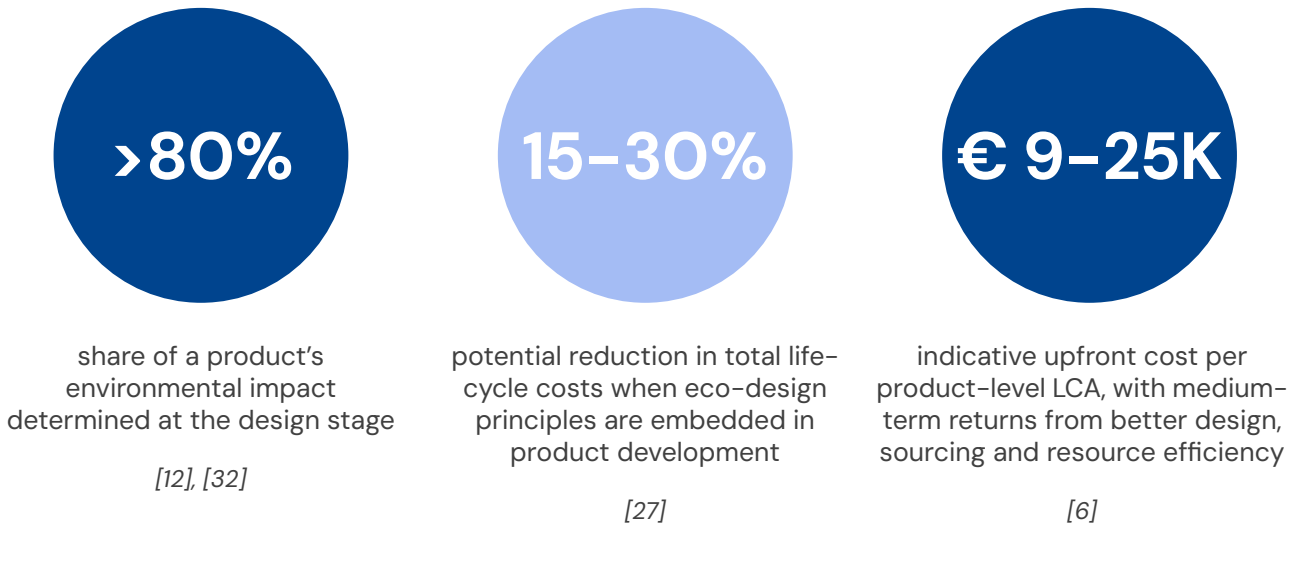
In fashion, the environmental profile of a product is largely determined before formal assessment begins. Material selection, construction methods and supplier choices made during product development shape the impacts that a Life Cycle Assessment will later quantify. For many companies, LCA still arrives too late. It documents decisions that have already been locked into the product.

Structured measurement closes this gap by moving environmental data into sourcing and product-development processes while there is still room to act. The objective is not to produce more assessments, but to turn environmental information into a decision-making input for design, material and supplier choices.

The structural obstacle is data access. Information is distributed across raw-material origin, processing, manufacturing, logistics, use and end-of-life. Much of the primary data sits with suppliers,

arrives in inconsistent formats and is collected at different stages of the sourcing process. Without aligned system boundaries, transparent assumptions and standardised data formats, results cannot be compared reliably or translated into decisions ^{33, 30}.

TABLE 7 – Why early measurement matters: impact, cost and decision leverage



Addressing this challenge requires integrating measurement into the tools and routines designers, procurement teams and sustainability functions already use. Environmental data should feed design briefs, material evaluation, supplier selection and investment decisions as a standard input.

This requires a shared data model across the value chain, with consistent assumptions, interoperable supplier information and performance benchmarks that allow companies to compare alternatives before specifications are fixed.

The strategic value of measurement lies in prioritisation. By identifying where impacts are concentrated, companies can direct resources towards actions with the highest measurable return. Industry evidence shows that raw materials and upstream processing are often among the highest-leverage impact areas in fashion, making early design and sourcing decisions critical control points ^{29, 27}.

In the assessed LCA and circularity cases, upstream raw materials accounted for more than 97–99% of total impacts, confirming that supplier investment and

compliance effort should be directed where product impact is actually generated ⁶.

Measurement also improves capital allocation. Companies can distinguish between interventions that generate measurable environmental improvement and initiatives that add complexity without materially changing performance. The assessment should consider both the effect on product economics and how costs and benefits are distributed across the value chain, particularly where suppliers are required to invest in new processes, capabilities or data infrastructure. Making these trade-offs visible supports more selective investment in materials, sourcing and supplier capabilities, while helping management avoid spreading resources across initiatives that are difficult to scale or substantiate.

Companies that build measurement infrastructure early can use environmental data competitively. They can test product and material alternatives before cost and design choices are fixed, focus supplier engagement on the most relevant impact areas and prepare evidence for future product-data

requirements. Companies that start late will need to build the same capability under regulatory deadline pressure, at higher cost and with less room to turn measurement into a source of competitive advantage.

CASE STUDY: Measurement applications across design, circularity and life-cycle decisions			
Loro Piana · Vivienne Westwood · Yamamay			
BUSINESS CHALLENGE	Yamay, Vivienne Westwood and Loro Piana operate across different market segments and organisational contexts, but faced the same management issue: turning sustainability measurement into usable input for product development, sourcing and strategic decision-making without slowing down creative and industrial processes.		
APPROACH & RESULTS	The Sustainability Management Laboratory of Sant’Anna School of Advanced Studies and Ergo Srl developed three complementary applications of environmental measurement across different decision levels:		
Company	Focus	Enabling tool	Key outcome
Loro Piana	Focus supplier investment and innovation on the upstream hotspots that drive most product impact	Product and organisation-level LCA	Raw materials represented more than 97–99% of assessed impacts; recycled-input scenarios showed potential reductions of approximately 16–17% across selected impact categories
Vivienne Westwood	Prioritise circularity interventions across the lifecycle and value network	Circularity assessment framework	Actionable improvement opportunities identified, including three short- to medium-term interventions for each phase through the Circular Check-up Tool.
Yamay	Improve recyclability during product development	Customised eco-design tool	Mono-material solutions, simplified construction and reduced use of accessories incorporated into design choices.
STRATEGIC INSIGHT	Environmental measurement turns sustainability into a management lever. When embedded early in product development and sourcing decisions, it helps companies identify where value is lost, where intervention has the highest return, and which product choices strengthen both performance and market credibility. The three cases show that LCA, circularity assessment and eco design are part of a broader operating capability: using environmental data to guide investment priorities, reduce hidden life-cycle costs, improve resource efficiency and substantiate product value. Companies that build this capability before product specifications are fixed can use sustainability as a driver of margin protection, compliance readiness and competitive positioning.		

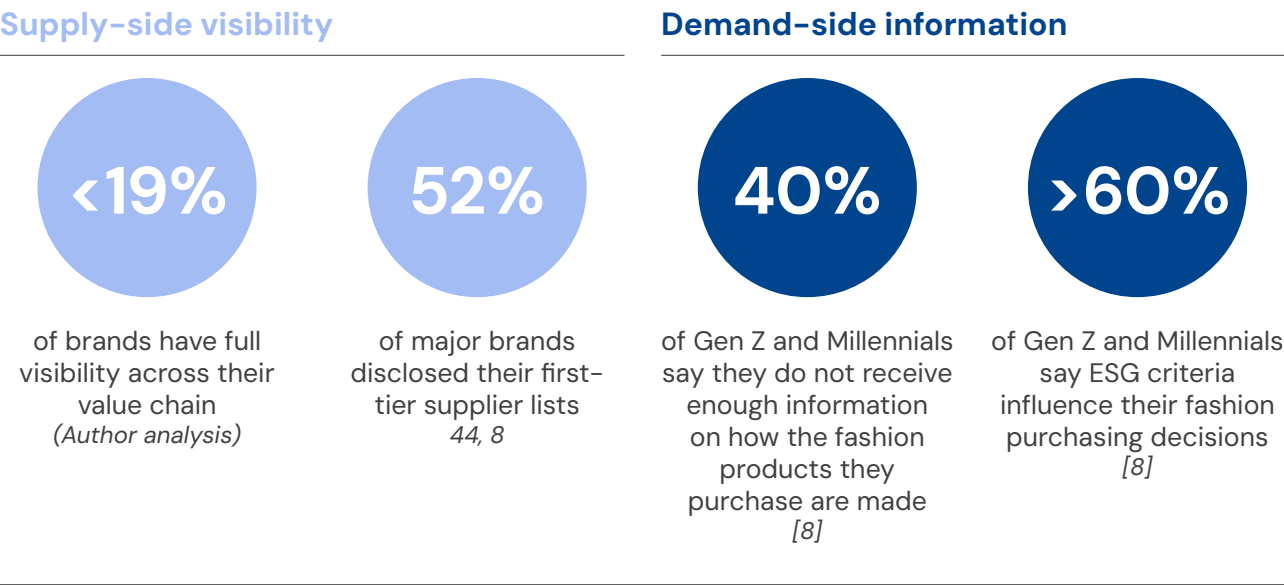
Source: direct project experience developed by Ergo Srl (part of Tecno Group) and the Sustainability Management Laboratory of Sant’Anna School of Advanced Studies

2.3. Application: traceability and sourcing as operational levers

Traceability is the infrastructure that connects measurement data to the decisions made across the supply chain. Once a company can measure environmental performance, the operating question becomes how that data flows: which actors provide it, at what point in the sourcing process, in which format, and with what level of assurance.

This is critical in fashion because production is fragmented across multiple suppliers, geographies and transformation stages. Many brands still have limited visibility beyond Tier 1, while the environmental performance of a product is often determined further upstream, where raw material extraction, fibre production, dyeing, finishing and subcontracted processing take place³⁰. Today, around 60% of international trade consists of intermediate goods and services exchanged within global value chains, confirming the level of interdependence across production systems^{34, 35}. In parallel, global fibre production reached a record 124 million tonnes in 2023, making material selection one of the most important sourcing decisions in the sector³⁵.

TABLE 8 – The product-information gap exists on both sides of the market



The operating model therefore shifts from supplier visibility to multi-tier data governance. Companies need to define the information required from each supplier tier, distinguish primary supplier data from validated secondary datasets, onboard suppliers into structured collection processes and progressively extend traceability beyond direct suppliers.

Procurement is the translation layer in this shift. It turns sustainability objectives into supplier qualification criteria, purchasing requirements, data obligations and long-term collaboration models. Digital platforms and interoperable standards make this scalable, particularly where SMEs cannot independently manage fragmented data requests, bespoke reporting formats or complex traceability requirements.

TABLE 9 – Traceability data by supply-chain layer and management use

Supply-chain layer	Data to collect	Decision it enables
Tier 1 CMT manufacturer	Primary, contractual data: production sites, volumes, certifications	Supplier qualification and purchasing criteria
Tier 2 and 3 Upstream processing	Onboarded primary data and validated secondary datasets for spinning, dyeing and finishing	Hotspot identification and LCA data quality
Tier 4 Raw material origin	Provenance and material attributes: fibre type, recycled content, processing	Material selection and Digital Product Passport readiness

Source: Authors’ analysis



The value of traceability is not transparency for its own sake. Better information supports stronger sourcing decisions, closer supplier coordination and lower hidden costs. Reliable supply-chain data help companies identify material hotspots, reduce exposure to defects and overproduction, improve the quality of LCA and circularity assessments and close the gap between standard and actual product cost.

Traceability also creates the operating base for emerging product-data requirements. Digital Product Passport developments reinforce the need for structured, interoperable and product-level information, but the commercial value is broader ^{36, 37}.

When supplier and material data are governed effectively, traceability becomes a sourcing lever: companies can select better inputs, engage suppliers more effectively and substantiate product value with evidence that travels with the product.

CASE STUDY: Making multi-tier traceability scalable for SMEs <i>Trick Project · Horizon 2020</i>	
BUSINESS CHALLENGE	SMEs operating in fragmented textile value chains often lack the scale, digital capabilities and resources required to respond efficiently to multiple traceability and product-data requirements. Ensuring alignment with emerging requirements such as the Digital Product Passport also required moving from fragmented and manual data systems to more structured, interoperable and regulation-ready approaches.
APPROACH	The Horizon 2020 TRICK project, involving Scuola Superiore Sant’Anna as a partner, developed a shared infrastructure for collecting, managing and exchanging information across the textile and fashion value chain. The platform combined: • product-level environmental information, including LCA-based data; • multi-tier traceability across the supply chain; • interoperability standards; • blockchain-based architectures supporting secure and verifiable information exchange.
RESULTS	The project highlights the value of a blockchain-based platform for traceability management: • Greater availability and standardisation of sustainability-related information across supply-chain actors. • Improved traceability across multiple tiers. • Increased readiness of SMEs for emerging product-transparency requirements, including Digital Product Passport-related data needs.
STRATEGIC INSIGHT	Traceability scales when companies can reuse interoperable data across multiple customers and business needs rather than rebuilding the information flow for every request. Shared infrastructures can lower participation barriers for SMEs while supporting sourcing, environmental assessment, product transparency and compliance readiness.

Source: Project experience of Ergo Srl, part of Tecno Group, and the Sustainability Management Laboratory at Sant’Anna School of Advanced Studies.

2.4. Green claims need product-grade controls

Environmental claims are moving from marketing language to governed product information. Statements on sustainability, circularity, materials, durability or environmental performance increasingly need to reflect actual product characteristics, rely on recognised methodologies and remain consistent with the evidence generated across design, sourcing, production and lifecycle management.

The exposure is material. Across 15 EU Member States, 80% of product advertisements analysed carried at least one environmental claim, and 53% of them were found to be vague, misleading or unfounded ³¹. In a market where consumer trust is fragile, perceived greenwashing can quickly translate into reputational damage, regulatory scrutiny and loss of credibility ³⁸.

FOCUS ON | Environmental claims as a consumer-protection and business-risk issue

From 27 September 2026, the Empowering Consumers for the Green Transition Directive will strengthen consumer-protection rules concerning generic and unsubstantiated environmental claims.

For fashion companies, this raises the standard of evidence behind product communication. Product characteristics, environmental data, labels and marketing claims increasingly need to operate as one controlled system, aligned with applicable product, sourcing and consumer-protection requirements. Generic claims that cannot be substantiated with recognised evidence are no longer defensible.

The operating response requires a more integrated communication model. Product teams define product characteristics; sustainability functions assess supporting data and methodologies; legal teams assess defensibility; and communication teams translate verified information into clear and proportionate language for the market.

This coordination becomes particularly important across the product lifecycle. Consumer decisions to buy, use, repair, share, resell, reuse or dispose of products reflect different motivations, benefits and barriers. A single sustainability narrative is therefore insufficient. Tailoring information to each decision point can

support more sustainable consumer behaviours and the development of circular business models.

Managing this at scale requires formal claims governance. Companies need validation procedures, cross-functional review, defined approval rights and monitoring mechanisms to ensure that environmental statements remain accurate as product information changes. Some companies formalise this process through a dedicated claims committee that reviews wording, evidence and risk exposure before communication is released to the market ³¹.

TABLE 10 – Environmental claims governance: from evidence to market

1. Substantiate →	2. Validate →	3. Approve →	4. Monitor
Primary data and a recognised methodology establish the evidence base for each claim.	Cross-functional review across sustainability, legal and marketing checks consistency and screens risk.	A dedicated committee signs off the claim before release.	The claim is kept consistent with the evidence and updated or withdrawn as data changes.

Source: Authors’ analysis

The strategic value lies in turning communication into a controlled business process. Claims governance connects product data, legal validation, stakeholder relevance and market communication through a single approval logic. This protects brand equity, reduces remediation costs, supports compliance with evolving consumer-protection requirements and strengthens the credibility of environmental communication.

which require stronger evidence, which should be reformulated, which must be removed and how verified information should be adapted to different circular behaviours.

Evidence-backed communication becomes a source of trust when it is governed with the same discipline as product quality, legal risk and commercial positioning.

For fashion brands, the relevant capability is not the ability to produce more sustainability content. It is the ability to determine which claims can be made,



CASE STUDY: Turning environmental claims into a controlled approval process

| Confidential global luxury fashion house

BUSINESS CHALLENGE	A global luxury fashion house needed to ensure that sustainability statements across product communications, campaigns and corporate channels were consistently supported by product evidence and aligned with evolving regulatory expectations. The challenge was to establish clear governance to determine which claims could be used, substantiated further, revised or withdrawn, while ensuring traceability across each stage of the approval process.
APPROACH	Ergo Srl and the Sustainability Management Laboratory of Sant’Anna School of Advanced Studies reviewed claims across the analysed product lines against available product data, primary information where available, recognised methodologies and internal documentation. A dedicated Claims Oversight Committee was subsequently established across sustainability, legal, product and communication functions, with defined responsibility for evidence quality, wording and final approval.
RESULTS	- Generic environmental claims reduced by approximately 40% across the analysed product lines. - Unsupported or insufficiently substantiated claims removed or reformulated into more specific and verifiable statements. - Product evidence, methodological review, legal validation and communication integrated into a common approval process.
STRATEGIC INSIGHT	Claims governance protects brand equity by ensuring that communication never moves faster than the evidence behind the product. Formal controls reduce greenwashing exposure while strengthening the credibility and defensibility of product-level claims.

Source: Project experience of Ergo Srl, part of Tecno Group, and the Sustainability Management Laboratory at Sant’Anna School of Advanced Studies.

2.5. District collaboration scales capabilities across fragmented supply chains

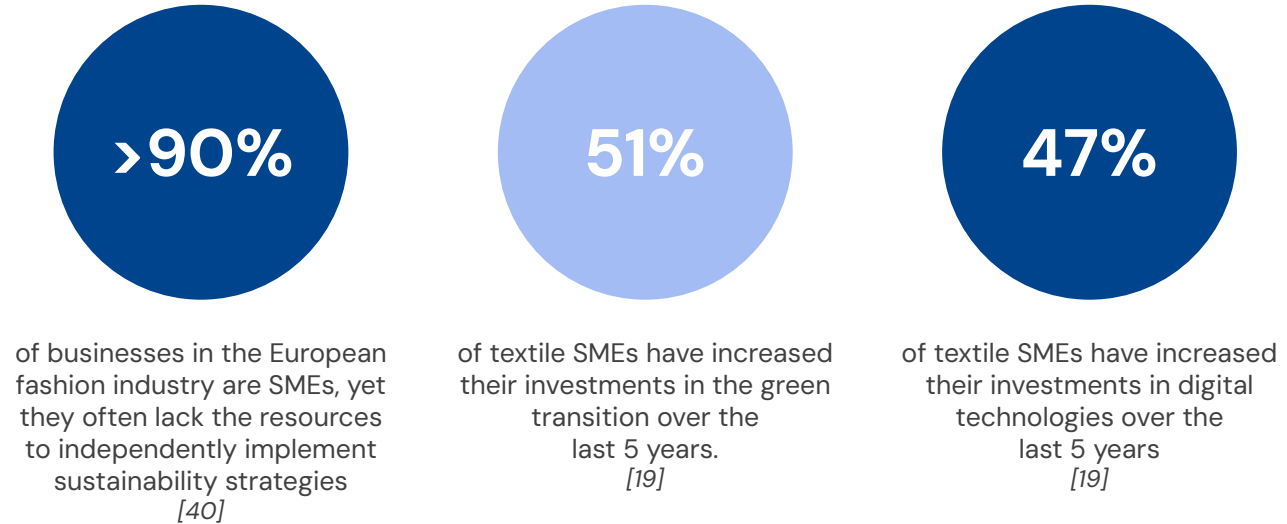
Fashion value chains are too fragmented for every sustainability capability to scale firm by firm. The industry combines specialised production ecosystems with a high prevalence of SMEs that often

hold critical technical know-how but may lack the investment capacity, digital infrastructure and specialist expertise required to address measurement, traceability, circularity and product data

independently ³⁹. This creates a case for shared capabilities where companies face common requirements, operate within sufficiently

connected production ecosystems and can benefit from services or infrastructure that do not need to be replicated firm by firm.

TABLE 11 – SMEs dominate the supplier base, but transition capabilities remain fragmented



Many SMEs are already investing in green and digital capabilities, but these investments remain dispersed across companies facing overlapping requirements, limited technical resources and fragmented data requests. The opportunity is therefore not simply to increase investment, but to identify which capabilities can be developed more effectively at ecosystem level.

District collaboration is one response where these conditions are present. Common measurement tools, traceability infrastructure, circularity frameworks,

training programmes and technical support can lower the cost of capability building, improve comparability and reduce duplication across specialised supplier networks ¹⁹. The model only works when it is governed. Firms that may also compete need to align incentives, protect commercially sensitive information and sustain participation beyond the initial funding cycle. Clear roles, data-sharing rules, confidentiality protocols and continuity mechanisms are needed to turn collective ambition into an operating platform ²⁰.

FOCUS ON | Orchestration turns district initiatives into investable infrastructure

District collaboration creates lasting value only when it moves beyond informal cooperation. A credible platform typically combines four functions:

- Industrial participation: companies contribute operational knowledge, supplier realities and implementation needs.

- Methodological rigour: universities and technical partners ensure that measurement, traceability and circularity tools remain robust and comparable.
- Institutional continuity: public bodies and sector organisations provide legitimacy, coordination and access to funding opportunities.
- Demand anchoring: brands align supplier requirements, generate market pull and can co-invest in capabilities that strengthen the wider ecosystem.

When governance, data flows and shared services are clearly structured, fragmented supplier needs can be translated into fundable programmes for the green and digital transition. The district becomes not only a production ecosystem, but a platform capable of attracting public, institutional and private capital ²⁰.

The strategic value lies in scaling capabilities, rather than individual initiatives. Environmental performance cannot become verifiable product value if the supplier base lacks the tools to measure, trace and improve it. District-level infrastructure allows fragmented value chains to move together, creating a territorial credential based on shared standards, auditable performance and interoperable data. In this model, the reputation of the district can become part of the value associated with its products.

The benefits differ for large brands and SMEs:

- For **large brands**, district collaboration becomes a sourcing asset. Shared tools and standards can reduce supplier-engagement costs, improve data consistency, support supplier qualification and allow brands to co-invest in capabilities that accelerate transition across several firms at once.
- For **SMEs**, shared infrastructure lowers the cost and complexity of compliance, improves access to technical expertise and can strengthen visibility towards premium buyers. Sustainability shifts from

an individual burden to a capability embedded in the wider production ecosystem.

“Made in Italy in fashion now stands for social responsibility and environmental sustainability, as much as for beauty and quality. Italian artisan enterprises and SMEs have long embodied this value. For Italy’s Fashion System to strengthen its role as a global hub of craftsmanship, excellence and creativity, the whole supply chain needs to share that vision. This means recognising the strategic and economic value of its skills, expertise and know-how.”

Antonio Franceschini,
National Head, CNA Federmoda

CASE STUDY: Building shared circularity capabilities at district level

| *San Mauro Pascoli footwear district · Como textile district*

BUSINESS CHALLENGE	San Mauro Pascoli (footwear) and Como (textiles) districts combine highly specialised manufacturing capabilities with a fragmented base of SMEs. Circularity was difficult to scale if every company was expected to develop its own methodologies, data infrastructure and technical expertise.
APPROACH	Ergo Srl and the Sustainability Management Laboratory of Sant’Anna School of Advanced Studies designed sector-specific methodologies and facilitated structured working groups with participating companies. Local institutions anchored the process: • the Como-Lecco Chamber of Commerce in Como; • CERCAL and ART-ER in San Mauro in Pascoli. Circularity assessment tools and frameworks were developed together with participating firms, allowing the methodology to reflect actual production conditions and creating a common basis for measurement and improvement.
RESULTS	• More than 30 companies engaged across the two districts, covering different value-chain stages and levels of sustainability maturity. • Circularity assessment tools co-developed by researchers, facilitators and participating firms. • Shared priority areas identified and collective improvement pathways activated. • SME capabilities strengthened around circular-economy principles and measurement approaches.
STRATEGIC INSIGHT	District platforms lower the cost of capability building for SMEs while giving brands access to a more consistent and better-equipped supplier ecosystem. The model works because operational knowledge, methodological rigour and institutional continuity are combined within a shared infrastructure.

Source: Project experience of Ergo Srl, part of Tecno Group, and the Sustainability Management Laboratory at Sant’Anna School of Advanced Studies.

Social transparency as an enabler for supply-chain control and product credibility

Key message

Social transparency is becoming part of product control and value.
In fragmented fashion value chains, labour risk often sits beyond direct suppliers and can be amplified by the brand’s own commercial decisions.

Target costing, late design changes, compressed lead times and unstable order volumes can push pressure into subcontracted or informal production layers, weakening the conditions behind claims of quality, provenance and responsible production.

Four capabilities strengthen control across the value chain:

- **Continuous multi-tier due diligence**, combining supplier mapping, risk monitoring, worker voice and remediation across the production network.
- **Responsible sourcing architecture**, so that pricing, lead times, order volumes and supplier capacity remain consistent with labour standards.
- **Nearshoring and craftsmanship** control to strengthen oversight of the production capabilities behind quality, origin and “Made in” claims.
- **Inclusive sourcing models**, using formalisation, skills development and measurable worker outcomes to address vulnerability before risk emerges.

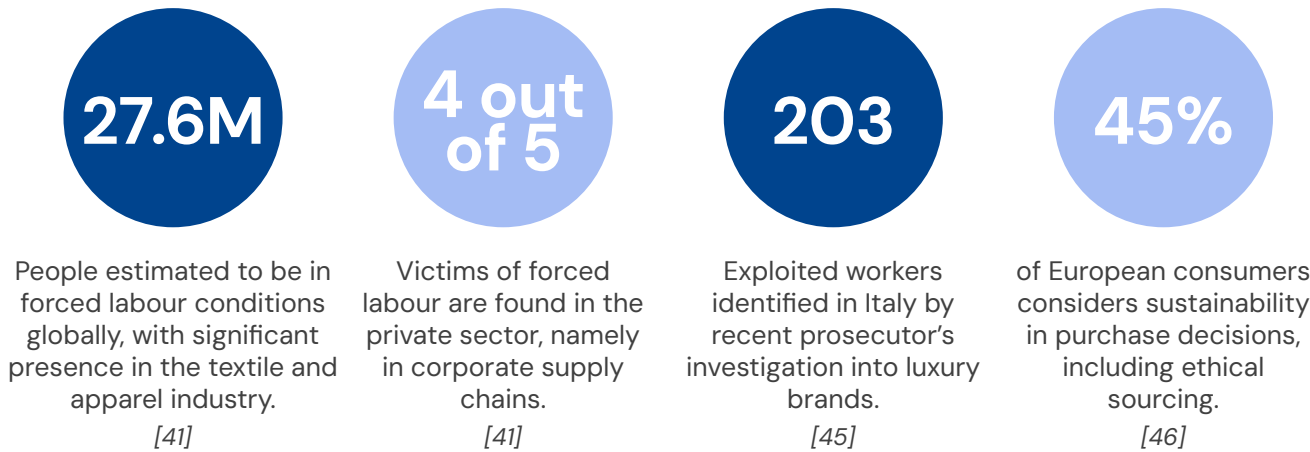
The business value extends beyond compliance. Stronger social control reduces exposure to hidden subcontracting, delays, rework, legal disputes and market-access restrictions, while reinforcing the evidence behind provenance, craftsmanship and responsible-production claims. The strategic shift is from checking supplier compliance after the fact to governing the commercial and production conditions that shape labour risk in the first place.

3.1. Social transparency as a dimension of product value

Globally, an estimated 27.6 million people are in forced labour, and four out of five victims are found in the private economy, including corporate supply chains ^{41, 45}. Fashion is structurally exposed because production is fragmented across multiple tiers, geographies and subcontracted workshops. Labour risk frequently sits beyond direct suppliers, where informal work, excessive overtime, weak worker voice and migrant-worker vulnerability are harder to detect and influence ^{42, 43}.

These risks are not confined to weak regulatory environments. Recent investigations into luxury supply chains show that they can persist even in countries with stringent labour protections ⁴⁵.

TABLE 12 – Labour-risk exposure is increasingly material to product credibility



The strategic gap is between brand promise and production control. Brands communicate quality, responsibility and authenticity, while parts of their supply chains may still operate under intense cost, speed and flexibility pressures.

Target costing, late design changes, compressed lead times and unstable order volumes can transfer pressure down the chain. When supplier capacity and commercial requirements become misaligned, that pressure may reappear as unauthorised subcontracting, informal labour, wage violations, excessive overtime or reduced quality control ⁴³.



TABLE 13 – Five labour-governance controls that move oversight beyond supplier codes

01	FAIR WAGE ACROSS THE SUPPLY CHAIN Ensure workers receive at least legal minimum wages while supporting progress towards living-wage standards. Low prices, late changes and short lead times can create direct pressure on supplier labour costs ⁴⁷ .
02	WORKING HOURS, HEALTH AND SAFETY Address excessive overtime, unsafe working environments and inadequate protection systems, particularly in small workshops and subcontracted units where controls may be weaker ⁴² .
03	FREEDOM OF ASSOCIATION AND WORKER FORCE Create mechanisms through which workers can organise, raise concerns and negotiate working conditions. Limited worker voice can increase vulnerability and reduce the early visibility of labour risks ⁴¹ .
04	TRACEABILITY OF SUBCONTRACTED LABOUR AND MULTI-TIER DUE DILIGENCE Map the actors involved in production, including subcontractors, and extend risk monitoring beyond direct suppliers. Multi-tier visibility is a core element of effective due diligence ^{4, 43} .
05	PREVENTION OF FORCED LABOUR Address coercion, illegal recruitment and document retention, particularly among migrant and informal workers, as labour conditions increasingly determine EU market access ^{4, 48} .

Gaps in production oversight can quickly become business costs. Defects, delays, rework, inventory exposure, waste, legal disputes and market-access risk can all emerge from poorly governed production networks. Given the gap between stated sustainability preferences and actual purchase behaviour, brands cannot assume that the additional costs of responsible production can simply be passed on to consumers ^{8, 6}. Social accountability therefore needs to be embedded in sourcing, planning and supplier governance to protect both margin and credibility.

Supplier codes and periodic audits remain necessary, but cannot provide continuous visibility over the subcontracted and informal production layers where brand oversight is weakest ^{42, 43}.

Regulation reinforces the same shift: the EU Corporate Sustainability Due Diligence Directive (CSDDD) requires companies in scope to address human-rights impacts across the value chain, while the EU Forced Labour Regulation links forced-labour exposure directly to market access. The management challenge is therefore moving from supplier compliance to greater control over the conditions in which production is actually delivered.

3.2. Beyond Tier 1, episodic audits give way to continuous due diligence

The highest labour risks in fashion can sit below the direct supplier. A Tier 1 factory may be formally approved while part of the order is produced through subcontracted workshops or capacity-overflow mechanisms that remain outside the brand’s immediate visibility.

Capacity peaks, late changes and cost pressure can increase this exposure, particularly where work moves towards informal or semi-formal production units and vulnerable or migrant workers ^{43, 48}.

The response is continuous supplier stewardship, with audits remaining one component of a broader control model. Supplier mapping, subcontractor

approval, worker voice mechanisms, risk indicators and remediation processes need to connect with production planning, supplier data and corrective action tracking. Social evidence should remain linked to the suppliers, sites and production processes it describes, creating a consistent basis for risk assessment and sourcing decisions while preserving the specific verification required for labour conditions. The objective is to identify risk earlier and verify whether corrective actions have been implemented ^{43, 49}.

FOCUS ON | Why Tier 1 approval does not equal control

Cases investigated across the fashion sector show a recurring pattern: brand oversight and factory-floor conditions can diverge as production passes through multiple subcontracting layers. A qualified first-tier supplier may outsource production further, potentially more than once, until parts of the order reach workshops the brand has not directly assessed.

In some investigated structures, cost compression has been associated with production models relying on tax, social-security or labour practices that allow non-compliant operators to undercut firms operating within the rules ⁵⁰.

Courts are extending the expected scope of corporate oversight beyond Tier 1 suppliers, holding fashion companies accountable for failures to prevent labour abuses across subcontracting chains even when they are neither directly involved in, nor criminally investigated for, the underlying offences ⁵¹.

The CSDDD reinforces this shift by extending corporate due diligence beyond direct contractual relationships and across the broader chain of activities. Yet it also exposes a fundamental enforcement gap: companies are expected to identify and address misconduct among indirect business partners without possessing the investigative authority to conduct unannounced inspections, compel access to information or otherwise exercise police-like powers ⁵²

Responses to this exposure increasingly combine:

- supplier registries incorporating financial and reputational due diligence and risk tiering;
- standing governance bodies to determine corrective action where risks are identified;
- dedicated supply-chain risk responsibilities alongside sourcing functions;
- recurring audits supported by digital traceability and supplier-monitoring systems.

The shift is from approving suppliers at entry to maintaining visibility over how production is actually delivered.⁵³



Continuous due diligence strengthens supplier accountability and reduces exposure to hidden subcontracting. It gives companies a clearer basis for managing labour risk across tiers, improves the quality of supplier engagement and supports the evidence needed to substantiate responsible production practices.

Bridging this gap requires a more collaborative model of oversight, based on shared information, coordinated monitoring and joint improvement priorities, reducing duplicated requirements for SMEs while giving brands greater visibility over production conditions and, where needed, a basis for co-investment in supplier capabilities.

CASE STUDY: Extending supplier stewardship beyond Tier 1 <i>Stella McCartney</i>	
BUSINESS CHALLENGE	Stella McCartney has built its positioning around responsible fashion, but supplier codes and periodic audits alone cannot provide sufficient visibility across complex, multi-tier value chains. The management challenge is to extend supplier engagement into the areas where direct oversight is weakest.
APPROACH	Suppliers are treated as partners in risk prevention and performance improvement. The approach combines standards on working conditions with traceability, capacity-building and corrective-action follow-up rather than relying exclusively on periodic compliance checks. The model treats suppliers as partners in risk prevention and performance improvement. Capacity-building, corrective action follow-up and closer engagement with strategic suppliers help move social due diligence into day-to-day supply-chain governance, where purchasing, sourcing and sustainability decisions can be connected.
RESULTS	• Supplier engagement and monitoring extended beyond direct first-tier relationships. • Closer integration between supplier stewardship, traceability and wider sustainability management. • Strong traceability across selected priority raw-material supply chains, including certified and lower-impact viscose sourcing.
STRATEGIC INSIGHT	Due diligence becomes more effective when supplier monitoring evolves into continuous stewardship. Multi-tier visibility, longer-term relationships and corrective-action follow-up reduce the risk that production moves into layers the brand cannot see.

Source: Ghebreab & Heale, 2023

3.3. Responsible sourcing starts with commercial decisions

Responsible sourcing is a control point in the fashion operating model because labour standards depend not only on supplier commitments, but also on whether the brand’s purchasing and planning practices allow those commitments to hold during production. Labour risk often reflects a misalignment between commercial decisions, supplier capacity and production reality.

Aggressive target costing, late design changes, unstable order volumes, compressed lead times and weak capacity planning can push suppliers towards excessive overtime, unauthorised subcontracting, informal labour or reduced quality control to recover flexibility and margin ⁴³.

When these pressures are treated purely as supplier-side compliance issues, they tend to surface late as delays, defects, rework or reputational incidents. A stronger sourcing model converts them into management decisions before production begins.

Procurement, merchandising, planning, sustainability and supplier management therefore need shared information and common rules. Supplier scorecards, capacity checks, risk-based order allocation, corrective-action tracking and preferred-supplier development provide practical mechanisms for anticipating pressure points rather than responding only after disruption occurs.

The business value lies in aligning pricing, planning and supplier engagement with production reality. Better sourcing governance improves capacity planning, strengthens corrective action and supports deeper collaboration with strategic suppliers. Responsible sourcing becomes an operating discipline when

supply-chain commitments are reflected in the commercial decisions that determine how production is executed.



CASE STUDY: Connecting supplier governance, data and accountability Gucci	
BUSINESS CHALLENGE	Responsible sourcing can remain a policy commitment if supplier information, sustainability data, internal accountability and external communication are managed separately. For a global luxury brand, the challenge is therefore organisational: creating a governance architecture capable of connecting sustainability commitments with business processes and stakeholder accountability.
APPROACH	Gucci Equilibrium was developed as an integrated sustainability platform bringing together environmental performance, social initiatives, supply-chain governance and public accountability. Its relevance to responsible sourcing lies in the way supplier-related information sits within a broader governance and disclosure system, creating stronger links between sustainability, procurement, product and communication functions.
RESULTS	• Sustainability information brought together across environmental, social and supply-chain topics through the Equilibrium framework. • Greater public transparency through disclosure of sustainability metrics, including Environmental Profit & Loss accounting.
STRATEGIC INSIGHT	Responsible sourcing becomes operational when supplier commitments are connected to data, accountability and cross-functional ownership. Gucci Equilibrium illustrates how an integrated governance architecture can link supplier information with wider sustainability management and external accountability.

Source: Ghebreab & Heale, 2023

3.4. Selective proximity can strengthen craftsmanship, control and identity

Greater proximity to production can create value where it improves control over capabilities that are critical to product quality, provenance and responsible production. It is not an alternative to global sourcing as a whole, nor does shorter distance automatically translate into stronger social performance.

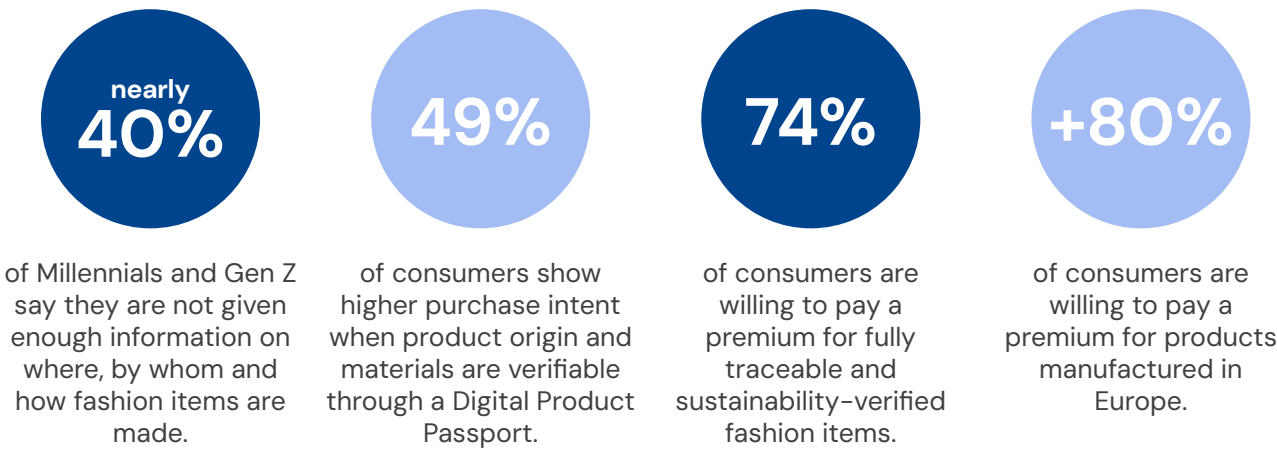
The case is strongest where specific manufacturing capabilities, technical know-how or production conditions are integral to the product proposition and difficult to govern effectively at distance. This is particularly relevant in high end and luxury segments, where craftsmanship, origin and “Made in” positioning can be central to differentiation.

«In luxury, sustainability protects the very assets on which long term value creation depends, from craftsmanship and local ecosystems to cultural heritage»

Sara Vascotto
Global ESG & Sustainability Lead,
Dolce&Gabbana

The management question is therefore not whether to nearshore production, but which capabilities justify greater proximity because closer oversight materially improves quality, resilience, traceability or the credibility of product claims.

TABLE 13 – Verifiable origin can strengthen purchase intent and premium positioning



Source: [60].

More controlled production models can bring operational resilience and product identity closer together. Greater proximity can strengthen visibility over production, protect technical know-how and provide more robust evidence behind “Made in”, craftsmanship and authenticity narratives.

Selective nearshoring becomes a value chain lever when greater proximity materially improves control over capabilities that underpin product value.

CASE STUDY: Keeping critical craftsmanship capabilities close to the brand	
Mulberry · The Rookery	
BUSINESS CHALLENGE	Global sourcing provides flexibility and cost efficiency, but can increase the distance between the brand and the manufacturing capabilities behind quality, craftsmanship and origin. For Mulberry, the strategic question was not whether to localise all production, but which capabilities warranted closer control because they directly support product quality and brand identity.
APPROACH	Mulberry established The Rookery, a UK-based manufacturing hub centred on skilled craftsmanship and direct production oversight. By bringing selected production capabilities closer to the brand, the company strengthened its ability to manage quality, monitor working conditions and protect technical know-how. The model combines heritage production with operational control. Localised manufacturing supports stronger visibility over how products are made, enables workforce upskilling and reinforces the credibility of origin and craftsmanship narratives.
RESULTS	- Increased local employment and the creation of skilled manufacturing jobs in the UK, supporting inclusive economic growth. - Improved traceability, operational transparency, and direct oversight of production processes, reducing compliance and reputational risks. - Shorter supply-chain flows for locally manufactured product and stronger origin-based brand identity.
STRATEGIC INSIGHT	Nearshoring creates value where proximity protects the capabilities that make a product premium. Direct control over craftsmanship, quality and technical knowledge can strengthen both operational resilience and the credibility of origin-based positioning.

Source: Ghebreab & Heale, 2023

3.5. Inclusive sourcing embeds social value before risk emerges

nclusive sourcing addresses labour-market conditions that conventional supply-chain controls cannot fully correct once production is underway. Informality, gender inequality, weak bargaining power and limited economic alternatives can be structural features of the contexts in which fashion sourcing takes place.

The distinction is one of timing and design. Due diligence and responsible sourcing seek to improve existing supplier relationships through monitoring, escalation and corrective action. Inclusive models establish the social baseline when the production relationship is designed: employment conditions, skills development, worker outcomes and oversight are built in from the beginning rather than added only after risk emerges.

In practice, this means developing sourcing partnerships around formalisation, transparency and capability development. Brands can work with suppliers, cooperatives or social enterprises to strengthen employment conditions, develop skills, monitor

worker outcomes and connect social performance with product traceability.

For SMEs, inclusive sourcing can translate growing social requirements into stronger capabilities, more stable buyer relationships and better access to responsible markets. It can also reinforce cross-border value-chain partnerships, linking international fashion groups with specialised supplier ecosystems and industrial districts able to provide credible evidence on production conditions and social performance. For premium and luxury brands, this can strengthen responsible-sourcing credibility and turns the way a product is made into an additional source of value and differentiation.



CASE STUDY: Building social value into the sourcing model	
<i>Made for a Woman</i>	
BUSINESS CHALLENGE	In labour markets affected by informality, gender inequality and weak bargaining power, traditional compliance systems may identify violations after they occur without changing the structural conditions that create vulnerability. The issue is not only how to prevent labour risk, but how to design a sourcing model where formal employment, fair working conditions, skills development and women’s economic empowerment become part of the product’s value proposition.
APPROACH	Made for a Woman developed an inclusive production model in Madagascar centred on women’s employment, fair working conditions and skills development. Social objectives are incorporated directly into production through formalised work relationships, closer oversight and a connection between worker outcomes and product traceability.
RESULTS	• 100% of employees receive fair wages above local industry standards, contributing to poverty reduction and economic inclusion. • Measurable improvements in workers’ living conditions, financial independence, access to healthcare and social empowerment. • Strong traceability and direct oversight of production activities, ensuring accountability and transparency across operations.
STRATEGIC INSIGHT	Inclusive sourcing moves social responsibility upstream by designing stronger labour conditions into the production model itself. When formalisation, skills development and worker protection are embedded in the sourcing relationship, social performance can support both risk reduction and credible product differentiation.

Source: Ghebreab & Heale, 2023

Chapter 4

Where action needs to concentrate across the fashion system

The fashion system needs to turn sustainability into better product decisions and stronger industrial capabilities. This requires firms to integrate environmental and social objectives into business planning and commit resources to the changes that follow. Shared infrastructure and coordinated investment can address constraints that individual companies cannot resolve alone. Action should concentrate where improvements can strengthen product economics, production conditions and customer

relevance, with responsibilities and benefits defined across the participating organisations.

The new value equation must be delivered through products that earn customer preference, production conditions that support people and reduce environmental impacts, and industrial capabilities that sustain profitable growth.

TABLE 14 – Five action areas for the fashion system

Action area	Priority actions	Business & industrial value
1 Move sustainability upstream in product and sourcing decisions	- Integrate environmental evidence before materials and specifications are fixed - Assess supplier capacity alongside prices, lead times and volumes - Evaluate quality, durability, resource use and lifecycle costs together	Better product economics, fewer avoidable costs and earlier prevention of production pressures
2 Build shared governance and digital infrastructure to extend value-chain control	- Connect environmental, social and production information across functions and supplier tiers - Define ownership for data quality, validation and action - Use SustainTech to link data, technologies and scientific methodologies with business decisions	More consistent evidence, lower duplication and stronger control beyond direct suppliers

3 Turn verified evidence into credible product value	- Identify the product attributes that matter to the customer - Substantiate quality, provenance, craftsmanship, durability and responsible production - Align communication with verified evidence and market positioning	More credible differentiation, stronger trust and lower exposure to unsupported claims
4 Direct joint investment towards better products and stronger production capabilities	- Prioritise materials, processes, skills and infrastructure with measurable impact - Assess environmental and social outcomes together with product economics - Clarify who funds the improvement and who captures the benefit	Better allocation of transition investment and stronger product and supplier capabilities
5 Scale execution through industrial ecosystems and cross-border cooperation	- Use partnerships, shared platforms and district initiatives where capabilities can be developed more effectively together - Reduce fragmented requirements across interconnected supply chains - Use cross border and institutional cooperation to support skills, expertise and continuity	Wider access to capabilities, lower barriers for smaller suppliers and more durable execution across the industrial ecosystem



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Glossary of key terms

Circularity: the capacity of a product or system to retain value through use extension, repair, resale, reuse or recycling, rather than through a single linear cycle from production to disposal. In the paper, circularity is treated as a management discipline connected to product design, lifecycle data and end-of-life responsibility.

Claims governance: the internal procedures, roles and approval steps (evidence substantiation, cross-functional review, formal sign-off, ongoing monitoring) that companies use to ensure environmental and social claims are accurate, substantiated and kept consistent with product data over time.

Corporate Sustainability Due Diligence Directive (CSDDD): EU directive (2024/1760) requiring companies within scope to identify, prevent and address human-rights and environmental impacts across their value chain, including business relationships beyond direct (Tier 1) suppliers.

Corporate Sustainability Reporting Directive (CSRD): EU directive (2022/2464) expanding mandatory sustainability reporting obligations, requiring companies within scope to disclose value-chain information alongside financial reporting.

Digital Product Passport (DPP): a structured, interoperable digital record of product-level information (materials, origin, environmental performance, circularity attributes) that travels with the product, introduced under the Ecodesign for Sustainable Products Regulation.

District collaboration: a model in which companies operating within the same territorial production district (e.g. a footwear or textile district) share measurement tools, traceability platforms, training and technical support, allowing sustainability capabilities to scale across a fragmented base of SMEs rather than being built firm by firm.

Double materiality: an assessment approach considering both how sustainability issues affect a company financially and how the company’s activities affect the environment and society. Referenced in the paper as a tool for translating regulatory, investor and consumer expectations into operational priorities.

Due diligence (continuous / multi-tier): supplier mapping, risk monitoring and remediation extended beyond direct (Tier 1) suppliers, replacing periodic, episodic audits with ongoing oversight of labour and environmental conditions across the value chain.

Eco-design: the integration of environmental criteria (material choice, recyclability, durability) into product development decisions, applied early enough to influence a product’s environmental profile before it is locked in by design and sourcing choices.

Ecodesign for Sustainable Products Regulation (ESPR): EU regulation (2024/1781) setting eco-design requirements and introducing the Digital Product Passport for products placed on the EU market, including selected textile categories.

Empowering Consumers for the Green Transition Directive (ECGT): EU directive (2024/825) restricting generic and unsubstantiated environmental claims and misleading sustainability labels in business-to-consumer communication.

ESG (Environmental, Social and Governance): shorthand used in the paper for the set of environmental, social and governance targets and metrics that companies are increasingly expected to embed in executive accountability and cross-functional decision-making.

EU Deforestation-free Products Regulation (EUDR): EU regulation (2023/1115) requiring due diligence to ensure that relevant raw materials and products placed on the EU market are not linked to deforestation.

Extended Producer Responsibility (EPR), textile: a regulatory scheme, extended to textiles under EU rules, making producers financially responsible for the collection, sorting, reuse and recycling of the products they place on the market.

Forced Labour Regulation (FLR): EU regulation (2024/3015) prohibiting the placing on the EU market of products made using forced labour.

Green claims / greenwashing: green claims are statements about a product’s or company’s environmental characteristics or performance. Greenwashing refers to claims that are vague, unsubstantiated or misleading relative to the underlying evidence — a growing area of regulatory and reputational exposure addressed in Chapter 2.

Industrial ecosystem / orchestrator platform: a structured, platform-based model in which a brand retains strategic control while operational execution (supplier aggregation, compliance management) is handled by integrated industrial partners or platforms, referenced in the paper as an alternative to managing extensive supplier data and regulatory requirements in-house.

Inclusive sourcing: a sourcing approach that builds social conditions (formal employment, fair wages, skills development, worker outcomes) into a supplier relationship from the outset, rather than addressing labour risk only after it emerges through monitoring and correction.

Life Cycle Assessment (LCA): a structured methodology for quantifying the environmental impacts of a product across its life cycle (raw materials, production, use, end-of-life). Used in the paper as the basis for identifying where impact is concentrated and where intervention delivers the highest return.

Market polarisation: the paper’s term for the way sustainability creates value differently across fashion market segments, from a differentiation lever at the top of the market to a driver of efficiency and licence-to-operate at the mass-market end.

Nearshoring: relocating or retaining selected production capabilities closer to the brand, geographically or organisationally, to strengthen oversight of quality, craftsmanship and provenance rather than relying entirely on distant, outsourced production.

Provenance: verifiable information on where and how a product’s materials and manufacturing originated, increasingly used to substantiate quality, craftsmanship and “Made in” claims.

Responsible sourcing: purchasing and planning practices (pricing, lead times, order volumes, capacity planning) structured so that commercial decisions do not undermine the labour standards suppliers are expected to uphold.

Second-hand / resale market and value retention: the market for previously owned fashion products, referenced in the paper as a growing test of whether product value — durability, authenticity, verified information — holds beyond the first sale.

SME (Small and Medium-sized Enterprise): companies below defined size thresholds that make up the large majority of the European fashion supply base. The paper treats SMEs’ limited capacity to independently meet growing data, traceability and compliance requirements as a central reason for district-level and shared-infrastructure models.

SustainTech: the operating model for corporate management that translates the integration of data, technologies and scientific methodologies, enabling business decisions oriented toward generating measurable, profitable and lasting value for the company, people and the planet.

Supplier stewardship: an ongoing model of supplier engagement — combining monitoring, capacity-building and corrective-action follow-up — that goes beyond periodic compliance audits to build continuous visibility over supplier performance.

Territorial credential: a reputational and evidentiary asset that a production district can build when its member companies share standards, data and auditable performance, so that the district’s reputation becomes part of the value associated with products made within it.

Tier 1 / Tier 2 / Tier 3 / Tier 4 (supply-chain tiers): classification of supply-chain actors by distance from the brand: Tier 1 (direct, contracted manufacturers), Tier 2-3 (upstream processing such as spinning, dyeing, finishing), Tier 4 (raw-material origin). Brand visibility and control typically decrease at each tier further upstream.

Total value-chain cost: a cost concept, used in Chapter 1, that includes hidden costs — quality failures, delays, compliance issues, remediation — surfacing beyond the initial purchase price. The paper uses it to reframe sourcing decisions beyond unit cost alone.

Traceability: the ability to track materials, suppliers and processes across supply-chain tiers, connecting product-level data to sourcing, compliance and communication decisions.

Value-chain de-risking: the practice of extending visibility and control beyond direct suppliers to identify and manage the operational and reputational risks that most often exist deeper in the value chain, where primary data is scarce.

Verifiable product value: the paper’s central concept: product value supported by evidence that can withstand commercial, regulatory and reputational scrutiny (traceable materials, verified production conditions, substantiated environmental claims), rather than by brand promise alone.

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Acknowledgements

The authors wish to thank the companies, industry associations, institutions and academic partners who have supported this project from its early stages, contributing to the closed-door executive roundtable held in Florence, the organisation of subsequent events and the broader development of the initiative. We are grateful to the executives, experts and industry representatives who enriched the research by sharing their perspectives and recommendations, as well as those who contributed directly to the paper through interviews, quotations and editorial input.

We would like to acknowledge in particular **Andrea Gemma** and **Emanuele Rumi Rios** (GPD - Studio Legale e Tributario) for his contribution to the legal and regulatory dimension of the study, and **Francesca Rulli**, together with her team at Ympact, for their work on the digital infrastructure needed to support collaborative, sustainable and due-diligence-driven fashion value chains. Within Tecno Group's Strategic Innovation Department, our thanks go to **Alessandro Tenga** for his continuous support to the research and development of the project, and to **Rocco Travisano** and **Lorenzo Petraroli** of the Marketing & Communication Department for their support in shaping the communication and organisation of the initiative.

Finally, we extend our appreciation to **everyone who took part in the discussions and working sessions** that accompanied this project. Their willingness to share experience, challenge assumptions and bring different perspectives has been instrumental in shaping the thinking reflected in this study.

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valore, *insieme.*