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Title:

STRATEGIES FOR A SUSTAINABLE AND CIRCULAR TEXTILE INDUSTRY: A COMPARATIVE LEGAL APPROACH

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Introduction

"*Fashion is not something that exists in dresses only. Fashion is in the sky, in the street. Fashion has to do with ideas, the way we live, what is happening*" once said Mademoiselle Chanel.

Fashion, at least for those who are not insiders, is often perceived light years away from everyday life and, therefore, confined to the glossy world of catwalks, red-carpet and social media. A frenetic and glittering microcosm that comes to life in those, few, but hectic fashion weeks and then vanishes until the following season.

This is an entirely erroneous perception though.

The industry, a mirror of modern social and costume phenomena, is called upon, like other major industrial players, to face the great challenges of modernity.

After all, fashion has to do with what is happening.

But what precisely is happening?

In a world torn apart by conflict and consumed by convulsive economic dynamics, fashion is called to rethink itself. Unbridled consumerism, fuelled by fast-fashion and microtrends that rise and fall on social media in the space of a few weeks, has led to a spike in overproduction that is no longer sustainable. Increasingly pressing concerns related to the climate emergency have prompted lawmakers to turn the spotlight on fashion and initiate a legislative season geared toward regulating one of its core sectors, the textile industry.

Correcting these structures, now endemic to the production system, require more systemic solutions in line with the international community's ambition to make economic growth sustainable, green and resource efficient.

Businesses, consumers, and public authorities globally are already working to boost sustainability and circularity in this sector, but the transition is slow, and the sector's negative environmental and climate footprint is still considerable.

This explains the effort at the national and supranational levels to regularize the production, consumption, and subsequent disposal of textile products.

This contribution aims precisely at investigating the various initiatives undertaken by national and EU legislators, and then turning the gaze eastward, to Asian giants China and India, being aware that a true step forward down the road of sustainability, lies in the hands of Asian legislators.

Chapter I

Tailoring the European legal framework

SUMMARY: I. EU Strategy for a Sustainable and Circular Textile: a fresh start; II. "Greening" the market through design: proposal for a Regulation for setting Ecodesign requirements for sustainable products; II.1 The Ecodesign approach; II.2. The Digital Product Passport; III. The revision of the Waste Framework Directive; IV. Textiles Ecosystem Transition Pathway: A successful green and digital transition of the EU textiles ecosystem; V. What about Italy?; V. 1. The Legislative Decree no. 68/2020; V. 2. Drafting a suitable EPR regime.

I. EU Strategy for a Sustainable and Circular Textile: a fresh start

The climate emergency is a fact, we all know that. No production sector seems to be immune, and the world of fashion is no exception.

The sustainability decade is now in full swing within the luxury sector. Generation Z is transitioning into a group of adults who will support brands having a positive environmental impact, while disconnecting from those that don't. The same trend is also spreading among older consumers. Additionally, the global disruptions caused by the Covid-19 pandemic are further intensifying the demand for more sustainable practices in both the corporate and governmental realms.

The principle of sustainable development is by no means recent, however.

At EU level, the Maastricht Treaty of 1992[1] already contained a generic reference to the promotion of an environmentally sustainable growth model. The same principle[2] was later reaffirmed by the Treaty of Amsterdam, in Article 2, which stated that the European community "*shall have as its task, (...), to promote throughout the community a harmonious, balanced and sustainable development of economic activities*[3]". Thus, for the very first time, the principle of sustainable development was acknowledged among the founding values of the European community.

The commitment of the European institutions[4] has never waned and, in recent years, has significantly grown, looking with growing concern at the fashion system.

This apprehension has been tackled by the European Commission into the EU Strategy for Sustainable and Circular Textile[5], which stems from a pragmatic reflection: textiles are present in everyone's daily life.

Statistics show that the textile industry represents one of the sectors that stand out negatively for its environmental footprint. EU textile consumption holds indeed an

[1] A. POSTIGLIONE, *I grandi temi del nostro tempo: l'ambiente nel Trattato di Maastricht*, Diritto e giurisprudenza agraria e dell'ambiente, 2/1998.

[2] S. BAZIADOLY, *The major stages in the construction of European environmental law*, The Environment and the European Public Sphere: Perceptions, Actions, Policies, edited by C. WENKEL, E. BUSSIÈRE, A. GRISONI, AND H. MIARD-DELACROIX, White Horse Press, 2020, pp. 244–62.

[3] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A12002E002

[4] K. KULOVESI, S. OBERTHÜR, H. VAN ASSELT, A. SAVARESI, *The European Climate Law: Strengthening EU Procedural Climate Governance?*, Journal of Environmental Law, Volume 36, Issue 1, 2024, pp. 23–42.

[5] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *EU Strategy for Sustainable and Circular Textiles*, 30 March 2022.

inglorious record, ranking the fourth worst sector for environmental performance[6]. It is also the third highest area of consumption for water and land use, and fifth highest for the use of primary raw materials and greenhouse gas emissions[7].

An action plan for a greener future, therefore, requires cross-sector regulatory effort to change textile production and consumption patterns, while preserving the competitiveness of the EU single market.

These challenges call for more systemic solutions in line with the ambition to make growth sustainable, climate-neutral, energy- and resource-efficient, built around a clean and circular economy[8].

Accordingly, the document has proposed a roadmap of coordinated initiatives aimed – by 2030 – at making textiles placed on the EU market durable, repairable and recyclable, produced mainly with recycled fibres and free of noxious components, minimising their social and environmental impact, whilst prioritising quality and reusability [9].

This roadmap has therefore set off the machine of the European institutions and paved the way for a series of notable regulatory initiatives – there are no less than 16 pieces of legislation of interest for textiles under the way, ranging from sustainable public

[6] The podium sees, in order, food, housing and mobility.

7 AEA, *Textiles and the environment in a circular economy: the role of designing Europe's circular economy*, 2022.

[8] M.A. CAMILLERI, *A Circular Economy Strategy for Sustainable Value Chains: A European Perspective*, in in *Global Challenges to CSR and Sustainable Development* edited by S. VERTIGANS, S.O. IDOWU, CSR, Sustainability, Ethics & Governance, Springer, Cham, 2021. See also K. AXELSSON, J. GONG, C. DUGAST, F. LAMBE, P. MAQUET, T. SULJADA, *Addressing consumption-based emissions within the EU, in Consumption-based emissions: a new frontier for EU climate policy*, Stockholm Environment Institute, 2024, pp. 26–34.

9 Not surprisingly, one of the mantras of the strategy is "*driving fast fashion out of fashion*".

procurement to chemical use and waste shipping rules –, the most important of which we are about to discuss further.

II. "Greening" the market through design: proposal for a Regulation for setting eco-design requirements for sustainable products.

Sustainability is a choice that must accompany the product during its entire life cycle, from design to disposal. To this end, the EU institutions have made a proposal for a regulation on the introduction of Ecodesign requirements[10], as part of a set of sectoral initiatives presented by the Commission covering, inter alia, textiles.

The advantage of an initiative at European level by means of a regulation is to ensure "*a harmonised and well-functioning internal market across all Member States, and therefore a level playing field for economic operators*"[11]. The existing regulatory framework is indeed fragmented and inadequate. Product design does not sufficiently consider the environmental impact during the life cycle of products. Moreover, despite the undeniable

[10] On 5th December 2023, the proposal for the Ecodesign Regulation passed the trilogue phase after the Council and Parliament reached a political agreement on a concerted text, which is, however, still provisional. See M. BUNDGAARD, A. M. MOSGAARD, A. REMMEN, *From energy efficiency towards resource efficiency within the Ecodesign Directive*, Journal of Cleaner Production, Volume 144, 2017, Pages 358-374; A. M. BUNDGAARD, R. D. HUULGAARD, *The role of standards in support of material efficiency requirements under the Ecodesign Directive*, Journal of Cleaner Production, vol. 385, 2023; S. HORN, H. SALO, A. NISSINEN, *Promoting ecodesign implementation: The role and development areas of national public policy*, Environmental Policy and Governance, 2023.

[11] Executive summary of the impact assessment accompanying the document Proposal for a Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, sub. A., pp. 2.

positive impact of the Ecodesign Directive[12], the limitation of its scope to energy-related products has only weakened its overall effects, hence the effort to reduce the environmental footprint of a broader class of products[13].

The proposal is rooted in a series of regulatory precedents which are connected by a single common thread: the sustainability of consumption and production.

Firstly, the European Green Deal, the growth strategy that aspires to turn the European Union into a society with a competitive, resource-efficient economy, and the European Commission's 2020 - then updated in 2021 - industrial strategy for Europe, which aims to make Europe a leader in the climate and digital transition.

Worth a mention the Circular Economy Action Plan, which aims to stimulate the market development of circular and climate-neutral products in the EU and beyond. Indeed, the CEAP shapes a policy framework for such products that includes measures in three synergetic areas: boosting sustainable product design; empowering consumers and public purchasers; and promoting circularity in production chains.

The Ecodesign regulation focuses mostly on the area of sustainable product design, by setting requirements to make products fit for a circular and resource-efficient economy. These requirements should complement and reinforce other key measures defined in the implementation of the CEAP, such as the EU Strategy for Sustainable and Circular Textiles.

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[12] Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products.

[13] Benefits would range from improving product sustainability and optimising access to circularity-related information through the entire production cycle, to encouraging the application of production and business models that promote product value over time. On the same note, M. KOSZEWSKA, *Circular Economy—Challenges for the Textile and Clothing Industry*, Autex Research Journal, vol. 18, no. 4, 2018, pp. 337-347.

In this regard, the focus on the textile sector is evident from the very beginning of the proposed legislative text, and the proposal finds two allies in the eco-design requirements and the digital product passport[14].

II.1. The Ecodesign approach

The Ecodesign[15] approach brings a new premise into the sustainability equation, as the environmental impact of a product must be duly considered from the design stage. By extending the lifespan of products – preserving their value over time and boosting the use of recycled materials – economic development can be decoupled from the exploitation of natural resources[16].

Under Article 1, the proposed regulation shapes its object[17] by establishing ecodesign requirements that products must comply with to be placed on the market or otherwise put

[14] Several top brands have already used this instrument to turn a future legal obligation into an opportunity not only to guarantee product authenticity, but also to access product certificates, certificates of origin and information on craftsmanship and production processes, while guaranteeing the sustainability of raw materials, packaging, and production quality.

[15] M. GEISSDOERFER, M.P.P. PIERONI, D.C.A. PIGOSSO, K. SOUFANI, *Circular business models: A review*, Journal of Cleaner Production, vol. 277, 2020, 123741.

[16] L.L. KJAER, D.C.A. PIGOSSO, M. NIERO, N.M. BECH, T.C. MCALOONE, *Product/Service-Systems for a Circular Economy: The Route to Decoupling Economic Growth from Resource Consumption?,* Journal of Industrial Ecology, vol. 23, no. 1, 2019, pp. 22-35.

[17] Worth a mention the reference to the second-hand market under the actual recital 14(a), according to which "*Second-hand products, in particular products that undergo refurbishment or repair, originating from within the Union are not new products and they can circulate within the internal market without needing to comply with ecodesign requirements",* playing an important role in promoting sustainable

into service to enhance their overall environment performance over their lifecycle. Only a few limited exceptions, listed in Article 1 itself, remain outside the scope of the measure.

In addition, as far as relevant here, textiles and footwear are among the product categories that have been given priority in the adoption of the resulting delegated acts by the Commission.

Defined its purpose, the regulation provides a clear definition of the terms ecodesign and ecodesign requirement[18].

Ecodesign refers to the process of integrating environmental sustainability considerations into product characteristics and processes that take place during the product's value chain. Eco-design requirements are performance or information requirements aimed at making the product itself more environmentally sustainable.

Under Article 5 (1), the ecodesign requirements, the concrete elaboration of which is entrusted to the delegated power of the Commission, concern the durability[19] of the products, their reusability, reparability, the presence of substances of concern, the content of recycled material used in their production, the possibility of recovering materials, the products' carbon and environmental footprints, the water use and water efficiency, the

production and consumption, including in the development of new circular business models, and prolonging the lifespan of a product by avoiding it becoming waste.

[18] H. ENTSALO, H. KALIMO, P. KAUTTO, T. TURUNEN, *Analysing regulatory instruments in sustainability transitions: A combined 'intervention points' and 'roles of law' approach to the European Union's Ecodesign framework*, in Sustainable Production and Consumption, Volume 42, 2023, pp. 125 – 137.

[19] Under recital 5a and Art. 2, paragraph 20a, ecodesign requirements should also tackle those practices that lead to premature obsolescence, i.e. a product design feature or a subsequent intervention that causes the product to become non-functional or less efficient than as a result of normal wear and tear. Such practices have an overall negative impact on the environment in terms of increased waste, energy, and material consumption, which ecodesign requirements can reduce while contributing to sustainable consumption.

expected generation of waste material. Requirements shall be set for a specific product group or, where two or more products show similarities, may be set horizontally for those[20]. The ecodesign requirements should not have any negative effect on the functionality, safety, and affordability of products, and not result in competitive asymmetry detrimental to small economic actors, such as SMEs.

Such requirements, as anticipated, include performance requirements and information requirements, governed respectively by Articles 6 and 7.

Performance requirements refer to the aspects listed in Art. 5 (1) and consist of quantitative or non-quantitative indexes that enable the product to achieve a certain level of performance, or requirements relating to functional performance.

Information requirements refer to the obligation for a product to be accompanied by the information referred to in Article 5(1). Precisely, information requirements always include requirements on the product passport and substances of concern, as well as detailing other types of information that may be provided, e.g., information on a product's performance or information for consumers on how to use, maintain, repair, and dispose of the product at end-of-life to minimise its environmental impact whilst optimising its durability. From the perspective of its application to textiles, Article 5 (5) states that information requirements shall enable the tracking of substances of concern throughout the life cycle of products by including, among others, the name of such substances, the concentration within the product and instructions for safe use.

II.2. The Digital Product Passport

[20] When establishing these parameters, the Commission shall consider the European Union's environmental, climate and energy commitments and policies, as well as the regulatory framework of the Member States and EU and international standards and agreements.

The Ecodesign regulation shall also establish a digital product passport[21] (DPP), *i.e.*, a set of product-specific data that includes the information specified in the relevant delegated acts[22], and accessible electronically by a data carrier, for instance QR codes or barcodes, which shall be physically present on the item, its packaging or on the documentation accompanying the product.

The need for a DPP is a direct consequence[23] of the information requirements set by Article 7 and, within the proposal, some of the general and technical requirements for the creation, access and sharing of digital product passports have already been outlined.

Each product shall be associated with a specific identifier – the so-called, Unique Product Identifier – through the scanning of which it will be possible to receive indications on how to repair, recycle, or dispose of most consumer goods.

Both the data carrier and the unique product identifier shall comply with the standard ISO-IEC 15459:2015.

By 2 years from entering into force of the ESPR Regulation, the Commission shall also be responsible for setting up and maintaining a register in which the information contained in product passports is stored, in compliance with the applicable data protection rules. The register shall include at least a list of data carriers and unique identifiers and shall have to allow for the verification of its authenticity, the relevance of the information for improving the efficiency and effectiveness of market surveillance checks and customs authorities, and the need to avoid excessive administrative burdens on economic operators.

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[21] A.C. MITTWOCH, *The Digital Product Passport of the Ecodesign Regulation - Passport to a Successful Twin Transformation in Product Law?*, Business Law Review, Volume 45, Issue 3, 2024.

[22] The data specifications for DPP shall be set out for each single product category based on a dialogue with relevant industry stakeholders.

[23] As for the scope of application, *see* C. BACKES, M. BOEVE, *Envisioning the Future of the Circular Economy: A Legal Perspective*, in Environmental Policy and Law, 52(3-4), 2022, pp. 253-263.

The requisites of such a passport shall be adopted by means of delegated acts and specify, per product groups, the information to be included, the types and configuration of data carriers to be used, how the passport can be accessed prior to sale, as well as the entities that shall have access to the information and those authorised to modify it. These parameters shall ensure that actors in the value chain – consumers, economic operators and competent national authorities – have access to relevant information, meeting the need for verifiability and traceability.

Furthermore, the Commission shall set up and manage a publicly accessible web portal[24] allowing stakeholders to search and compare information included in product passports. The digital platform shall be shaped to guarantee that stakeholders can seek and compare for the information in line with their respective access rights pursuant to the delegated act pursuant Article 4[25].

Undoubtedly, this tool will add value[26] to the supply side of the economic actors involved and enable a tighter connection with consumers – which is crucial within the fashion industry, especially in the high-end segment.

Thus, it is expected that the DPP, as an example of digital innovation and a tool to implement circular models and sustainable products, will introduce a higher degree of transparency[27], especially in those sectors with the highest counterfeiting rate or whose production requires numerous steps, to certify quality and origin.

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[24] L. ALVES, M. SÁ, E.F. CRUZ, T. ALVES, M. ALVES, J. OLIVEIRA, M. SANTOS, et al., *A Traceability Platform for Monitoring Environmental and Social Sustainability in the Textile and Clothing Value Chain: Towards a Digital Passport for Textiles and Clothing*, in Sustainability, Vol. 16 No. 1, 2023, pp. 82.

[25] As stated under Art. 12a of the concerted text issued in December 2023.

[26] A.C. MITTWOCH, *The Digital Product Passport of the Ecodesign Regulation - Passport to a Successful Twin Transformation in Product Law?*, Business Law Review, Volume 45, Issue 3, 2024, pp. 62 – 66.

[27] J. RIEMENS, A. LEMIEUX, M. LASSAGNE, S. LAMOURI, *Apprehending traceability implementation in support of sustainable value chains: A novel analysis framework for the fashion industry*, Journal of

III. The revision of the Waste Framework Directive

The textile sector, together with the food industry, is at the core of the proposed amendment of the Waste Framework Directive[28].

The proposed legislation aims to reduce the climatic and environmental impact of textiles, whilst enhancing the quality of the environment and public health associated with textile waste management, in line with the waste hierarchy[29].

The preventive approach[30] of the WFD and the undoubted efforts at national level have not been sufficient to prevent the growth of the phenomenon. Indeed, overall textile waste generation seems likely to increase and only a partial decoupling of waste generation from economic growth has been observed. This harmful trend is exacerbated by the production dynamics and pricing strategies promoted by the fast fashion and ultra-fast fashion giants.

Industry statistics, moreover, confirm the rise of fast and ultra-fast fashion brands which, thanks to bargain prices and the purchasing power crisis, are producing more and more by recurring to environmentally unsustainable production practices.

Cleaner Production, Vol. 414, S. 2023, pp. 137501. *See* M PISA, D. MCCURDY, *Digital Supply Chains and Traceability. In Improving Global Health Supply Chains through Traceability*, in Center for Global Development, 2019 pp. 7–9.

[28] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

[29] The cornerstone of EU waste management is the five-step "*waste hierarchy*", set out in the Waste Framework Directive, which establishes a priority order for the management and disposal of waste.

[30] J.P. JUANGA-LABAYEN, I.V. LABAYEN, Q. YUAN, *A Review on Textile Recycling Practices and Challenges*, in Textiles, 2022, pp. 174-188. *Q.v.* J. MALINAUSKAITE, H. JOUHARA, N. SPENCER, *Waste Prevention and Technologies in the Context of the EU Waste Framework Directive: Lost in Translation?*, in European Energy and Environmental Law Review, 2017.

Overproduction and overconsumption of products of such low quality, as to be almost disposable, have fuelled the production of textile waste[31] which, while directly affecting the environmental balance of countries outside the European Union, contribute to aggravating the overall symptoms of the climate emergency.

The picture is far from being reassuring.

The EU legislator, therefore, finds potential allies in the prevention, reuse, and recycling of textile products to reduce the sector's environmental footprint.

The proposed amendment introduces[32] extended producer responsibility and other measures to support the necessary financing and harmonisation of information and approaches related to collection, sorting, reuse, preparation for reuse and recycling infrastructures that will be crucial once the separate collection obligation comes into force.

Member States shall have to ensure that producers are responsible for the textile products placed on the market and to clarify the roles and responsibilities of the actors involved in the implementation, monitoring, and verification of the extended responsibility scheme.

Producers, on their side, shall have to cover the costs for: the collection of used products for reuse and recycling; the transport of the collected quantities for subsequent sorting for reuse, preparation for reuse and recycling operations; sorting and preparation for recycling; collection and transport and treatment of the waste produced. Moreover, they shall also bear the costs of carrying out surveys on the composition of mixed municipal

[31] European Commission, Joint Research Centre, *Technical and scientific evaluation of management options for used and waste textiles*, 2023.

[32] P. K. MALLICK, K. B. SALLING, D. C.A. PIGOSSO, T. C. MCALOONE, *Designing and operationalising extended producer responsibility under the EU Green Deal*, in Environmental Challenges, Volume 16, 2024. See also O. JOHANSSON, *The End-of-Waste for the Transition to Circular Economy: A Legal Review of the European Union Waste Framework Directive*, Environmental Policy and Law, 53, 2023, pp. 167 – 179.

waste and the dissemination of information on sustainable consumption, waste prevention, reuse, preparation for reuse, recycling, other types of recovery and disposal of textiles and footwear products; data collection and subsequent communication to the competent authorities; and support for research and development to implement sorting and recycling processes.

As for providers of online platforms that allow consumers to conclude distance contracts, Member States shall have to ensure that these providers offer consumers information about their registration in the producer register, a self-certification by which the producer undertakes to offer only textile products for which the extended producer responsibility requirements are met in the Member State where the consumer is located.

Member States shall ensure that EPR schemes are established within 30 months after the entry into force of the directive and establish a register of textile producers to verify producers' compliance with their obligations.

Registration shall be compulsory and completed by means of an application submitted in each Member State where the products are first placed on the market. Member States shall only permit producers to make textile products accessible on the market for the first time on their territory if they – or, in the case of authorisation, their authorised representatives – are registered in that Member State. The register should facilitate the connection to other national registers to facilitate the registration of producers in all Member States.

The competent authority shall be entitled to refuse or revoke the producer's registration in the case of documentary and informational deficiencies, or in case of failure to meet registration requirements.

Member States shall ensure that textile producers appoint a producer responsibility compliance organisation to fulfil extended producer responsibility obligations on their behalf. These organisations shall have to ensure that the financial contributions received from producers are based on the weight of the products concerned and, for textile products, are based on Ecodesign requirements. Organisations shall also have to verify that financial contributions are adapted to the operational needs of the organisations and

ensure fair treatment of producers regardless of their origin or size. Organisations shall have to set up a separate collection system for textile products, regardless of their nature, composition, condition, brand or origin. The collection system shall offer the collection of these textile products and provide the practical arrangements necessary for the collection and transport of these products.

Organisations shall have to make available to end-users – in particular consumers – information on sustainable consumption, reuse and end-of-life management of textiles and footwear, through a website or other means of communication.

At least yearly, producer responsibility organisations shall have to release information on the quantity of products put on the market, the rate of separate collection of textile products, associated with used and waste textiles and footwear specifically listed, including unsold products, the rates of re-use, preparation for re-use and recycling, specifying separately the recycling rate of closed loop fibres, achieved by the producer responsibility organisation, and the rates of other types of recovery, disposal and export.

Member States shall be responsible for overseeing the collection system by ensuring that collection points, not subject to any of the registration or authorisation requirements of the directive, are set up with national coverage.

Lastly, Member States are burden with the duty to ensure separate collection of textiles for reuse, preparation, and recycling by 1 January 2025.

IV. Textiles Ecosystem Transition Pathway: A successful green and digital transition of the EU textiles ecosystem

The transition to a circular and sustainable textile ecosystem[33] requires, given the complexity of the supply chain, a necessarily cross-cutting approach. And this awareness

[33] P. MHATRE, R. PANCHAL, A. SINGH, S. BIBYAN, *A systematic literature review on the circular economy initiatives in the European Union,* in Sustainable Production and Consumption, 26, 2021.

has led the EU institutions to promote a co-creation process with stakeholders to define, along with them, a transition path grounded in a set of actions to be deployed, according to a short-, medium- or long-term implementation schedule.

The textile ecosystem[34] is deemed a high-potential sector in the transition to circular models of production, consumption, and trade, and by means of the co-creation process, the transition pathway for the textile ecosystem aims to identify the concrete implications of green and digital transition. The most promising industry segments include innovative, sustainable, circular, and high-quality products. Recycled and renewable fibres could indeed take a leading role within the EU single market, creating new business opportunities and strengthening the industry's resilience.

Yet, there are multiple challenges ahead: competitors from third countries, the inefficient use of raw materials and low recycling capacity of closed-loop fibres, managing overproduction and overconsumption of garments, and the low uptake of repair services and the concept of product as a service, hence the urgency of expediting the twin transitions under the form of macro-objectives achievable by means of targeted measures.

Among the goals[35] set by the document, particular emphasis is placed on regulatory objectives and public governance.

Beyond the legislative efforts examined earlier, the Commission is ready to review the textile labelling regulation, in which the European Commission will consider introducing digital label, as well as harmonized rules on voluntary or mandatory disclosure of other types of information that could include metrics on sustainability and circularity. The

[34] L. SILIŅA, I. DĀBOLIŅA, E. LAPKOVSKA, *Sustainable textile industry – wishful thinking or the new norm: A review*, in Journal of Engineered Fibers and Fabrics, 19, 2024.

[35] The set of fifty actions is furtherly divided in eight building blocks, i.e., sustainable competitiveness, regulation and public governance, social dimension, R&I, techniques and technological solutions, Infrastructure, skills, investments and funding, ecosystem’s readiness to support EU strategic autonomy and defence efforts.

initiative is consistent and complementary with the information that will flow into the digital passport.

The transition process does not forget about the end-consumers.

To this end, the recently approved directive on consumer empowerment is aimed at ensuring that consumers receive adequate information about the durability and repairability of products prior to purchase[36]. To complement this proposal, the proposal for a directive on environmental claims will play a key role in defining more detailed rules on proofing, verifying, and reporting voluntary environmental claims and environmental labelling schemes within the single market[37].

The European Commission has also adopted a legislative proposal on common standards promoting the repair of goods[38] which aims to extend the life and use of the product before its final disposal.

The Commission has likewise included in the legislative agenda the review of the EU Ecolabel criteria for textiles and footwear to support its take-up by manufacturers and provide consumers with an easy-to-recognize and reliable system for choosing environmentally friendly products. Together with representatives of the textile industry,

[36] COM/2022/143 final. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and better information. The proposal has been approved on 10th January 2024.

[37] COM/2023/166 final. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on substantiation and communication of explicit environmental claims, *i.e.* the so-called Green Claims Directive.

[38] COM/2023/155 final. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394, Directives (EU) 2019/771 and (EU) 2020/1828.

the development of category rules related to the product environmental footprint for garments and footwear is also underway.

Also within the orbit of the textile ecosystem is the proposed directive inherent in the duty of care of companies for sustainability purposes, the proposed regulation banning products made by forced labour in the union market, and the directive on corporate sustainability reporting.

Likewise, the REACH Regulation is another example of horizontal EU legislation that provides a high level of environmental health protection against the use of chemicals, including those used by the textile industry. Many chemicals used in garment production, such as fabric dyes and finishing products, are as a result subject to restrictions or authorization under REACH.

Textile industry facilities shall also be required to comply with new legal standards[39] on the pretreatment or dyeing of textile products adopted in December 2022 under the Industrial Emissions Directive[40] to reduce their environmental impact. In addition, the European Commission's proposed revision of the Industrial Emissions Directive[41] envisions the extension of the scope of the directive to textile finishing operations.

With reference to key performance indicators, a project to monitor the green and digital transformation of industrial ecosystems and progress over time has been launched as part

[39] Commission Implementing Decision (EU) 2022/2508 of 9 December 2022 establishing Best Available Techniques (BAT) conclusions, pursuant to Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions, for the textile industry.

[40] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).

[41] COM (2022) 156: Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste.

of the "*Monitoring of European Industrial Ecosystems*". With the publication of the strategic report, a new stage in the implementation of the transition process involving all stakeholders begins.

The goal remains to carry out the concerted steps and track the progress of the transition through ongoing, multilevel cooperation. Indeed, the realization of the strategic objectives is tied to and depends solely on the commitment and involvement of industry players, institutions, and end consumers.

V. What about Italy?

This is a historic moment for the fashion industry, which is transitioning from being a deregulated sector to being a highly regulated one. Also in our country, the 2030-time horizon has brought attention to environmental sustainability targets.

The enactment in February 2022 of the constitutional law on environmental protection is a clear sign of awareness of the environmental and social dimensions of business activities. The merit of this regulatory intervention is twofold[42]. First, the legislator has introduced, among the fundamental principles of the Constitution, the protection of the environment, biodiversity and ecosystems, also in the interest of future generations. And secondly, to the existing limits on freedom of economic initiative, it was added that it cannot take place to the detriment of health and the environment, complementing and integrating the environmental and social dimensions of sustainable development.

The reform, which was approved by almost unanimous consent, thus places the recognition of the value and importance of sustainable development at the very top of the legal system.

[42] G. BAROZZI REGGIANI, *La "funzione sociale della tutela dell'ambiente" alla luce della revisione costituzionale del 2022 e del più recente quadro giuridico europeo*, in federalismi.it, 7/2024, pp. 47-87.

It is a pervasive paradigm shift that has also included ordinary legislative activity, leading to the study of several initiatives that closely involve the fashion industry.

V.1. The Legislative Decree no. 68/2020

Ambiguity, even definitional ambiguity, is the enemy of sustainability.

The Italian Legislator, being aware of this, has recently intervened with legislative decree no. 68/2020[43] to clarify the meaning and use of the words "*leather*", "*fur*" and their derivatives, with the double aim of ensuring the protection of consumers against misleading claims and a fair competition within the market.

The consumer concern for sustainability has resulted in a multiplication of definitions - a industry-wide bad practice - that are alluring from a marketing angle, yet inappropriate and deceptive in terms of technical characteristics and environmental footprint.

Leather is indeed derived[44] from a renewable raw material, i.e., food industry waste, then processed into a durable product with inimitable physical and technical specifications.

The core of the decree, in a synthesis attempt between technical innovation and coherence with European rules and international technical standards, consists in outlining new clear and intelligible definitions.

[43] LEGISLATIVE DECREE No. 68 of 9 June 2020 New provisions on the use of the terms "*leather*", "*skin*" and "*fur*" and those derived from them or their synonyms and the related sanctioning discipline, pursuant to Article 7 of Law No. 37 of 3 May 2019, replacing Law no. 1112/1966.

[44] L. BOLTRI, G. P. GEMINIANI, P. PIERRO, A. SIENA, *An example of sustainability and commercial transparency: the Legislative Decree no. 68 of 9 June 2020 containing "new provisions on the use of the terms « leather » and « fur » and of those derived therefrom or their synonyms*", edited by M. DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 291 – 309.

Under Article 2[45]., leather is defined as that material derived from animal remains, subject to tanning treatments or impregnated in such a way to preserve the natural structure of the fibres. Moreover – with a certain vision - Article 2 provides for a specification of the technical characteristics thus preventing any confusion with other plant derived products that are falsely assimilated to leather.

Complementary to the definitional effort is the provision of Article 3 which, in regulating the use of the terms "leather", "skin", "fur" and similar, "*prohibits the placing and making available on the market under the terms, also in a language other than Italian, "cuoio", "pelle", "cuoio pieno fiore", "cuoio rivestito", "pelle rivestita" "pelliccia" and "rigenerato di fibre di cuoio", either as adjectives or as nouns, even if inserted with prefixes or suffixes in other words or in combination with them, or under the generic names of "cuoiame", "pelle", "pelletteria" or "pellicceria", of materials or manufactured articles made of materials which do not comply with the corresponding definitions set forth in Article 2, paragraph 1*".

The effectiveness of the provisions is also supported by a labelling system, on a voluntary basis, which burdens manufacturers or importers and distributors to provide accurate and transparent information on the composition of products placed on the market, as well as by an administrative pecuniary penalty system[46].

The regulatory text, though, is not immune to distortions.

Firstly, the need for harmonisation with the discipline in force at EU level has reduced the scope of application of the decree, as both footwear and textile products, regulated respectively by Directive 94/11/EC and Article 12 of EU Regulation no. 1007/2011.

Similarly, Article 5 – which states the principle of mutual recognition – limits the scope of application of the decree to the materials referred to in Article 2 and products made

[45] This definition is unanimously accepted not only by Italian and EU legislators, but also by some voluntary sector standards such as UNI 111427 and UNI EN 15987.

[46] The protection against criminal acts is entrusted to Articles 515 and 517 of the Italian criminal code.

with them, produced in Italy and placed on the Italian market, or to those directly imported from countries with which Italy does not operate under a free trade regime.

Despite the aforementioned shortcomings, legislative decree no. 68/2020 has helped restore dignity to a product of excellence and recognised the commitment of those players in the supply chain who have embraced the cause of sustainability.

In the wake of a regulatory trend that has involved several Member States, this decree has thus taken a clear position on the unorthodox and misleading use of terms subject to regulation, taking sides in the protection of transparency and fair competition in the market; an example that it is hoped will be followed by a harmonising initiative at EU level.

V.2. Drafting a suitable EPR Regime

Italy has always expressed an exceptional textile productive tradition, leading the national lawmaker to assume the burden of building a system that enhances eco-innovation and helps to affirm the centrality of producers, while protecting the environment and legality. These are the premises behind the decree proposal[47] on extended producer responsibility, drafted by the Ministry for the Environment and Energy Security in agreement with the Ministry for Enterprise and Made in Italy.

The "*Draft decree for the establishment of the extended producer responsibility regime for the clothing, footwear, accessories, leather goods and home textiles supply chain*" already outlines in its title the goods whose responsibility shall be governed by the EPR regime. These are the finished products - not yarns, for example - discarded by end consumers.

[47] P. MASCIOCCHI, *Responsabilità estesa del produttore nel settore tessile*, in Ambiente24, vol.1, 2023.

The decree, echoing[48] the priorities of the EU legislator in Article 1, "*promotes the sustainability of products, as well as a design of products and their components aimed at reducing their environmental impacts and the generation of waste during the production and subsequent use of the products, in order to ensure the recovery and disposal of products that have become waste"*[49].

Producers' responsibility shall range from the financing and management of collection, for the recovery of municipal textile waste through a capillary collection network, to the development and supervision of selective collection systems, to increase the quality of textile fractions.

To this end, producers shall be able either to establish an individual or collective management system, along the lines of consortia.

Producers and distributors shall define the necessary operational modalities to promote the repair and reuse of products, the preparation for reuse, the recovery of fibres, materials and other textile components, and recycling operations.

The EPR also encompasses producers and distributors operating at a distance (e-commerce, distance selling contracts) on whom the duty to inform consumers of the places and methods of delivery will fall, under penalty of the right of withdrawal with full refund of the sum already paid.

Producers - and end consumers - will also have to bear the so-called environmental contribution, a monetary sum intended to manage the end-of-life of products and to cover producers' obligations which will be visible on the receipt. This levy will be modelled on the environmental performance criteria of textile products, such as the material

[48] See also M. LETIZI, *Responsabilità estesa del produttore del rifiuto e circular economy,* in IL SOLE 24 ORE, 2021; M. SIRONI, *La responsabilità estesa del produttore nel settore tessile: stato dell'arte e futuri sviluppi in Ue*, in GeoTrade, Rubbettino, 7, 2023, pp. 94-97.

[49] The draft decree sets progressive – and ambitious – targets to be achieved.

composition of the product, the complexity of the composition of the garment, the use of recycled fibres in the manufacture of the product, the reparability/reusability index.

To achieve the set targets and to guarantee the necessary co-ordination of separate collection activities, the CORIT, Co-ordination Centre for Textile Recycling, will also be set up, consisting of all the individual and collective management systems authorized by the relevant Ministry.

The decree also borrows from EU regulations the focus on eco-design as a preventive expedient to waste production and requires manufacturers to favour eco-friendly design of textile products.[50].

Besides, the need to guarantee the waste hierarchy is repeatedly stressed and, in doing so, producers, in agreement with public administrations, will have to identify measures to promote reuse, repair - taking care of the training of the necessary professional figures - and reuse centres, sharing practices, and the dissemination of the reuse culture.

In this latter regard, one of the tasks of producers and consortia will be to form a generation of critical, aware, and informed citizens able to make decisions oriented towards sustainable purchasing and good environmental practices.

[50] This requires "*guaranteeing*" the choice of natural, "*biocompatible*" or recycled fibres and processes with a low environmental impact; guaranteeing 'the increase of circular business models such as reuse, rental, repair'; guaranteeing, again, 'blending techniques' of fibres that reduce waste and strengthen industrial symbiosis; and then research into technologies for sorting fibres from waste. Among the measures to be guaranteed, also "*a digital labelling system for textile products describing their characteristics, fibre composition and indicating non-textile parts of animal origin*".

Chapter II

Looking East: The giants of Asia for a sustainable fashion

SUMMARY: I. The importance of the right perspective; II. The price of primacy: the case of Chinese textile industry; II. 1. The Chinese legislative scenario; II. 2. Mandatory measures; II. 3. Voluntary instruments; III. The meshes of India's regulatory framework; III. 1. Self-responsibility through eco-certifications; III. 2. Accelerating the sustainability revolution.

I. The importance of the right perspective

If we are intuitively prone to adopt a west-centric perspective, when it comes to sustainable development, our gaze must necessarily turn to East.

Data are indeed self-explanatory.

For the last decades, the textile and clothing industries have been playing a decisive role in both the Chinese and Indian economy, driven by a tremendous domestic market and a leading share in the global textile exports[51][52]. Current economic evaluations suggest that by 2030, China will be the largest clothing market in the world, while India will occupy the third step on the podium. The growth in production and consumption in the will increase the average purchasing of consumers and produce a change in the purchasing habits of the middle class. Consequently, should the sensibility of legislators and consumers remain as it is today, the two Asian giants could drive an ethic revolution in the microcosm of fashion.

[51]According to the OEC's index, China and India qualified 1st and 4th among the top export countries worldwide.

[52] J.P. JUANGA-LABAYEN, I.V. LABAYEN, Q. YUAN, *A Review on Textile Recycling Practices and Challenges*, in Textiles, 2022, pp. 176.

In other words, if there is to be a green transition within the textile sector, the wind of change will blow from the East.

II. The price of primacy: the case of Chinese textile industry

Over the last few years, the global textile industry has caught the attention of international observers for its major impact on the climate and the severity of the situation is furtherly exacerbated by the international reach of the textile supply chain. At the heart of this global issue stands China, the world's largest textile producer, whose industry practices[53] have such far-reaching effects that they require an urgent and endemic rethink in favour of more sustainable production models.

Historically, policymakers in China have prioritised economic growth, treating environmental consequences as unpleasant but necessary costs to be paid in exchange for economic growth.

Since 1978, the textile and clothing sector has undergone a radical regulatory reform aimed at a complete re-organisation which – thanks to the government's policy of financial and fiscal support – has given the industry a strategic role at national level and undisputed international leadership. Yet, the development of an outward-looking and highly competitive market has come at an incalculable environmental price[54], which the Chinese government is trying to offset.

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[53] J. JIE, T. W. HOE, S. W. QIAN, *Fostering sustainability in China's textile industry. The role of education for sustainable development*, in Vis Sustain, 20, 2023, pp. 338 where it's stated that "*The country's manufacturing processes, ranging from raw material extraction to the disposal of the final product, are characterized by considerable water and air pollution, augmented energy usage, and substantial waste generation, all of which contribute to a pressing environmental dilemma*".

[54] Z. SHUTTER, *Conservation or revolution? The sustainable transition of textile and apparel firms under the environmental regulation: Evidence from China*, in Journal of Cleaner Production, Volume 382, 2023.

This shift is an imperative and cannot be postponed.

Thus, China is now going through a deep and structural transformation of its development models, with the intention to make economy and society sustainable and greener. The systemic shift towards tackling climate change can be attributed to the changing perspective of the Chinese Government – a turn that has been reaffirmed through a solemn commitment to the international community to reduce carbon emission.

In the wake of the Chinese President's statements at the UN General Assembly[55], the focus on sustainability policies has indeed grown exponentially during the last three years.

Accordingly, as an energy and carbon-intensive sector, the textile industry has been at the core of many environmental policies to promote energy conservation and emission reduction, attempting to facilitate a sectorial transition from a polluting, low-cost labour-intensive scheme to a cleaner, more ethical, and technological one.

II. 1. The Chinese legislative scenario

Nonetheless, it is not easy to answer the question of what initiatives have been taken, as the legislative landscape is highly fragmented and constantly evolving[56].

In the absence of an organic and organised normative framework, actors in the textile and garment industry have to navigate through a wide range of cross- sectoral laws, regulations, rules and standards, as well as a certain number of industry-specific standards, codes and recommended practices.

[55] In September 2020, Chinese President Xi Jinping declared before the UN General Assembly that the country will "*strive to peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060*".

[56] *Sup.* note 51.

The first step is therefore to have a clear understanding of the regulatory framework that is in place.

China's environmental protection consists of laws, administrative regulations, local regulations, departmental rules, and provincial government rules. It also includes numerous standards, that can be national (GB), industrial (HJ), and local (DB).

Specifically, environmental legislation follows the so called "1+N+4" scheme.

The number "1" is referred to the Environmental Protection Law[57], which represents the cornerstone of the whole system.

The letter "N" refers to a set of environmental protection laws, such as Water Pollution Prevention and Control Law, the Air Pollution Prevention and Control Law, the Law on Prevention and Control of Environmental Pollution by Solid Waste, the Environmental Impact Assessment Law, the Soil Pollution Prevention and Control Law, the Law in Prevention and Control of Pollution from Noises. These laws provide the legislative basis for a range of administrative regulations, implementing rules, and technical standards at both national and local levels.

Lastly, number "4" indicates a number of laws aimed at ecological environmental protection of special geographic areas, specific regions or watersheds.

At the same time, the State Council, under the Environmental Protection Law, executes laws and carries out the administrative functions of the Chinese government. In performing these functions, this authority has issued the Regulations on Environmental Protection of Construction Projects, the Regulations on Sewage Disposal Permits etc.

[57] The first version of the Environmental Protection Law was promulgated in 1979, enacted in 1989 and then further amended in 2014. Under Art. 1 of the 1989 Environmental Protection Law, "*This Law is formulated for the purpose of protecting and improving people's environment and the ecological environment, preventing and controlling pollution and other public hazards, safeguarding human health and facilitation the development of socialist modernization*".

The provincial and city level's people's congress and its standing committee have also drafted local environmental protection policies. Additionally, there are many standards linked to environmental management and pollutant discharge limits.

As for the textile industry, the Chinese government has actively promoted energy conservation and emission reduction by targeting the sector with laws and administrative regulations – both mandatory and voluntary – whose contents have varied depending on the specific issue being addressed. The apparel industry was indeed highlighted as a high-potential sector to steer a circular economy in 2014 and the call for "*Ecological Civilisation*" launched by the Chinese President had a further propelling effect on industry legislation.

But how have these ambitions been turned into reality?

II. 2. Mandatory measures

For the purpose of a regulatory analysis, there are two categories of environmental protection instruments[58]: commanded and control instruments, and voluntary instruments[59].

[58] Y. XIE, *Sustainability and Fashion: From the Perspective of Chinese Law and Practice*, in *Fashion Law and Sustainability,* edited by M. DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 209 – 218.

[59] In this context, as duly noted in C. XU, H. CHENG, Z. LIAO, *Towards Sustainable Growth in the Textile Industry: A Case Study of Environmental Policy in China,* in Polish Journal of Environmental Studies, 27(5), 2018, pp. 2325-2336, market-based instruments may be a third relevant category.

The use of MBIs has gained momentum and expanded rapidly in OECD countries as they can be complementary to regulatory instruments, thereby increasing the effectiveness of policies and achieving environmental goals at reduced cost. Those instruments indeed may be considered as a regulatory support measure rather than a purely economic tools.

The first category encompasses all the regulatory instruments that stem from provisions applied by virtue of laws and regulations that set binding objectives, standards, and technologies for fashion manufacturing companies active in the sector[60]. These measures are complemented by a system for monitoring the activities of companies and a corresponding system of sanctions in the event of non-compliance with these provisions. More specifically, these instruments can take the form of bans, norms, market entry permits, emission limits, technical requirements for intermediate and/or final products, quotas, specification of the characteristics of technical production processes, and decontamination.

Among these, industry access restrictions deserve special attention, since they are applied to production sites that are deemed to be highly polluting and are listed as "restricted" or "prohibited" in the *Catalogue for the Guiding Industry Restructuring*[61], and therefore not to be installed or phased out.

Moreover, MBIs aim to encourage behavioural change by market signals, including the modification of relative costs, financial transfer, or both, ranging from tradable permits and pollution taxes to deposit-refund systems and performance bonds. These instruments, therefore, incentivize enterprises and individuals to make the trade-off between cost and benefit, and voluntarily reduce the environmental treatment costs associated with adopting new energy or technologies.

[60] *Sup.* note 51. *See* also S. ZHANG, G.Y. QIN, L. WANG, B.D. CHENG, Y. TIAN, *Evolutionary game research between the government environmental regulation intensities and the pollution emissions of papermaking enterprises*, in Discrete Dynamics in Nature and Society, 2021, p. 13; F.Y. LI, Z. WANG, L.X. HUANG, *Economic growth target and environmental regulation intensity: evidence from 284 cities in China*, in Environmental Science and Pollution Research, Volume 29, 2022, pp. 10235-10249.

[61] The *Catalogue for Guiding Industry Restructuring* is a government document issued by the National Development and Reform Commission (NDRC) that serves as a guide for industrial restructuring and, by classifying industries as "encouraged", "restricted" and "obsolete", filters out those elements that are in line with national laws and policies. The catalogue has been a crucial tool in shaping investments and directing

Also included among the command-and-control instruments is the Environmental Impact Assessment that certain production categories[62] – *i.e.* the printing and dyeing industry, as well as the production leather and fur, recently both brought under a higher management class – are obliged to obtain before building, renovating or modifying a production site.

Companies carrying out in certain types of production[63] – including the textile, clothing, and apparel industry, as well as the productions of leather, furs, feathers and related goods, and footwear – are bound to obtain a Pollutant Discharge Permit, which covers air and water emissions, solid waste and noise pollution, or a specific registration. Similarly, these enterprises are required to receive a permit, the so-called Sewage Discharge Permit, for the use and disposal of particularly hazardous chemical substances, where these materials are used within the production process. These permits and the registration mentioned above are subject to strict monitoring and, at times, to inspections.

public projects. The 2024 edition, enforced in February 2024, reflects a strategic policy shift, highlighting a dual focus on fostering the green economy and promoting high-tech industries. This dual focus aligns with broader government initiatives and future economic goals, as well as with the will to implement smart manufacturing based on green production, recycling, and digitalization.

[62] The *Catalogue for the Classified administration on Environmental Impact Assessment of Construction Projects*, issued and updated by the Ministry of Ecology and Environment, lists the productions involved, in accordance with the relevant norms set by the Environmental Impact Assessment Law of the People's Republic of China. The latest version released came into force in January 2021.

[63] The *Catalogue for the Classified Administration on Emission Permit to Fixed Polluting Sources*, released by the Ministry of Ecology and Environment, in accordance with the Environmental Protection Law and the other relevant laws and regulations, lists the production categories that are bounded to obtain emission permits to carry out their production, depending on the amount of pollutants discharged, the amount of emissions, the degree of impact on the environment and other factors. The most updated version dates back December 2019.

Additionally, companies are held responsible for disclosing, reporting and self-monitoring their pollutant discharges.

And finally, the command-and-control tools can take the forms of technical specifications and standards[64]. These are firstly industry norms, *i.e.* regulatory documents issued by the Ministry of Industry and Information Technology, to which textile manufacturers must comply with. For the textile and apparel industry, there are many industry norms currently in place, ranging from printing and dyeing to leather and synthetic fibres and of course some of these include specific environmental and energy efficiency requirements. No less important are standards that, like industry norms, may be mandatory and, accordingly, failure to meet them can lead to market access barriers [65]. In this regard, it is worth recalling the Technical Specifications for Application and Issuance of Pollutant Permit for Textile and Dyeing Industry, issued in 2017, as well as Discharge Standard of Water Pollutants for Leather and Fur Making Industry, issued in 2014.

Textile manufactures are ultimately bound by a broad spectrum of compulsory environmental requirements that may differ depending on the type of product or material concretely involved in the productive process. In addition, violations can result in punitive measures, ranging from administrative sanctions – such as fines, production suspension, equipment seizure, and factory shutdown – to, in the most severe cases, criminal charges.

II. 3. Voluntary instruments

[64] *See* C. XU, H. CHENG, Z. LIAO, *Towards Sustainable Growth in the Textile Industry: A Case Study of Environmental Policy in China,* in Polish Journal of Environmental Studies, Volume 27, 2018, pp. 2325-2336.

[65] Compulsory standards such as GB 18401-2010 National Technical Specification for The Safety of Textile Products, GB 31701-2015 Technical Specification for the Safety of Textile Products for Infants and Children, GB/T 29862-2013 Textiles-Identification of Fiber Content and more than 100 product standards constitute the technical barrier for the safety of textile chemicals.

However, the system designed by Chinese institutions to protect the environment does not solely consist of mandatory provisions[66].

Indeed, the second category of environmental protection instruments comprises voluntary measures. These are designed to introduce flexibility into the system through self-regulation by polluting sectors in a cooperative process. Specifically, public administrations establish an environmental performance model that economic actors can voluntarily comply with, in exchange for technical assistance, public recognition, or more favourable regulatory treatment. Public administrations set the creation and provision of information processes regarding the environmental cost of using polluting substances or processes. The aim is to guide and incentivise businesses to improve their environmental performance.

The China Green Product Label (CGP)[67] falls into this category.

Based on the *Opinions on Developing a unified Standard, Certification and Identification System of Green Products*, the State Administration for Market Regulation drew up the Administrative Measures for the use of the Green Product Label, according to which the CGP label covers "all-green products" – including textiles – and "green-related products".

The certificate can be obtained through an application, supported by documentary evidence, which is followed by an examination procedure, at the end of which, if the legal requirements have been met and the inspections successfully carried out, the certifying

[66] *See* again C. XU, H. CHENG, Z. LIAO, *Towards Sustainable Growth in the Textile Industry: A Case Study of Environmental Policy in China,* in Polish Journal of Environmental Studies, Volume 27, 2018, pp. 2325-2336; Y. XIE, *Sustainability and Fashion: From the Perspective of Chinese Law and Practice*, in *Fashion Law and Sustainability,* edited by M. DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 215.

[67] Standards and rules applied in the recognition of textile products are CNCA – CGP – 10: 2020 and GB/T35611 – 2017.

bodies will issue the certificate in favour of the applicant. Once obtained, the certificate is valid for 5 years and, to be maintained, requires regular monitoring.

It is undeniable that the CGP certificate adds value to the products that display it, providing a clear competitive advantage to the companies that are granted its use.

Thus, to support the adoption of CGP-certified products, the SAMR, in cooperation with other State Council ministries and local governments, has introduced preferential policies such as public procurement of green products, green finance, credit and subsidies. At the same time, major national e-commerce platforms opened special sections to promote CGP products and launched an industry-wide initiative to certify green packaging products.

The China Environmental Labelling programme[68] is another example of a voluntary environmental protection instrument. It is the first national green certification scheme based on the ISO 14024 model and is fully run by the Ministry of Ecology and Environment. The programme covers approximately 90 product categories – including textiles and garments – and, being linked to the implementation of the China's Public Procurement process, has contributed to an exponential increase in the number of companies and products involved. The management of this eco-label is entrusted to the China Environmental United Certification Centre (CEC) which has bridged the gap between eco-production and consumption by providing, impartial, and high-quality certification and advisory services for the government, businesses, and the public.

Also noteworthy is the domestic Ecological Textiles certification standard[69], *i.e.* the Chinese version of the Oeko-Tex Standard 100 shaped on its 2008 edition. This national standard has recommended nature and specifies the terms and definitions, product classification, requirements, test methods, and inspection rules of eco-textiles. It is

[68] L. ZHOU, S. REN, L. DU, F. TANG, R. LI, *Is environmental labelling certification a "green passport" for firm exports in emerging economies? Evidence from China*, in International Business Review, Volume 32, Issue 5, 2023, 102171.

[69] Standards and rule applied are CQC22 -026780-2010 and GB/T18885 – 2020.

applicable to various textile products – including fibres, yarns, fabrics, products and their accessories – which are made of sound or less harmful raw materials by means of production processes harmless to human health.

In a similar vein, mention should be made of the certification of low carbon products. The National Development and Reform Commission and the Certification and Accreditation Administration jointly issued the "*Notice on Interim Administrative Measures*" for the Certification of Low-Carbon Products, which sets out a comprehensive system for the certification and management of low-carbon products, effective from February 2016. As a result, silk, cotton and man-made fibre fabrics can apply for this status based on the actual use of a low-carbon management system in their production[70].

Most recently, China has launched a platform[71] aimed at enhancing sustainability within its textile and apparel sector, with a significant focus on traceability through the entire industry chain, from fibre to finished products. Accordingly, the platform is intended to ensure transparency and credibility of the green fibre products[72], as well as to encourage their use and consumption.

The platform – supervised by the Department of Consumer Goods Industry under the Ministry of Industry, and the Information Technology and Suzhou Market Supervision

[70] The standards and rules applied in the recognition of China Low-Carbon Products for fabrics include CNCA-LC-0106 2016 and other technical rules.

[71] Known as the "*Reborn - China Fibre Zero Carbon Action 2023 — Sustainable Textiles Credible Platform*", the initiative was officially launched in March 2023 at the National Exhibition and Convention Centre Shanghai, in alignment with the domestic dual carbon strategy.

[72] Chemical fibre association can recognise yarns, fabrics, textiles and clothes as green fibre products, assessing that: raw materials are from bio-recyclable materials, low carbon of environment friendly process, no harm to the environment in their use or disposal. Standards and rules applied in the recognition process of Green Fibre are Certification Rules on Green Fibre Products (Trial Version) and Technical Requirements on the Assessment of Green Fibre Products.

Administration – will be jointly headed by the National Advanced Functional Fiber Innovation and Centre China Chemical Fibres Association.

In addition to the platform's launch, the Ministry has proactively released a *Guidance on the High-Quality Development of the Chemical Fibre Industry*, publishing and revising the Normative Conditions for Recycled Chemical Fibre (Polyester) Industry and Interim measures for the administration of the Normative Conditions of the Recycled Chemical Fibre (Polyester) industry, thus promoting high-quality, high-efficiency, high-value recycling of waste resources such as waste textiles and bottle flakes, and the structural adjustment and industrial upgrading of the recycled chemical fibre industry.

Furthermore, the ministry is currently working on establishing China's recycled fibre standard[73] certification system by guiding and supporting the establishment of the Sustainable Textiles Credible Platform as one of the steps in doing so.

III. The meshes of India's regulatory framework.

The textile industry is the backbone of the economy in most Asian countries, and India is no exception[74].

The textile sector of India stands as one of the oldest and largest employment providers industries within the nation's economic scenario, accounting for about 2.5% of the GDP. The industry's strength lies in a robust production base, encompassing an extensive array of fibres and yarns, and manufacturing a diverse spectrum of products tailored to meet the needs of various market segments, both domestically and globally. The sector's

[73] Just in 2022, China Standardization Administration released with Announcement No.6, 20 GB/T regulations relevant to textile, leather, and clothing.

[74] K.S. KAVI KUMAR, *A Study of India's Textile Exports and Environmental Regulations*, Springer, 2018, pp. 1-14.

inherent connection to agriculture and its deeply rooted cultural ties renders it distinctive when compared with other industries in India.

It is therefore hardly surprising that the institutional and sectoral debate is as attentive as ever to the prospects and potential implications of a transition to circularity- and sustainability-oriented business models.

First and foremost, protecting the environment is a constitutional duty[75] for the State and every citizen. A burden often stressed by the Indian Courts, notoriously more sensitive and receptive than policymakers to the changes and concerns within public opinion.

Despite the declarations of intent of government leaders – who have committed themselves on the international stage to increasing the share of renewable energy in the short term and to zero emissions by 2070 – the legislative scenario is still far from securing the adoption of norms and practices that shall facilitate the transition of the textile and apparel industry towards a sustainable tomorrow.

For the textile industry alone, there is no specific environmental legislation, and the regulatory framework comes under various pieces of legislation, which are stringent yet poorly enforced.

Nonetheless, numerous initiatives have been launched.

The Ministry of Corporate Affairs took a first step in the way of corporate sustainability and responsible business management by releasing the National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business, which was and still is

[75] This duty is enshrined in Article 51A(g). However, it must be emphasised that this article is part of the "*Directive Principles of State Policy*" of the Indian Constitution, which are not legally binding in the sense that they cannot be directly applied by the courts to enforce the rights of citizens, although they do provide guidelines and principles that the state is obliged to bear in mind when formulating laws and policies.

– yet amended to meet the UN Sustainable Development Goals[76] and now called the National Guidelines on Responsible Business Conduct[77] – a set of nine principles to be adopted by the undertakings as part of their operational and reporting model.

In 2012, after the release of the NVGs, the Securities and Exchange Board of India framed the Business Responsibility Reporting (BRR), wherein the SEBI made compulsory[78] for the top 100 listed Indian companies by market capitalization to report on their ESG performance within their annual reports. The original BRR was meant to create a

[76] Aware of the urgent need for change, the UN introduced the Sustainable Development Goals (SDGs) in 2015, a set of 17 goals aimed at promoting sustainable development. Several of these SDGs – *i.e.* SDG 12 *Responsible Consumption and Production*, SDG 13 *Climate Action*, SDG 14 *Life below water*, and SDG 15 *Life on Land* – are highly relevant to the textile industry.

[77] The nine pillars of business responsibility are the following.

Principle 1: *Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent, and accountable*. Principle 2: *Businesses should provide goods and services in a manner that is sustainable and safe*. Principle 3: *Businesses should respect and promote the well-being of all employees, including those in their value chains*. Principle 4: *Businesses should respect the interests of and be responsive to all its stakeholders*. Principle 5: *Businesses should respect and promote human rights*. Principle 6: *Businesses should respect and make efforts to protect and restore the environment*. Principle 7: *Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent*. Principle 8: *Businesses should promote inclusive growth and equitable development*. Principle 9: *Businesses should engage with and provide value to their consumers in a responsible manner*. The principles are listed in the National Guidelines on Responsible Business Conduct, in https://www.mca.gov.in/Ministry/pdf/NationalGuildeline_15032019.pdf.

[78] Via Circular No. CIR/ CFD /DIL /8/2012.

prototype on which to shape a broader ESG reporting model, serving as a launchpad for the more up-to-date Business Responsibility and Sustainability Reporting[79].

It took over a decade for the BRR scheme[80] to be honed to fit today's sustainable reporting scenario, evolving into the Business Responsibility and Sustainability Reporting, which was launched by SEBI in 2021[81] and came into effect during the financial year 2022-2023.

The underlying intention of the BRSR is the seamless integration and alignment – whilst meeting the UN Sustainable Development Goals – of the various regulatory frameworks and compliance requirements related to ESG parameters to be followed and disclosed by business entities operating in India for the purpose of responsible business conduct and transparent disclosure of their non-financial data and sustainability goals of the company.

The BRSR is shaped on the National Guidelines on Responsible Business Conduct and consists of three sections. The first, called General Disclosure, contains basic information about the enterprise, such as the products or services provided, details of any related or complementary enterprises, the number of employees, and so forth. The second is entitled Management and Process Disclosures and is dedicated to the publication of the data, implementation methods and resources allocated to policies related to the NGRBC principles. Finally, the final section, Principle-wise Performance Disclosure, is where the

[79] S. MANDAL, S. MUKKHERJEE, *Existing legislation in India Regarding Sustainable Development Practices by Business Entities with Special Reference to The Fashion Industry*, in *Fashion Law and Sustainability*, edited by MARIO DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 224 – 239.

[80] Within the said timeframe, the BRR scheme was repeatedly amended by the SEBI, first by extending its target audience – from 100 to 500, and finally to the top 1,000 companies by market capitalisation –, then by changing its nature, making it voluntary, and introducing new ESG parameters anchored to the nine NGRBC principles, and finally, permanently phased out in 2021 in favour of the mandatory BRSR.

[81] Via Circular no. SEBI/HO/CFD/CMD-2/P/CIR/2021/562.

company discloses how it performs against the nine principles and core elements of the NGRBCs. The information in this section is divided into two categories: essential indicators, which are mandatory, and leadership indicators, which are otherwise voluntary[82].

Moreover, any violation of the provisions of the statutory provisions may trigger the penal powers vested in SEBI. The penalty regime ranges from fines to the possibility of charging and prosecuting those held responsible for violations.

Ultimately, BRSR reporting requires companies to highlight the sustainability-related challenges they face and to elaborate on their ESG-related objectives, targets, and achievements, while also identifying the likely risks and opportunities they may face on their ESG journey.

The BRSR plays therefore an effective role in communicating a company's non-financial disclosures and should be deemed as an essential part of ESG reporting, the publication

[82] Some principle-based examples might be useful.

Under Principle 2, essential indicators include the percentage of investment aimed at improving overall environmental performance and the procedures adopted for a sustainable procurement model; while voluntary leadership indicators include Life Cycle Assessment, which describes all stages of production, from sourcing of raw materials to use, reuse, recycling, and disposal.

Under Principle 6, manufacturing companies are required to report total energy consumption, details of water withdrawal by source and air emissions, as well as information on waste management and compliance with environmental laws and regulations. In terms of leadership indicators, companies are required to provide a breakdown of total energy consumption from renewable and non-renewable sources, details of water discharge if the company has a business continuity and disaster management system in place.

For more representative cases, see S. MANDAL, S. MUKKHERJEE, *Existing legislation in India Regarding Sustainable Development Practices by Business Entities with Special Reference to The Fashion Industry*, in *Fashion Law and Sustainability*, edited by MARIO DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 231 – 235.

of which should be seen as a mandatory compliance exercise in line with SEBI's vision of the purpose of BRSR.

On this latter note, the Indian securities market regulator, per its circular dated 12 July 2023[83], has recently refined the ESG disclosure scheme by introducing the Business Responsibility and Sustainability Core framework.

The BRSR Core is defined as a subset of the BRSR, consisting of an array of KPIs under the nine ESG pillars. Accordingly, the BRSR scheme has been amended by introducing the new KPIs and, starting from FY 2023-2024, the top 1000 listed entities by market capitalization are required to make disclosures by using the updated BRSR format, as part of their Annual Reports. The Circular has also stated that listed companies must mandatorily undertake to provide reasonable assurance of the BRSR Core, adhering to a phased timetable[84].

Moreover, under the Circular, listed companies are required to disclose in their annual reports a set of ESG-related information pertaining to their value chain[85], following the guidelines set out in the BRSR Core. ESG disclosures for the value chain will apply to the top 250 listed entities on a comply-or-explain basis[86] from FY 2024-2025.

Such a disclosure requirement has come at an opportune time when countries across the planet are mandating supply chain due diligence and compliance statements from suppliers. The risk areas governed by BRSR Core are related to environmental protection and human rights in the global supply chain and requires companies to identify and

[83] SEBI/HO/CFD/CFD-SEC-2/P/CIR/2023/122.

[84] The BRSR Core compliance will become mandatory for: top 150 listed entities, from FY 2023-24; top 250 listed companies, from FY 2024-25; top 500 listed entities, from FY 2025-26; top 1000 listed companies, from FY 2026-27.

[85] The value chain should encompass the principal upstream and downstream partners of the listed entities.

[86] Accordingly, companies will be required to provide a clear explanation for their decision when compliance is not feasible.

address potential risks in several areas including GHG footprint, water consumption and discharge, waste, energy footprint, circular economy and waste management.

The desired outcome is clearly promoting sustainable and fair business practices to reduce the environmental impact of global supply chains, particularly on local communities.

BRSR Core seems thus a significant step forward in India's approach to supply chain regulation and will likely increase its transparency and accountability, by prioritizing the overall well-being of communities, and environment.

III. 1. Self-responsibility through eco-certifications

Like many other countries, India has also adopted eco-labelling as a voluntary and additional measure to address sustainability development.

The EcoMark[87] scheme was first introduced in 1991 and is currently administered by the Bureau of Indian Standards, under the authority of the Ministry of Environment, Forests and Climate Change. It is a certification mark labelling eco-friendly goods, so that products displaying both the ECO Logo and the ISI Mark[88] indicate their compliance with specific environmental standards and quality requirements.

The goal that the EcoMark seeks to reach is the overall protection of the ecosystems that are directly and indirectly exposed to the use and release of harmful pollutants. This is achieved by raising consumer awareness and promoting the use of eco-friendly products, by a more sustainable management of resources, and by both incentives and rewards for

[87] S. MANDAL, S. MUKKHERJEE, *Existing legislation in India Regarding Sustainable Development Practices by Business Entities with Special Reference to The Fashion Industry*, in *Fashion Law and Sustainability*, edited by MARIO DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023, pp. 239 – 243.

88 Except for leather-made goods, all products entitled for ECO mark must bear the ISI Mark for safety, quality, and performance. The ISI Mark also covers a set of listed textiles.

manufacturers and importers who choose to adopt practices with reduced environmental impact.

Like other eco-labels, the EcoMark operates on a strictly voluntary basis and is awarded to a range of Indian products including, of course, textiles and leather products. To obtain the mark, textile manufacturers must apply for testing and certification of their products in terms of compliance with environmental standards set under the EcoMark programme. The Bureau of Indian Standards Act, and the Rules and Regulations issued thereunder, govern the terms and circumstances that rule the functioning of the licence and its issuance procedures.

The Bureau of Indian Standards is the entity vested with the power – and responsibility – to conduct the assessments for obtaining certification verifying therefore the environmental consequences of items eligible for certification[89]. In the exercise of its certifying powers, BIS verifies that such products are made from recycled, recyclable or biodegradable materials and contribute significantly to the conservation of non-renewable resources, whilst, compared to similar consumer items, having significantly less pollution potential in manufacturing and disposal[90].

The efficacy of the EcoMark in driving positive environmental shift is further strengthened by the central role that the Government of India has assigned to this eco-label scheme within the Green Credit Programme[91], an initiative recently launched on the international stage of COP-28.

[89] To successfully enforce the scheme, the BIS has to carry out inspections and collect samples to test each product or substance bearing the EcoMark.

[90] Products certified as suitable for EcoMark are granted a license to use them for a fixed period, after which the product will be re-evaluated.

[91] The Green Credit Rules, 2023, on 12 October 2023, is a major demonstration of India's commitment to sustainable practices. Officially announced by the Ministry of Environment, Forest and Climate Change, these rules aim to introduce "*an innovative market-based mechanism designed to incentivize voluntary*

Pursuant to the Green Credit Programme Implementation Rules[92], 2023, manufacturers who obtain the Ecomark label for their textile products can contribute to the generation of tradeable Green Credits. By aligning with the EcoMark Scheme, the Green Credit Programme acknowledges the significance of eco-labelled products – as a symbol of environmental responsibility and sustainable production – in incentivising sustainable practices. This synergy stirs up manufacturers to opt for eco-friendly production techniques and attain the EcoMark certification, thus elevating the request for such items in the market. This consumer-driven demand creates a market that encourages businesses to adopt sustainable practices, thus contributing to the overall goals of the EcoMark Scheme.

The integration of the EcoMark within the Green Credit Programme Implementation Rules, 2023 therefore also provides manufacturers with a clear incentive to obtain the certification, given that, through participating in the programme, they can benefit from the generation of Green Credits, which can be traded or redeemed for various purposes.

This financial stimulus creates a virtuous circle where, producers pursue the EcoMark certification, expecting tangible returns for their sustainable choices, fuelling further adoption of sustainable production techniques, and promoting, as a result, the growth of eco-labelled products in the market.

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environmental actions across diverse sectors, by various stakeholders like individuals, communities, private sector industries, and companies" and are meant to complement the proposed Carbon Credit Trading Scheme introduced by the Energy Conservation (Amendment) Act, 2022. In India, the issuance of green credits is currently run by the Indian Council of Forestry Research and Education, which plays a pivotal role in the GCP.

[92] S. KUMAR, *Will the Green Credit Programme Incentivize Positive Environmental Actions?*, in Ecology, Economy and Society – the INSEE Journal, Volume 7, No. 1, 2024, pp. 3 – 11.

This integration reinforces the overall influence of both the Eco Mark Scheme and the Green Credit Programme, paving the way for a greener and more sustainable tomorrow for India.

In the same vein, it worth a mention the Kasturi Cotton Bharat program[93], a joint initiative of the Ministry of Textiles, Cotton Corporation of India, trade bodies and industry players to improve the principle of self-regulation by taking full responsibility for branding, traceability and certification of Indian cotton. It unfolds as an innovative endeavour intertwining sustainability and quality to position Indian cotton production as a leader in the global market and establish a legal, yet voluntary, foundation for environmentally conscious and ethically produced textiles.

The implementation and branding of Kasturi Cotton are steered by the Cotton Corporation of India (CCI) and the Cotton Textiles Export Promotion Council (TEXPROCIL), which both will play a crucial role in ensuring that the initiative aligns with the goals of quality, sustainability, and farmer empowerment every step of the way. TEXPROCIL is the responsible entity for the intricate process of branding, tracing, and certifying, ensuring that it adheres to stringent quality standards while overseeing the entire supply chain. The programme has been meticulously finalized, adhering to national standards and quality control measures, and is managed by a coordinated effort between various agencies, each responsible for different aspects of the production and certification process – *i.e.* audit, inspection, testing and certification entities.

The emphasis on sustainable and ethical practices is a key feature of the programme. This includes ensuring that cotton is packaged and labelled in accordance with existing Indian standards (IS 12171:2019), certifying consistent and reliable product quality. Each bale of cotton is marked with a unique QR code which is a decisive component of a traceability

[93] The Kasturi Cotton Bharat brand of cotton was announced by the Ministry of Textiles on the eve of World Cotton Day on 7 October 2023 and the linked digital platform launched within the following weeks. See Ministry of Textiles, *Union Textiles Minister Shri Piyush Goyal Launches Website of "Kasturi Cotton Bharat"*, 21 October 2023.

mechanism that, by the use of advanced blockchain technology, facilitates compliance with international standards and certifications. This guarantees complete transparency across the supply chain and, therefore, accountability of the players involved. The focus on sustainability extends beyond the traceability profile to include the use of sustainable farming techniques – spanning from the efficient use of water resources to reducing chemical fertilisers and pesticides – and responsible and ethical production practices throughout the supply chain, covering also packaging and labelling, to further reaffirm the commitment to quality, sustainability and transparency.

The registration process, which is tailored to assure that only fibres suitable for quality and sustainability obtain certification, begins with the submission of an application followed by a thorough review of the application, contract, and payment by TEXPROCIL to assess compliance with the programme's standards. Upon successful verification, the applicant obtains membership status and a Unique Registration Number for supply chain tracking. Cotton samples from each lot undergo testing at National Accreditation Board for Testing and Calibration Laboratories accredited labs to assess quality parameters. The results determine adherence to the program's quality standards. Approved cotton lots receive the Kasturi cotton brand label (Transaction Certificate), exclusively valid for the tested lot, allowing the use of the Kasturi cotton brand logo on relevant products.

The future of Kasturi Cotton depends on expanding its market reach, strengthening partnerships with international customers and innovating to meet the demands of the global textile industry. Positioned to drive growth across the cotton value chain, from farmers to fashion brands, Kasturi Cotton anticipates widespread adoption due to its superior quality and ethical production. By instilling a sense of responsibility within the industry, the programme is expected to promote sustainability in cotton farming and processing, paving the way for a greener future and helping India in its attempt to pioneer sustainable transition within the textile production on the global stage.

III. 2. Accelerating the sustainability revolution

Technology and investments are notoriously some of the most significant enablers of sustainability, hence the government's focus on sector-specific initiatives to foster green practices, innovation, and environmental responsibility within the textile value chain.

In a significant stride towards sustainable development, the Ministry of Textiles in India has launched the PM Mega Integrated Textile Region and Apparel (PM MITRA) Scheme[94], a visionary initiative that, while propelling the textile industry to new heights, places sustainability at the forefront of its goals.

The PM MITRA Parks Scheme is a groundbreaking endeavour dedicated to developing sustainable and world-class infrastructure to create an integrated textiles value chain, fostering environmental consciousness at every stage of production. The scheme prioritizes the development of infrastructure that incorporates eco-friendly technologies and sustainable practices – from energy-efficient machinery to waste reduction strategies –, thus minimizing the environmental footprint of textile production. PM MITRA Parks are envisioned to adopt a circular economy approach, promoting recycling, upcycling, and responsible waste management and, by incorporating renewable energy solutions, to reduce reliance on conventional energy sources.

The implementation of sustainable practices within PM MITRA Parks is expected to significantly reduce the carbon footprint and the water usage associated with textile manufacturing aligning with global efforts to combat climate change while preserving local ecosystems. The PM MITRA Parks Scheme[95] serves as a beacon for sustainable

[94]MINISTRY OF TEXTILES NOTIFICATION, October, 2021, F.No.20/1/2019-SITP, in https://texmin.gov.in/sites/default/files/PM_MITRA_Notification_0.pdf

[95] V.S. YADAV, A. MAJUMDAR, *Mitigating the barriers of industrial symbiosis for waste management: An integrated decision-making framework for the textile and clothing industry,* in Waste Management & Research, Volume 42, Issue 7, 2024, pp. 544-555.

development within India's textile industry, setting a precedent for environmentally conscious infrastructure that aligns with the nation's commitment to a greener future.

The Production Linked Incentive Scheme for Textiles[96], approved by Indian government, represents another pivotal step in aligning industrial growth with ecological sustainability. The PLI scheme places a significant emphasis on the production of eco-friendly textiles, particularly in the categories of MMF Apparel, MMF Fabrics, and Technical Textiles. By incentivizing manufacturers who adopt sustainable practices, the government seeks to usher in a new era of green textile production.

The PLI Scheme adopts a dual-part approach, catering different scales of industry players by means of different thresholds of investment and turnover. This inclusive strategy ensures that both large enterprises and smaller businesses can contribute to and benefit from sustainable textile manufacturing. The two-year gestation period under the scheme (FY. 2022-23 and FY. 2023-24) allows companies to gear up for sustainable production. Incentives will be provided to companies upon achieving threshold investment and turnover, followed by incremental turnover, thereby encouraging a steady transition towards green manufacturing practices.

With a strong focus on sustainable production processes, the PLI Scheme is poised to facilitate the reduction of the overall environmental footprint of the textile industry. From resource-efficient material sourcing to waste reduction measures, the scheme promotes the adoption of cleaner, greener production methods, so aligning with global efforts to integrate technology for sustainable outcomes. The selected applicants under the scheme have proposed substantial investments that are expected to couple economic growth with employment generation, demonstrating the symbiotic relationship between sustainability and economic prosperity.

[96] The scheme came into effect with its official notification in September 2021 and will offer incentives for a five-year timespan, ranging from financial year 2025 to financial year 2029-2030.

The initiatives above mentioned are the most striking examples of a broader reform that reflects a clear government interest[97] in the growth of the entire value chain with a strong focus on responsible production. The complex system of incentives, voluntary certification and support for innovation and development is, in a word, evidence of awareness. Awareness of the immense potential of sustainability and its immense economic return in the medium to long term.

It is therefore not surprising to hear the further announcement of a sector specific ESG Task Force, set up keeping in mind India's pledge to sustainability, and the proposal to map textile waste along the whole value chain, in the absence of a dedicated EPR system.

Nonetheless, only time will tell whether the awareness and initiatives taken will be enough to reverse the course of climate change.

[97] Under the Year-End- Review of Ministry of Textiles for 2023, many are the initiatives listed, including the National Technical Textile Mission, the Enhanced the Amended Technology Upgradation Fund Scheme, the Samarth Scheme for Sustainable Livelihoods, the Integrated Wool Development Programme etc.

Chapter III

The way forward

SUMMARY: I. The big picture; II. Misalignments; II. 1. The feasibility of self-regulation; III. Time horizons and the need for co-operation.

1. The big picture

The textile supply chain is perhaps the most atypical and yet fitting example of globalisation. Decisions made in European headquarters indeed can have far-reaching effects on the last tie of the supply chain on the other side of the world.

And this should be carefully kept in mind.

There is a global regulatory trend[98] that, with a view to protecting the planet as a whole, affects all sectors with a high environmental impact, including the world of fashion, particularly textiles.

[98] On the same note, *House Bill 2068* has been introduced in the US state of Washington, to enforce environmental accountability within the fashion industry. The Bill 2068 is shaped on New York State's *Fashion Sustainability and Social Accountability Bill*, which, hopefully, will be approved this year. Other examples might be the *California SB 253*, according to with business with more than $ 1 billion of annual revenue operating in the state of California have to report scope one through scope three emissions, and *Textile Recovery Act* of 2023, similarly introduced in California to ease the collecting, repairing and recycling of used textiles.

See C. CAMPBELL, *Fashion Forward: Emerging Sustainability Legislation Within the Fashion Industry*, in Fordham International Law Journal, 2024; R. J. LAZARUS, *The Making of Environmental Law*, The University of Chicago Press, 2023.

Fashion is on its way to becoming a highly regulated industry around the world, leaving behind the era of self-regulated sustainability for good.

All the jurisdictions examined are moving towards the adoption of new provisions covering the entire textile value chain – from product design to end-of-life management – which are attended to have a major impact on fashion stakeholders.

The measures analysed are tied by the *fil rouge* of sustainability and develop the themes of traceability – using blockchain and other technologies where possible –, transparency of sourcing and production along the supply chain – mainly through reporting –, and eco-design in a broad sense[99].

Though different in form and content, the Digital Product Passport, the online platform launched in China, and the Kasturi Cotton scheme share indeed the common goal of traceability and transparency along the value chain[100], by relying on tools such as blockchain and other advanced technologies.

[99] Greenwashing and marketing are high on consumer and regulatory agendas, with most of the claims of many fashion companies perceived as vague or misleading, as non-backed by any evidence. The new EU Green Claims Directive, as well as the draft guidelines on Environmental/Green Claims issued by the Advertising Standards Council of India in December 2023 are two examples of pieces of legislation addressing false environmental declarations.

[100] See also X. LOU, X. YINGJIAO, *Consumption of Sustainable Denim Products: The Contribution of Blockchain Certified Eco-Labels*, in Journal of Theoretical and Applied Electronic Commerce Research, 19, no. 1, 2024, pp. 396-411; L. ALVES, M. SÁ, E. CRUZ, T. ALVES, M. ALVES, J. OLIVEIRA, M, SANTOS, A.M. ROSADO DA CRUZ, *A Traceability Platform for Monitoring Environmental and Social Sustainability in the Textile and Clothing Value Chain: Towards a Digital Passport for Textiles and Clothing*, in Sustainability, Vol. 16, 2023.

Similarly, India's ESG reporting system – anchored in the Business Responsibility and Sustainability Reporting model, and the recent BRSR Core[101] – addresses the same needs.

Despite this substantial convergence of interests, it worths highlighting an area of evident misalignment.

Asian Governments' attention seems to be focused mainly on the manufacturing stage during which, of course, most environmental concerns arise.

The regulation of post-consumer waste management is apparently a particularly sensitive area for the two Asian giants.

So far, while the European Union is trying to solve the problem of waste management by amending the Waste Framework Directive[102], in the East several recycling programs have been implemented in recent years, showing an increasing awareness in this direction.

[101] It should be noted that the introduction of the BRSR Core aligns with European legislation, specifically the Corporate Sustainability Due Diligence Directive and the upcoming Corporate Sustainability Reporting Directive. See also M. SINGHANIA, N. SAINI, *Institutional framework of ESG disclosures: comparative analysis of developed and developing countries*, in Journal of Sustainable Finance & Investment, Volume 13, Issue 1, 2023, pp. 516–559.

[102] The revision of the WFD and the ESPR Regulation are both linked to the Waste Shipment Regulation. The former, by clarifying the definition of waste and reusable textiles, ensures that textile waste is only exported if there are adequate guarantees that the waste will be managed in an environmentally sound manner.

Regarding the ESPR Regulation, the compromise text is aligned with the text agreed on the Waste Shipment Regulation on penalties.

Yet, Asian legislators are silent on the issue and there has been no proposal for a law – neither an amendment to the existing legislation – on EPR covering textiles[103].

However, irrespective of the topics of regulatory interest, the attention paid to textile industry by policymakers is not uniform for intensity, state of advancement and concrete operational methods.

II. Misalignments

Legislators' approach is primarily driven by different pressures and motivations.

At the European level, under a growing societal pressure, the primary objective is to ensure the resilience and competitiveness of the textile industry – from the start of the production to post-consumer management – while staying within planetary boundaries.

The initiatives taken so far fully reflect this vision. Concrete evidence of this can be seen in EU's flagship ESPR Regulation – which still has to be voted on by the Parliament in one of the remaining plenary sessions before the end of the legislature, and then approved by the Council – as well as in the revision of the Waste Framework Directive and the corresponding attempts at domestic level to replicate Brussels' efforts in this area[104].

[103] In China, article 66 of the Law on the Prevention and Control of Environmental Pollution Caused by Solid Waste stipulates that an extended producer responsibility system shall be established for electrical and electronic products, lead storage batteries, and automotive traction batteries.

In India, to tackle the challenges of post-consumption waste, EPR started being implemented in a systemic way in 2017 for multiple product categories, taking the lead among the South Asian nations to chart out EPR regulation.

[104] The reference is to the Italian effort to introduce – along the lines already established by the French and Dutch legislators – an internal EPR Regime.

On the other hand, the reasons that pushed Eastern legislators down the path of circularity are in some ways different.

If the driving force behind the change in Europe – at least initially – was widespread social concern about the impact of irresponsible production on the environment, the Asian giants' shift can be ascribed to the political objectives of their respective governments.

Given the still limited awareness[105] of much of the consumer base, political leaders have seen the greening of the textile sector as an opportunity.

An opportunity to soothe a growing social distress over environmental disruption. It is no secret that reckless development models have caused incalculable damage to China's aquifers[106] and soils; on the contrary, it is less known that pollution has become a major cause of social discomfort. In addition, the race to a sustainable future is also strictly connected to China's aspirations to international leadership.

In India, instead, the decision to promote circularity and sustainability within the textile industry combines economic ambitions – above all, to increase the competitiveness at a regional level and to reposition production at a global level – with the undeniable need to reverse the course of the climate emergency[107].

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[105] However, studies show an increase in consumer awareness of sustainability issues, reflected in purchasing decision, particularly among younger consumers. *Q.v.* DAXUE CONSULTING, *The Future of sustainable fashion in China*, 2023; J. JIE, T. W. HOE, S. W. QIAN, *Fostering sustainability in China's textile industry. The role of education for sustainable development*, in Vis Sustain, Turin, 20, 2023.

[106] In China, a popular yet disturbing joke is that "*you can predict the 'it' colour for the season by looking at the colour of the river*" in K. WEBBER, *How Fast Fashion is Killing Rivers Worldwide*, ECOWATCH, 22 March 2017.

[107] The production of raw materials is particularly exposed climate emergency. For instance, cotton is very sensitive to both droughts and flooding and, in India, extensive rainfall and pest invasions have reduced its supply to the extent that the country began to import it.

The different motivations behind these decisions inevitably reflect both on the progress of reform projects and on the choice of instruments adopted to guide the transition.

The EU is at the forefront of pursuing a circular and climate-neutral economy, with growth decoupled from the consumption of limited resources[108]. The European legislator has been able indeed to move more quickly in the direction of a targeted, cross-sectoral initiative because of the regulatory framework already in place.

As said, the EU's textile vision is encapsulated in its Strategy for a Sustainable and Circular Textile. In the wake of the latter, numerous legislative initiatives have already been activated, variously in the form of proposals for directives or regulations, depending on the desired degree of harmonisation[109].

On the merit of the measures contained therein, mandatory measures seem to prevail so that any discretion in their adoption by Member States and, consequently, by industry players is limited or excluded altogether.

The scenario takes on different shades when looking towards the East.

Interventions in the textile sector are at an early stage and focus on both compulsory measures and voluntary instruments to encourage self-responsibility on the part of local economic players.

Nonetheless, what stands out seems to be the lack of a legislative and, above all, binding vision.

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[108] European Commission, *How is the EU making fashion more sustainable?*, 2022, in https://environment.ec.europa.eu/topics/circular-economy/reset-trend/how-eu-making-fashion-ustainable_en/

[109] See A. MALIK, G. LAFORTUNE, S. CARTER, M. LI, M. LENZEN, C. KROLL, *International spillover effects in the EU's textile supply chains: A global SDG assessment*, in Journal of Environmental Management, Volume 295, 2021, pp. 113037.

In China, the current legal framework on sustainability issues and textiles consists of a set of separate norms scattered in several laws, regulations, policy documents and industry norms, with not a specific legislation to address concerns in this area in a systematic, organised, and harmonised manner[110].

To the present day, the regulatory gap has emphasized the role of China National Textile and Apparel Council[111], which, to help meet China's dual carbon targets, is promoting the green transformation of the textile and apparel industry by exploring solutions for sustainable production and consumption.

To minimize the industry's environmental footprint, CNTAC has formulated a preliminary plan and divided the period up to 2030 into three phases. These include a spontaneous phase from 2019 to 2022, during which those companies – that are aware and have the capacities – have implemented carbon reduction measures spontaneously. This first stage will be followed, from 2023 to 2025, by an active stage, when CNTAC will guide most companies involved in the sector to actively take measures to reduce carbon emissions. During the marketization phase from 2026 to 2030, the overall sector is expected to reduce carbon emissions through market-based means.

[110] See again Y. XIE, *Sustainability and Fashion: From the Perspective of Chinese Law and Practice*, in *Fashion Law and Sustainability,* edited by M. DI GIULIO, The Thinking Watermill Bricks, DIKE Giuridica, 2023.

[111] China National Textile and Apparel Council (CNTAC) is the National Federation of all textiles related industries as well as a non-profit body formed on a voluntary basis, in which several textile industry associations and other economic entities are affiliated. The mission of the CNTAC is to carry out the national industrial policy and the functions authorised and entrusted by the government – in accordance with the Constitution, laws and regulations –, and to improve the industry's self-regulation system by actively guiding the sound development of China's textile and garment industry.

Over the past three years, CNTAC has guided and encouraged various stakeholders in the industry to take a step forward and accelerate their green transformation through advanced technologies, planning and management.

Similarly, India lacks a binding legal regime with a definitive legal framework and laws that should be formulated, enacted, and implemented to ensure that sustainable practices become a widespread reality in the industry[112].

Accordingly, the Parliamentary Committee has recently stressed the urge for a comprehensive National Textile Policy. The Committee has urged the Ministry of Textiles to formulate a comprehensive strategy, recognising the critical importance of aligning proactive and industry focused State Textile Policies[113] with a unified National Textile Strategy. The suggestions made by the Parliamentary Committee are aimed at strengthening the international competitiveness of the Indian textile industry while by combining industry-specific features of state textile policies with globally accepted best practices.

These recommendations have been outlined in the report of the Committee on Estimates 2023-24 on *Empowerment Through PM Mega Integrated Textile Region and Apparel PM*

[112] In the wake of the EU Strategy for Sustainable and Circular Textiles, the Indian Government has begun drafting policies to establish India as a global centre for sourcing sustainable and circular textiles and garments. The Textiles Ministry will start the mapping of the textile waste value chain in India with the aim of positioning the country as a global hub for circular textiles. To do so, the authorities want to establish textile recycling clusters and have floated a request for proposal to hire a consulting agency to this purpose. The study, to be carried out by a selected consulting agency, will provide an overview of the regulatory framework for circularity in key export destinations and competitor countries that could have an impact on India's textiles exports, according to the request for proposal.

[113] The last example is Integrated and Sustainable Textile Policy 2023-2028, issued by the Government of Maharashtra in June 2023 via governmental Resolution No. Policy 2023/C.R. 81/Tex-5.

MITRA Parks Scheme, and Revival Efforts For Sick Textile Units/PSUs Pertaining to the Ministry of Textiles.

The overarching objectives include promoting the growth of the country's textile sector and contributing to overall economic progress by formulating a sound National Textile Policy, expediting the revival of distressed textile units and exploring opportunities for private sector investment.

II.1. The feasibility of self-regulation

The absence of an organic regulatory framework has notoriously left room for the use of voluntary tools.

As for voluntary self-regulatory measures – such as eco-certification or voluntary standards –, they could be a good alternative to command-and-control regulation, and, sometimes, are seen as more efficient, flexible, and less time-consuming than mandatory norms[114].

Yet, the urgency of endemic and systemic change clearly requires[115] the strength and effectiveness of mandatory regulatory measures, properly enforced and, where necessary, backed up by appropriate sanctions.

Eco-certification and voluntary standards, by virtue of their nature, in fact refer to a limited target group and costly and burdensome procedures discourage entrepreneurs interested in such an investment.

Furthermore, the economic sacrifices made to apply for an eco-certification or adapt production to environmental standards do not always result in the expected competitive advantage on the market. This is often due to a lack of consumer awareness regarding the

[114] C. XU, H. CHENG, Z. LIAO, *Towards Sustainable Growth in the Textile Industry: A Case Study of Environmental Policy in China,* in Polish Journal of Environmental Studies, Volume 27, 2018, pp. 2327.

[115] S. KENT, *Fashion's Age of Self-Regulation Is Over*, in Business of Fashion, 2022.

intrinsic value of these instruments and the investments and efforts needed to implement them.

Thus, although voluntary instruments play a key role in the early stages of the sustainability transition, they tend to be weakened from the associated bureaucratic and economic burdens coming with them.

As result, they might be ineffective in achieving the public interest they claim to serve in the long run, unless complemented by a binding legal regime.

However, existing legislation often, even when compulsory, suffers from deficiencies which can take the form of a failure to monitor enforcement, inadequate or insufficient sanctions – thus undermining any deterrent effect – or a limited target audience.

Irrespective of the regulatory limits, the era of self-regulation by means of voluntary instruments seems to have come to a definitive close.

Between international instances and stringent environmental imperatives, the textile industry will, as already anticipated, become a sector characterised by a high level of regulations, leaving little or no room for measures whose compliance is left to the purely voluntary decision of the economic operators to whom they are addressed.

The data on progress in overall climate performance also confirms that there is still much to be done[116].

In both Asian countries, there is a clear improvement in the sector-related UN SDG goals and the gap with European countries is progressively narrowing. However, both the quality of legislation – and its subsequent implementation – and the pace at which the sustainable transition is pursued still leave room for enhancement.

[116] The Sustainable Development Report, under UN SDG 7 - *Affordable and clean energy*, still highlights significant challenges remaining and slow pace in improvements. Under UN SDG 12 - *Responsible consumption* and productions and UN SDG 13 - *Climate Action*, India performs slightly better than China.

III. Time horizons and the need for co-operation.

A final round of considerations seems to be appropriate.

There is one resource that is hardly taken into account and yet is on a par with the other planetary resources considered in the various regulatory interventions.

That is time. Time for the approval of reform projects, time for their implementation by the parties to whom the approved rules are addressed, time for these measures to have a positive impact on the planet.

Indeed, what emerges from the study of the existing regulatory and non-regulatory instruments in place is a sense of extreme and disturbing delay[117].

The European Commission wishes to have all the planned rules constraining fashion players to produce clothes in a more sustainable way in place by 2028. However, the adoption of the delegated acts to the Commission to implement the provisions of the ESPR Regulation is expected between 2027 and 2030, which will inevitably postpone the date at which businesses will be able to make concrete changes to their production. Similarly, the ban on the destruction of unsold items[118], confirmed by concerted text for textiles, apparel, and footwear, will enter into force two years later than the ESPR Regulation. Moreover, in all cases of legislation by means of Directive, additional time will be required for the necessary transposition by each Member State.

The situation is no better in the East, where, as mentioned above, a coherent and organic roadmap for greening the future of textiles is still lacking.

[117] M. CHARTER, L. SANCHEZ-MORENO, *Global policy covering sustainability in fashion and clothing: a review and implications*, in Accelerating sustainability in Fashion, Clothing and Textiles, Routledge, 2023.

[118] Established by the ESPR Regulation.

Essentially, the time frames outlined seem, if not unrealistic, at least over-optimistic, because they overlook the importance of a key resource, namely the time needed for implementation and adaptation to a new legislative scenario.

Given the general delays in the regulatory process, it is clear that – at least in the medium term – we will have to rely on the initiative and ethics of private players. On this note, the fashion industry is already going through a profound restructuring phase, involving not only the entire production chain, but also its *forma mentis*, which is as deeply rooted in the current corporate culture as it is in the minds of consumers[119].

Another key parameter to consider is the scale of the problems associated with textile production.

It should be kept in mind that the textile value chain knows no borders and involves and intertwines geographically distant but inextricably linked destinies[120] and agendas.

Consequently, greening the value chain requires a global effort that should be coordinated among all the stakeholders involved, primarily at the governmental level.

There are no designated, accessible, global structures to support coordination between policy makers, brands, and other key stakeholders on the crucial challenges of the transition to circularity, or to draw up and monitor roadmaps. It seems therefore urgent to create a coordination mechanism to provide cohesion and support the implementation of existing work, whilst encouraging other actors to join in and fill further gaps. The purpose of this coordination should be firstly to promote dialogue between stakeholders, define and monitor common priorities and plans, facilitate the development of data and decision support instruments to assess progress, and align existing actions on circularity. The aim

[119] In this vein, see S. JOSEPH, J. KYRIAKAKIS, *From soft law to hard law in business and human rights and the challenge of corporate power*, in Leiden Journal of International Law, 36, 2023, pp. 335 - 361.

[120] In fact, the textile value chain is also deeply connected to matters of high social impact, such as the defence of human right, the protection of environmental and social ecosystems in the vicinity of production sites, the provision of safe and healthy workplaces, gender equality and so on.

is not to replicate existing efforts, but rather to provide a forum for existing activities and to work together to fill gaps. Close coordination with existing initiatives will help maximize progress by recognising and integrating with existing conventional sustainability mechanisms[121].

In this scenario, the EU Strategy for Sustainable and Circular Textiles and the measures that will be adopted and implemented based on it could play a key role.

Indeed, from the moment of their entry into force, companies exporting clothing and apparel to the European Union will have to comply with legal standards of environmental sustainability.

Consequently, by driving the evolution towards more sustainable production and consumption in the Single Market, the European Union could be leading the way in forcing its commercial partners to embrace sustainable production.

The textile industry is a core sector for the economies of Asian countries, including India and China. In addition, the region is itself a major manufacturing hub[122] for several European fashion companies, and the decline in demand from European market[123] curbed the sector's growth during the COVID-19 pandemic.

[121] On the need for coordination both on a national and international level, see J. NIKAM, *Gaps, challenges and drivers for environmentally sustainable textile and garment manufacturing in India*, Stockholm Environment Institute, 2023, pp. 20; UNEP, *Sustainability and circularity in the textile value chain, A Global Roadmap*, 2023., pp. 14.

[122] The industry is experiencing a period of rapid growth, which is partly attributed to the intensified involvement in Southeast Asia steered by the EFTA–Singapore Free Trade Agreement and the EU–Vietnam Free Trade Agreement.

[123] The same reasoning can be applied to the lower demand from the US market.

Such considerations point out that the European Union's policies could have a significant impact on East Asian textile manufacturers, resulting in potential pressures on lawmakers in the East.

The new EU regulatory landscape is expected to create challenges and potential cost increases for the Indian and Chinese textile industries. In the absence of regulatory adaptation, companies will need to be proactive in adjusting to these upcoming regulations to safeguard exports.

The European Union, as mentioned above, has set 2030 as the target year for full circularity and will therefore require trading partners to comply with the different legislative parameters applying the principles of circularity, traceability, transparency, and reduction of the carbon footprint.

Chinese and Indian textile manufacturers who fail to adopt an adequate *modus operandi* may indeed find themselves in the spotlight for excessive use of hazardous chemicals, inappropriate use of water resources, excessive carbon footprint or use of non-recyclable materials. Circularity – and the need to preserve export levels – will therefore require significant changes to the sector's business models[124], as well as technological and process innovation.

While it may seem that Europe is creating a "*green wall*" against Asian textile products, this challenge may turn out to be a large-scale chance for growth.

The transformation required to meet EU standards could leave the region better prepared whether other developed markets adopt similar policies. Implementing green production practices would also affect positively the local environment and the quality of life of the productive areas, while opening new sustainable production and business opportunities. And this could attract more foreign investment from developed countries.

[124] On this latter note, it should be noted that all the reform projects are emphasizing the product aspect and not yet the business one.

In spite of the challenges arising from this new regulatory scenario, companies in the region are taking a proactive approach to them.

Nevertheless, opportunities for environmental progress depend not only on the will of economic players and their capabilities but also on other enabling factors, such as policy frameworks and infrastructure. Minimizing the negative impacts of textile production requires a systematic and endemic shift towards a circular economy. This transition should encompass green public procurement, eco-design, labelling and standards, and increased producer responsibility – which, as previously said, is still lacking altogether or, when existing, not addressing textile waste.

A further major challenge in the sustainability transformation of the Chinese and Indian textile industry lays in the inadequate knowledge and technical expertise in environmental sustainability[125]. To green textile and apparel industry, key projects need to invest in

[125] See H. HERBST, *The Price of Fashion: The Environmental Cost of the Textile Industry in China*, 45 Fordham International Law Journal, 907, 2022, pp. 947 – 958; A. WÓJCIK-KARPACZ, J. KARPACZ, P. BRZEZIŃSKI, A. PIETRUSZKA-ORTYL, B. ZIĘBICKI, *Barriers and Drivers for Changes in Circular Business Models in a Textile Recycling Sector: Results of Qualitative Empirical Research, in Energies*, 16, 2023; ILO, *Greening the sector Environmental initiatives and tools in the garment sector in Asia*, 2022, pp. 19-26.

research and development[126] as well as in education and training programmes to increase environmental sustainability expertise within the working force[127].

[126] In China, the construction of Shantou International Textile City was recently started in the province of Guangdong. The investment will include constructing a global textile procurement centre and a textile park. Furthermore, Guangdong and Xinjiang officially signed a cooperation agreement on building a comprehensive partnership in the cotton textile industry, which is meant to strengthen the cotton textile and apparel industry chain and structure. In August 2023, it was also released the full text of the *Actions for Building a Modern Textile Industrial System (2022-2035)*. The document focuses on actions aimed at promoting textile technological innovation thusly supporting industry progress, textile fashion upgrading, and green textile manufacturing. The actions will commence and harmonize regional textile value chains. Specific actions like in-depth integrated development of digitizing the textile industry are also included. The plan also concurs in creating a solid textile human resources basis for industry progress with the ultimate goal of establishing a modern textile industrial system in the whole the country.

[127] In this regard, some examples are provided in the Indian Ministry of Textiles' Year-End-Review for 2023. The National Technical Textile Mission (NTTM) launched by the government – and extended till 31 March 2026 with a sunset clause till 31 March 2028 – has research, innovation and development, market promotion and development, education, training and empowerment, and export promotion as its key pillars. The objective of the Mission is to develop the use of technical textiles in various flagship initiatives of the country, including strategic sectors. In the same vein, SAMARTH Scheme is a governmental program with a view to enhance the skills of the workforce in the textile sector, formulated under a broad skilling policy framework with the aspiration of offering prospect for adequate income. The scheme is due to be completed by March 2024. The objective of the scheme is to provide demand-driven and placement oriented National Skill Qualification Framework compliant skilling programmes to incentivise and complement the industry's efforts towards employment generation in the organised textile sector and allied sectors, thereby encompassing the whole value chain of textiles – spinning and weaving excluded – and also providing skilling and skill upgradation in the traditional textile sectors. The skilling programme under the scheme

The scale of the highlighted challenges shows clearly why the role of central institutions is crucial at this stage. Their timely intervention – hopefully through a comprehensive action plan backed up by binding measures – could make the difference and finally make the sustainability revolution come true.

Similarly, given the global dimension of the textile value chain, the EU's regulatory initiatives seem of paramount importance. Indeed, they could – and should – fuel new forms of international cooperation for sharing best practices and strategies for circularity, ensuring at the same time compliance with European standards by Asian producers and the enhancement of sustainability worldwide. In this context, international agreements could also encourage pivotal sustainable actions from all stakeholders to truly address the comprehensive environmental cost of the textile industry worldwide[128].

Heading towards a conclusion, the undeniable complexity of reshaping the textile industry and the challenges faced by the examined jurisdictions find their cornerstone in a mix of elements.

Progress lies in ongoing collaboration between the parties involved, in developing shared and consistent themes and initiatives, in adopting a vision to be realised within a realistic timeframe, in transforming each challenge into an opportunity for growth by making use of all the available legal instruments – prioritising the use of compulsory ones.

After all, the textile industry is exceptionally globalized with interconnected fashion industry stakeholders across the globe. Thus, to make effective the enforcement of stricter environmental regulations – and avoid unduly migration of production sites to countries

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will be implemented through Implementing Partners, including industry players and associations, state government agencies and sectoral organisations of the Ministry of Textiles.

[128] It is no coincidence that the ongoing negotiations between India and the European Union for a Free Trade Agreement have been given a new lease of life in recent months. Given the close partnership, the trade negotiations aim to, among others, pursue ambitious commitments on trade and sustainable development and to make sure the agreed rules are enforceable.

with less stringent standards –, the necessary actions must be complemented with the essential and concerted efforts of Governments, industry players and society.

All that remains is to await future – legislative and geopolitical – developments, being aware that our planet is already running out of resources and will no longer tolerate this indecision married with a lack of vision.

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