(Un)sustainable fashion: social equity, environmental pollution and consumer responsibility

AWARE

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APRIL 2021

ABSTRACT

Textile production and consumption patterns that lead to fast fashion are becoming issues of primary importance. Deregulating markets and offshoring the production in underdeveloped countries have worsened the control on the exploitation of both natural resources and human life. For this reason, a deeper understanding of what sustainable growth means, is necessary. This analysis explores the advancements and struggles of the industry of fashion, with reference to specific Sustainable Development Goals (SDGs), such as: SDG1 (no poverty), SDG5 (gender equality), SDG8 (decent work and economic growth), SDG12 (responsible consumption and production), SDG14 (life below water), and SDG 15 (life on land). Results highlight a lack of transparency and the inefficiency of the textile industry in effectively protecting workers from inequality and exploitation. Furthermore, more efforts are needed in better managing natural resources and reducing pollution. Additionally, the shortage of sustainability policies leads the sector to be mainly regulated by soft laws and voluntary agreements. Other than spurring the public debate, this study provides policymakers with some ideas to guide the fashion industry towards a sustainable and acceptable future.

INTRODUCTION

After twenty years from the first world conference on climate change, the United Nation Summit of 2012 set the new guidelines for a global sustainable strategy. This is summarised in 17 objectives, or Sustainable Development Goals (SDGs) within the Agenda 2030[1]. These goals simplify and diffuse into decisional processes of governments and economic actors the environmental considerations and the awareness of human conditions. In addition, they provide a consistent approach to assessing progress and compliance with the intentions of the sustainability strategy.

With the aim of determining advancements towards sustainability, this analysis examines the fashion industry and its progress in achieving specific SDGs. In addition, the most notable shortcomings and difficulties that impede the achievement of low social and environmental impact of production and consumption are considered.

First, we will consider the Sustainable Development Goals (SDGs) which aim to eradicate poverty (SDG1), promote gender equality (SDG5), and ensure economic growth along with decent working conditions (SDG8). Textile production is the basis of the entire value chain of the fashion industry and is particularly burdened by unstable and inequitable social conditions. Much of the garment manufacturing takes place in economically underdeveloped areas of the world, where it is difficult to protect workers from inequality, exploitation, and violence. Promoting transparency and improving gender inclusivity throughout the supply chain, therefore, will be crucial in the advancement towards a sustainable textile industry.

Second, this study will examine environmental issues related to terrestrial and marine biodiversity conditions. Specifically, the relationships between textile production and SDGs 14 and 15 on life underwater and life on land will be considered. In fact, the fashion production chain generates important repercussions in terms of deforestation, pollution, and resource exploitation. For this reason, it is essential to consider new systems of development that are now possible thanks to technological innovation, or the rediscovery of ancient production practices such as regenerative agriculture.

Finally, the vital role of the consumer in determining a sustainable fashion industry will be evaluated. Not only recent developments in demand and the characteristics of human needs will be considered, but it will also be investigated what determines the so-called fast fashion. Only a full understanding of the effects of consumerism will allow to define effective proposals for a future of fashion that is healthier, fairer, and less impactful on society and the environment.

[1] United Nation website https://unric.org/it/agenda-2030/ [accessed April 2021]

1. The textile sector: a social issue

In recent decades, progress and prosperity have been combined with globalisation and consumerism, giving rise to a frivolous, unregulated economy that pays little attention to the limits of human and environmental capital. In this sense, the textile sector is no less guilty. In fact, this industry has important social and environmental impacts, especially for the weak people involved in the production processes and located in the underdeveloped countries of the global south.

For this reason, it is clear the need to better understand the consequences of production activities that promote an increasingly fast and low-cost fashion. Large apparel multinationals, as well as small companies, are taking their first steps towards a sustainable value chain. However, these commitments will have to be more incisive if we want to promote a real development of the most disadvantaged social classes and a change in approaching environmental externalities of production.

In this section of the study, AWARE aims to contextualize the fashion industry in relation to its alignment with specific goals of the 2030 Agenda: overcoming poverty (SDG1), gender equality (SDG5) and decent work and economic growth (SDG8). The objective is to identify critical issues, along with opportunities for growth, virtuous examples, and effective tools for a true sustainable development of the sector.

1.1 Poverty, inequality, and worker's exploitation

In the textile industry, as in other sectors, the liberalization of markets together with the relocation of the production allowed economies to expand, creating opportunities and favoring trades. However, this has come at the expense of excessive fragmentation of the value chain in which inequality and exploitation widespread in poorer countries.

Globalization of textiles, in fact, seems to contribute to a polarization of production activities in underdeveloped countries, generally representing the global south. While these countries mainly rely on low price manufacturing and export, more advanced countries can count on services and infrastructure to exploit the benefits from consumption in more developed markets. The result is a fallacious and paradoxical connection between rich fashion buyers and poor workers, transporters, farmers, labourers, and textile manufacturers. As for Italian import and export flows, we can rely on some data form the World Bank[2] to partly understand some of the determinants of the problems discussed in this section.

- Positive trade balance and value inequality. Exports concerning textiles have a value of about 37 billion euros, against an import flow of 27 billion. This generates an important trade surplus of around 10 billion euros. This figure highlights the efficiency of the Italian textile activity in transforming imported materials, as well as showing the inequality of production and transformation activities. It should be noted that very often the former requires greater human capital, which is frequently inadequately remunerated.
- The dependencies of exporting countries. Even though craftsmanship is still widespread in our country, and small businesses make up an important part of the Italian fashion, raw materials and manufactured goods for clothing are mainly imported from third countries. In

[2] World Integrated Trade Solutions, https://wits.worldbank.org/about_wits.html [accessed March, 2021]

Italy, most of the primary textile products are imported from countries in Southeast Asia, the Middle East and Africa, such as: Indonesia Vietnam, Cambodia, Myanmar, Bangladesh, Sri Lanka, India, Turkey, Tunisia, Morocco, and Ethiopia. These data are in line with European import flows[3] and for most of these countries there is a clear dependence on the textile industry for exports to our country. The example of Bangladesh is striking, for which over 95% of the exports to Italy are textile related.

Despite the fact that these international exchanges favour the economic development of poorer countries, at the same time they spread important social issues, including the exploitation of labor and gender inequality. In fact, as highlighted in a European Parliament[4] briefing on textile sector working conditions, many workers are often exploited: forced to work long hours a day, without days off and without adequate compensation. In addition, workplaces are often unsafe, workers' bargaining power is weak, and trade unions are subject to intimidation and suppression.

The difficulty of effective control over the entire production chain, as well as the lack of interest of large brands operating in the fashion industry, has made possible the abuse of millions of people in poverty. Again, Bangladesh is a case in point with over 100 million citizens living on less than $5.50 a day[5], most of them employed in the fashion manufacturing sector.

According to the United Nations Industrial Development Report (UNIDO) in 2013[6], compared to global manufacturing values, average wages in the textile sector are 24 to 35 percent lower.

Finally, women, who make up the majority of the workforce in textiles, are often subjected to disadvantaged and unfair working conditions. According to the International Labor Organization (ILO), in the Asia Pacific region, more than 35 million women were employed in the apparel industry in 2016. Comparing their conditions with those of their colleagues, however, emerges a clear disparity against female workers. Women are often paid lower wages, advancing their careers within the company is harder, and are generally charged with the entire burden of managing and administering home and family. Unfortunately, such considerations cannot be limited to Southeast Asian countries alone, nor to developing countries. At present, in fact, the existence of patriarchy in modern society is a phenomenon that affects all states and all communities around the world.

These characteristics of the industry strongly call for a responsibility on the part of the large multinationals operating in the fashion industry, as well as governments and trade unions. However, despite the consequences of the exploitation of the human capital produced by the textile industry, it has nevertheless enabled the production of wealth in economically and socially disadvantaged countries. Furthermore, as will be seen in the following analysis, thanks to a greater awareness of consumers and companies in the fashion industry,are emerging realities increasingly oriented

[3] European Commission, 2017. Commission Staff Working Document. Sustainable garment value chains through EU development action.

[4] European Parliment, 2014. Workers'conditions in the textile and clothing sector: just an Asian affair? Issues at stake after the Rana Plaza tragedy.

[5] Data Bank of the World Bank, https://databank.worldbank.org/source/poverty-and-equity/Type/TABLE/preview/on [accessed March 2021]

[6] UNIDO, 2013. *Industrial Development Report 2013. Sustaining Employment Growth: The Role of Manufacturing and Structural Change.*

towards promoting social inclusion, reducing poverty and favoring gender equality along the supply chain.

1.2 Employment and economic growth

So far, the analysis has focused on the dynamics affecting the most relevant social development issues related to poverty, inequality, and gender equality in the textile industry. In this sense, in many underdeveloped countries of the global south, this economy still struggles to guarantee safe working conditions and equal opportunities, making its development incompatible with the most recent strategies of sustainable development.

However, it is precisely these circumstances that have allowed, through the maintenance of low labor costs, the expansion of outsourced production by large fashion brands. This has greatly favoured the development of the industry in countries also unable to achieve it with their own resources. As emerged in a recent report by UNCTAD (United Nations Conference on Trade and Development), for exporting countries, the textile industry is of fundamental importance in terms of internationalization and potential to attract foreign direct investment[7]. On the other hand, however, such a system can generate a certain dependence on foreign financial flows, as well as making the improvement of social conditions, with the accompanying increase in prices, difficult due to the easy flight of capital in the event of a rise in labor costs.

In many developing countries, even though wages are still inadequate when compared to international standards, the textile sector appears to provide a viable opportunity for millions of working men and women to lift themselves out of poverty[8]. Through new livelihoods for populations, it has been possible to reallocate human capital from the agro-industrial sector to a higher value-added sector. Table 1 helps to better understand the importance of the textile industry to some states by providing estimates of the labor force employed.

[7] United Nation Conference on Trade Development, 2020. World Investment Report 2020. International production beyond the pandemic.

[8] Textile Exchange, https://textilesforsdgs.org/sdgs/goals/8-decent-work-and-economic-growth/

Table 1: The textile workforce in emerging South East Asian countries. Through the presentation of data on the employed workforce, the table defines the importance of the textile sector in some developing countries in South East Asia. In addition, the percentages relating to female employment are shown, underlining the fundamental role of women for this sector.

Country	Reference year	Workforce employed (direct)	% female workforce
Bangladesh	2009	3.1 millions	54%
India	2008	35 millions	38%
Pakistan	2008	4.5 millions	30%
Sri-Lanka	2009	0.28 millions	80%
Vietnam	2009	2 millions	80%

***Source**: Lopez-Acevedo and Robertson (2012)*

While the macroeconomic effects may seem positive for some underdeveloped countries, it is desirable that recent national and international debates, along with new consumer demands, will renew interest on the part of governments, NGOs, and private entities in ensuring better working conditions and more adequate wages for those working in the textile manufacturing industry. Such measures are increasingly urgent to bring the sector in line with the latest sustainable development goals. In addition, there is an increasing need to move away from the manufacturing paradigm that favours economic and financial results over human and environmental conditions.

2. A complex system

As noted above, ethical, or social issues that characterize the textile industry have important repercussions on developing producer countries. Moreover, the difficulties generated by a complex and extremely wide supply chain, supported by multiple contracts and subcontracts, make it difficult to completely trace the product. In this sense, in addition to the problem of guaranteeing the final consumer a complete understanding of the product, interventions in favour of the weaker social classes involved in production are hindered in terms of wages, working conditions and fair treatment.

In the following sections, the concept of Tier and the main criticalities that distinguish the different levels of production will be analysed. Finally, we will consider the lack of an adequate regulatory framework capable of clearly and effectively regulating the entire production and supply chain of the textile industry.

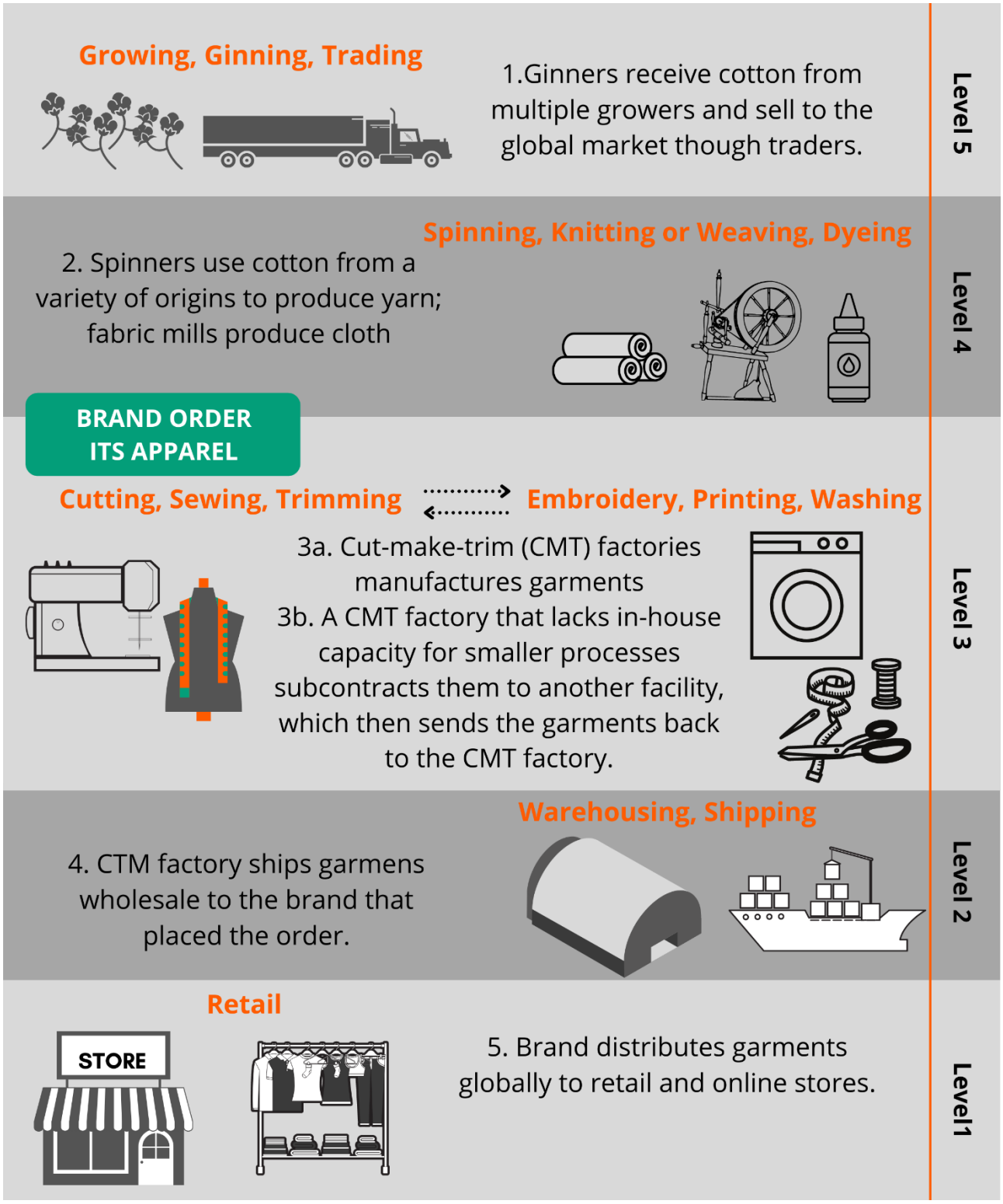
2.1 Beyond Tier 1

As already noted, when analysing the effects on employment in the textile industry, the globalization of markets and the specialization of producing countries has led many companies to delocalize part of their production to countries where labor is cheap. This has generated a dilation of the production chain, which has found itself divided into multiple levels involving many countries around the world. For example, a garment from the famous Spanish brand Zara travels across three continents before reaching the end consumer: textile fibres produced and purchased in Europe are shipped to Egypt for spinning, then to China for weaving. From here, the textile materials are shipped to Spain where they are dyed before the finished garment ready for distribution is completed in Morocco. The product returns again to Spain before being directly sold around the world[9]. Obviously, there is no univocal structure to define the interrelationships between subjects operating along the same supply chain and destined to converge in the product of one or more brands.

With reference to a given client company, the Tiers indicate the various levels based on which the supply chain is defined. These, in addition to defining the length of the production chain, also identify the progress of the production process. Tier 1 generally identifies those suppliers who have a direct relationship with the main firm, such as those commissioned to supply garments that perform storage and transport operations. In a cascading mechanism, the following Tiers are defined by the relationship between suppliers and sub-suppliers that follow one another along the production chain. In this way, Tier 2 identifies suppliers who have an indirect link with the commissioning brand and a direct link with the suppliers defined in the previous Tier, as in the case of companies involved in the garment finishing stages. This chain generally extends to Tiers 4 and 5, which include production phases such as spinning, weaving, dyeing, ginning and fibre culture. Figure 1 summarizes a typical structure for the textile sector, defining the different categories of production employed and a possible classification by tiers.

[9] Hope Katie, 2017. Has this dress been to more countries than you? https://www.bbc.com/news/business-39337204

Figure 1: The textile sector supply chain. The figure presents a common supply chain structure for the textile sector



Understandably, each of the supply tiers involves multiple companies, making the network of relationships between the economic agents involved extremely complex. In some cases, for large textile brands, the suppliers involved number in the thousands and are spread across dozens of

countries[10]. Therefore, tracking and monitoring the entire production chain can be particularly difficult and time and resource intensive.

Although in recent years there has been a growing commitment by major brands to map and monitor Tier 1 and Tier 2 suppliers, to promote truly sustainable production it is necessary to go further by identifying and regulating relationships with suppliers and subcontractors involved throughout the supply chain, especially those weaker and more distant Tiers.

As Thuy Nguyen of Patagonia says, "It is important to go beyond the first tier because in a lot of cases there is an even higher risk of worker abuse or exploitation as one gets further away from the finished product. Companies tend to focus most of their monitoring efforts at the first tier, which leaves suppliers in lower tiers less educated and aware of their social and environmental responsibilities and how to meet them"[11].

2.2 A limited regulatory framework

To date, in addition to the difficulties resulting from a fragmented and difficult to trace value chain, the textile industry lacks a coordinated approach among nations for a serious regulatory framework to promote sustainability. While the 2030 Agenda traces the path towards a multi-sectoral economic development which cares for the needs of people and the environment, the fashion industry remains mostly regulated by the so-called soft laws. These laws represent an instrument of cooperation that is not legally binding, or whose regulatory force is less than traditional legislation[12]. Some soft laws are identifiable in codes of conduct, voluntary sustainability standards, conventions, resolutions, manifestos, principles, and declarations.

Globally, the issues related to workers' rights, working conditions, and gender equality are regulated, partially, by the UN Universal Declaration of Human Rights[13] and numerous ILO conventions (see Table 2).

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[10] J. Safra Sarasin Sustainable Investment Research,2014. Supply Chains in the Clothing Industry - A House of Cards?! A report on the opportunities and risks in the supply chains of textile and apparel companies. https://www.eticanews.it/wp-content/uploads/2014/09/Report-Bank-J-Safra-Sarasin-Supply-Chains-in-the-Clothing-Industry.pdf

[11] *Delisio E., 2016. Making garment industry supply chains measure up. https://www.reutersevents.com/sustainability/making-garment-industry-supply-chains-measure*

[12] OECD. https://www.oecd.org/gov/regulatory-policy/irc10.htm [consultato in aprile 2021]

[13] United Nations, 1948. Universal declaration of Human Rights (Italian version). https://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/itn.pdf

Table 2: ILO Fundamental Conventions. The table summarises the 8 core conventions recognised by the International Labour Organisation to govern safety at work and fair working conditions.

The Fundamental Conventions of the International Labor Organization
C29 - Forced Labor Convention, 1930
C87 - Convention on Freedom of Association and Protection of the Right to Organize, 1948
C98 - Convention on the Right to Organize and Collective Bargaining, 1949
C100 - Equal Remuneration Convention, 1951
C105 - Abolition of Forced Labour Convention, 1957
C111 - Discrimination (Employment and Occupation) Convention, 1958
C138 - Minimum Age Convention, 1973
C182 - Worst Forms of Child Labour Convention, 1999

***Source**: International Labor Organization's website (www.ilo.org)*

In Italy, however, the Manifesto for Sustainability in Italian Fashion[14]deserves some attention. Among its principles, the Manifesto states the need to protect workers from any violation of social rights, both in the selection of raw materials and in the processing and distribution of products. Moreover, Italy is the first country for the number of companies that have adopted an important voluntary sustainability standard, the SA8000[15]. This certification is amongst the most recognised worldwide for the regulation and protection of human rights and includes issues such as: forced labor, health and safety in the workplace, freedom of association, race and gender discrimination, child labor and fair remuneration[16]. Finally, since January 2021, Italy is also the first country to ratify and accept the ILO Convention No. 190 on the Elimination of Violence and Harassment in the Workplace[17].

[14] Camera nazionale per la moda italiana, 2012. Manifesto della sostenibilità per la moda italiana. https://www.cameramoda.it/media/pdf/manifesto_sostenibilita_it.pdf

[15] Santos G., Murmura F. e Bravi L. (2017). SA 8000 as a Tool for a Sustainable Development Strategy. *Corporate Social Responsibility and Environmental Management. https://doi.org/10.1002/csr.1442*

[16] Social Accountability International. SA800® Standard. https://sa-intl.org/programs/sa8000/

[17] Abiti puliti, 2021. 1 lavoratrice su 10 vittima di violenze. La ratifica della C190 finalmente una buona notizia. http://www.abitipuliti.org/accesso-alla-giustizia/1-lavoratrice-su-10-vittima-di-violenze-la-ratifica-della-c190-finalmente-una-buona-notizia/

While these instruments depict the progress of a socially sustainable textile supply chain, the need for serious national and international legislative intervention persists. It is only through stringent regulation, together with collaboration between states, that it will be possible to guarantee effective control and real application of the rules aimed at ensuring better living conditions for the most disadvantaged working classes, without abuse, violence, and discrimination.

3. Fashion that promotes social conditions

Sustainability Goals 1 and 8 aim to support, among other issues, pro-poor development strategies and gender equality[18], as well as the protection of labor and personal rights, by acting on the reduction of slavery, equal opportunities, and safe and secure work environments[19].

While governments are asked to regulate production and trade practices more stringently, private companies must engage in the definition of constructive capitalism, capable of using economic activity as a force for social change, to achieve these goals. Two fundamental sustainable development processes for the fashion industry are analysed below: the promotion of transparency and the empowerment of women.

3.1 Towards a transparent and sustainable supply chain

Since the tragic event of 2013, in which over a thousand textile workers lost their lives in the collapse of the Rana Plaza production complex (Bangladesh), the concern for transparency and traceability of the operations of major fashion brands has gained new importance.

Since that dramatic event, it has become apparent that major fashion brands have failed to communicate the true origin of their products to their consumers, as well as the inability of some companies to truly know the components of their supply chain, as seen in section 2 of this study. Since then, numerous initiatives have followed to increase understanding of the textile supply chain, providing large companies with new tools for monitoring and control. Of particular interest among these is the Transparency Index[20] promoted by the NGO Fashion Revolution. This index uses a multitude of indicators to determine the social and environmental impacts of production. This promotes transparency, understood as the credible, inclusive, and comparable disclosure of information and data related to the supply chain, production practices and treatment of workers, communities, and the environment[21].

In addition to providing a positive approach to the way business is done, clearly disseminating information, which until a few years ago was kept secret to maintain competitive advantage, can ensure better economic performance through increased market and consumer confidence. The positive effects include greater ease in identifying unauthorised subcontracting or sub-suppliers, access to more complete and reliable data and information, the creation of stronger collaborations,

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[18] Agenzia per la Coesione Territoriale. Agenda 2030 per lo sviluppo sostenibile. https://www.agenziacoesione.gov.it/comunicazione/agenda-2030-per-lo-sviluppo-sostenibile/

[19] *Ibid.*

[20] FASHION REVOLUTION, 2020. Fashion transparency index 2020 Edition. A review of 250 of the biggest global fashion brands and retailers ranked according to how much they disclose about their social and environmental policies, practices and impacts.

[21] *Ibid.*

easier identification of inefficiencies, greater ease in meeting the requirements of environmental and social regulations, and the possibility of securing larger market shares[22].

Increasing transparency along the supply chain is therefore crucial as well as an opportunity for the sustainable transformation of the fashion industry. Thanks to a transparent production chain, in fact, it will be possible to guarantee the emancipation and social growth of those vulnerable people who are currently exploited, controlled, and forced into poverty. Finally, in addition to ensuring equal and fair social opportunities, a transparent production chain can ensure a more effective control over the exploitation of natural resources and environmental pollution produced by the production activity, another fundamental element for a sustainable development of the textile industry.

3.2 Women: an opportunity for a sustainable industry and society

In this analysis we have already highlighted the challenges generated by the conditions to which women employed in the textile and fashion industry are often subjected. Especially in the global south, it has been seen that women contribute considerably to the workforce of the textile industry. However, they are often exposed to poor working conditions, marked by wage inequity, exploitation, discrimination, harassment, and violence in the workplace. For many years, this has allowed manufacturing companies and big fashion brands to achieve better economic results due to lower costs, at the expense of workers' social conditions and compliance with environmental standards[23].

Yet, the social and economic emancipation of women, besides being desirable for a fair, solidarity-based, and inclusive future, also represents a real opportunity for sustainable development for the fashion industry itself. Some studies, in fact, prove how gender diversity and greater inclusion of women produce benefits for companies, ensuring a greater ability to innovate and improving economic results[24]. It is no coincidence that there is an increasing involvement of women in the definition of sustainable development strategies and product design[25].

In Italy, as we have already seen with the approval of Convention n.190 promoted by the International Labor Organization, important steps forward are being taken regarding the protection of women in the workplace and there is an increasing interest in understanding and removing gender inequalities. Despite this, however, true empowerment of women does not require workplace protection alone or a fair amount of strategic corporate participation. What women need today is full recognition, not only at the economic level, but also at the public and political levels, to ensure full sustainable development of the economy and society as a whole.

In conclusion, there are several aspects of the fashion industry that need a radical overhaul. For a sustainable development strategy, it will be fundamental to improve the conditions of workers through greater transparency in the supply chain. In addition, it will be necessary to promote

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[22] Ditty S., Lovejoy I e Somers S., 2020. Out of Sight: A call for transparency from field to fabric. FASHION REVOLUTION.

[23] FASHION REVOLUTION, 2015. Exploitation or emancipation? Women workers in the garment industry. https://www.fashionrevolution.org/exploitation-or-emancipation-women-workers-in-the-garment-industry/

[24] https://textileexchange.org/sdg-mapping-by-industry-initiative/

[25] Zahid U. e Kamarudin Z. (2019). The role of women in the field of textile design towards development of Pakistani textile industry. *International Journal for Studies on Children, Women, Elderly and Disabled.*

fairness, solidarity, and security especially in the most distant levels of the supply chain. However, solving social issues alone will not be enough. As will be better understood later in this analysis, fashion companies will have to become increasingly aware of and responsible for the environmental impacts caused by their economic activities. Finally, it will be essential to guide consumers towards better choices, in accordance with their needs and the dynamics of demand.

4. The textile sector: a look at the current legislation

According to 2021 figures provided by the European Parliament, the textile and fashion industry is responsible for about 20% of global water pollution and about one third of microplastics in the oceans[26]. This is partly caused by the intensive use of natural resources and the dispersion of toxic substances that have a negative impact on the environment, water resources and marine and terrestrial biodiversity. Institutional governmental authorities and NGOs have made major contributions to bring the textile and fashion industry into line with the goals of the 2030 Agenda. This section examines some of the main international and European regulations and certifications related to the pursuit of SDGs 14 (Life Below Water) and 15 (Life on Land).

4.1 SDG 14: Life under water

Protecting the oceans, seas and water resources represents the 14th United Nations Sustainable Development Goal for 2030. Marine biodiversity is the most at risk resource given the current water pollution and the lack of attention on protecting the ecosystem in water basins.
In this context, the textile industry has a strong negative impact on marine and ocean wildlife. According to the most recent data, the global water consumption of the fashion industry amounts to about 79 trillion litres per year[27], in addition to the release of microfibres and microplastics produced during the life cycle of garments, from the production and treatment of raw materials to the dyeing and washing process. Over the last decades, the international and European community has been committed to developing and implementing regulations for sustainable development in the field of fashion in line with the 2030 Agenda.

On a global level, environmental certifications applied to the textile industry are extremely important. They play an essential role in promoting less use of harmful chemicals during the life cycle of garments. Among several certifications, it is crucial to mention the Bluesign[28], that is, a voluntary certification that has laid the foundations for an eco-friendly and ethical development of the textile sector. This recognition focuses on several sustainability actions including reducing water consumption and toxic substances that adversely affect marine life, ocean and sea acidity levels and the water's capacity to absorb carbon dioxide.

[26] Parlamento Europeo, 2021. L'impatto della produzione e dei rifiuti tessili sull'ambiente.
[27] Niinimäki, K. [et al.], 2020. The Environmental Price of Fast Fashion.
[28] Bluesign - solutions and services for a sustainable textile industry. www.bluesign.com. Bluesign - solutions and services for a sustainable textile industry. www.bluesign.com.

A more recent certification is the Global Organic Textile Standard (GOTS)[29]. It is promoted by a non-profit organisation, namely the Textile Exchange, aimed at supporting organic farming and the environmentally sustainable production of textile fibres. GOTS also allows companies to monitor their consumption of water and toxic substances, limiting their volumes or even banning their use. In addition to reducing environmental impacts, compliance with the certification enables companies to improve their transparency indexes and loyalty to consumers, as well as to achieve better economic performance and more market shares[30].

On the other hand, considering the European Union, there are several regulations promoting the transition towards a more sustainable code of conduct for the textile industry.
Among the most significant is the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation, whose regulatory basis is groundedon the Bluesign certification. Approved in 2006 by the EU Member States and in force since 2007, Regulation (EC) No 1907/2006 established an Agency to monitor the use of chemicals[31]. It is aimed at the entire industrial sector and provides for closer cooperation between authorities and companies on the one hand, and greater awareness and responsibility on the part of society on the other. The aim is to reduce the use of harmful substances or to replace them with less dangerous substances than those currently used in the production of textile fibres, but also released during textile production or found in clothing, textiles and footwear.
Thanks to REACH Regulation's recent updates, many substances in textiles considered carcinogenic, mutagenic and toxic[32] have been reduced and will no longer be on the market from 2020. Monitoring of companies' compliance with these restrictions is carried out by the European Chemical Agency[33]. In order to ensure sustainable development in line with the objectives of the 2030 Agenda, the REACH legislation requires compliance not only by European companies, but also by their trading partners.

Further legislation to focus on is Directive 2019/904 of the European Parliament and of the Council for the protection of water resources. This legislation refers to plastics and harmful substances released into water. Although it does not directly mention microplastics released during the whole life cycle of clothing, they are mentioned because of the high percentage of water waste they represent[34].

At national level, as seen with regard to social issues (see section 2.2), there is no clear legislation linking the fashion sector to the pursuit of Goal 14.

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[29] Global Organic Textile Standard. global-standard.org.
[30] Cikis, 2021. Certificazione GOTS: cos'è e perchè sceglierla.
[31] Gazzetta ufficiale dell'Unione europea, 2007. Regolamento (CE) n. 1907/2006 del Parlamento Europeo e del Consiglio.
[32] These include cadmium, lead and benzene.
[33] Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2019. Sostanze Chimiche Ambiente e Salute.
[34] Direttiva (UE) 2019/904.

According to the 2020 ASVIS report[35], indices related to the protection and conservation of marine resources mainly concern fishing activities and fish stocks. However, there are several initiatives undertaken by textile companies to promote sustainable production processes in line with the requirements of Objective 14. As will be observed in the following section (see section 2), the main efforts are aimed at reducing water consumption, microplastics spilled into watersheds and the acidity indices of seas and oceans. These issues will be discussed in more detail in the section on solutions to the critical issues of the textile and fashion sector in relation to the 2030 Agenda (see section 3).

4.2 SDG 15: Life on Earth

The commitment at international and European level focuses not only on the protection of water resources, but also on the respect and safeguard of the soil, through the implementation of measures implying the reduction of harmful substances, the intensive consumption of natural resources for the cultivation of textile fibres and deforestation processes.
Firstly, it is important to mention the event "Forests for Fashion - Fashion for Forests[36]", organised in 2014 by the United Nations Economic Commission for Europe (UNECE) in collaboration with the Food and Agriculture Organisation of the United Nations (FAO) in order to promote the preservation of forests and a more sustainable production of fibres and raw materials needed for the textile industry.

As far as environmental certifications for the fashion industry related to the problem of deforestation are concerned, an important position is taken by the documentation developed by the NGO Forest Stewardship Council (FSC). This is a voluntary and independent certification, whose standards mainly aim to halt deforestation processes at international level and, consequently, to ensure greater protection of the soil, in line with the pursuit of Sustainable Development Goal 15 (Life on Earth). The certification is awarded to companies in the fashion industry that promote conscious and environmentally sustainable forest management for fibre production.
The certification is awarded to companies in the fashion industry that promote environmentally conscious and sustainable forest management for the production of cellulose-based textile fibres, combating intensive and harmful exploitation.
Environmental protection and the pursuit of SDG 15 are not limited to soil and forest protection. Animal welfare certifications play an important role. In addition to opposing the use of chemicals that are harmful to biodiversity, the above-mentioned certifications promote a reduction in the use of raw materials of animal origin, such as leather, wool.

Within this context, the work of the non-profit organisation People for the Ethical Treatment of Animals (PETA)[37] is significant in the field of textiles, especially concerning the fight against animal abuse and the preservation of habitats. The Association aims to know the origin of the materials

[35] Rapporto ASviS, 2020.
[36] UNECE, 2017. Forest for Fashion.
[37] The People for the Ethical Treatment of Animals (PETA).

used by the fashion industry, so that consumers can be aware that animal rights are not violated and that toxic substances such as pyrethroids[38] are not involved during the production processes of raw materials. In Italy there is still no physical office of the association and the use of the brand is also rather limited, although there are several manufacturers of certified vegan clothes. While in Italy this certification is struggling to become widespread, it is becoming increasingly common in other European countries. The PETA, along with the Animal Free Fashion, represents the main certification supporting sustainable textile production using alternative materials to animal ones, promoting cruelty-free practices. The exploitation of livestock for leather production, the manufacture and transport of garments and the use of chemicals are directly linked to the process of biodiversity loss through the use of chemicals. Therefore, especially for the textile and fashion industry, it is necessary to incentivise companies to design sustainable lines that respect responsibility certifications and promote ethical production.

With regard to fashion sustainability certifications, an all-Italian example is given by the Made Green in Italy project, that is a voluntary national scheme set up by Law 221/2015[39] then defined more accurately by Decree 56/2018[40] of the then Ministry of the Environment and Protection of Land and Sea[41]. It is a label closely linked to an assessment scheme to identify those products that, in addition to meeting the requirements of Made in Italy, comply with sustainability parameters on the basis of a national reference. For the assessment, the Product Environmental Footprint (PEF) methodology is applied. This makes it possible to calculate the impact generated for each phase of the product's life cycle and which has been widely accepted at European level. It is clear that this is an effective tool for communicating to consumers the degree of sustainability followed in the production processes, which is extremely important today, especially in the case of the textile and fashion industries.

5. Critical issues

The issues regarding Goal 14 (Life Below Water) and Goal 15 (Life on Land) are mainly related to excessive water consumption during the life cycle of garments, pollution caused by microplastics released during production, processing, washing and disposal of garments, intensive agriculture for growing textile fibres and deforestation. These will be analysed later in this section as they represent major constraints to the pursuit of SDGs 14 and 15.

[38] Pyrethroids are synthetic analogues of pyrethrins, of plant origin. These insecticides are often used on cotton and wheat plantations and are toxic mainly to bees and fish.

[39] Ministero della Transizione Ecologica. Made Green in Italy. https://www.minambiente.it/pagina/made-green-italy.

[40] Ministero dell'Ambiente e della Tutela del territorio e del mare. Decreto 21 marzo 2018, n. 56. Gazzetta Ufficiale.

[41] Currently, it is the Ministry of Ecological Transition.

5.1 Resource depletion and watershed pollution

The problem of excessive water consumption that characterises the life cycle of garments is one of the major issues in the fashion and textile industries. According to 2019 data from the European Environment Agency (EEA), the volume of water used in these sectors in Europe was around 104 cubic metres per person[42]. Since Europe's population is about 746 million, the figure reaches about 80 billion or about one fifth of the world's water use. This number is even more alarming if we consider that the production of just two garments, for example a t-shirt and jeans, requires a total water consumption of about 12,200 litres, of which 2,700 for the former and 9,500 for the latter[43]. Within the framework of the so-called fast fashion, the above data increases exponentially as the garments produced have a very short lifespan. Indeed, disposable fashion is characterised by a lack of attention to the quality of the materials used and a failure to comply with environmental regulations to protect water and soil. Such a strategy has made the textile sector the second most polluting industry in the world in terms of energy consumption and exploitation of natural resources[44]. As will be explained below, cotton and polyester are among the most widely used fibers. The way in which the former is produced causes significant environmental and social damage, while the latter's origin in oil makes it non-biodegradable and non-recyclable. Both pillars of production related to fast fashion are therefore extremely polluting, both during the production process and over the life of the garment, and for disposal. Water consumption involves the entire life cycle of garments, including treatment and washing. However, the most significant volumes are employed to obtain the raw materials needed to start the production. Indeed, the cultivation of natural textile fibres such as cotton involves a water use of around 11,000 litres[45].
Moreover, by considering the stages which follow fibre production, such as washing clothes by hand or in the washing machine, these figures rise even further. On average, 5 kg of clothes require around 110 litres of water.

Finally, another critical issue that arises with regard to the use of water resources is microplastics. The organisms that live in the oceans ingest this waste, threatening the balance of the entire marine ecosystem. In a household, for example, about 700,000 microplastics[46] are released during a washing machine wash, which are harmful to water and the environment.
Furthermore, according to 2020 figures provided by the European Parliament, globally the textile industry produces about 500,000 tonnes of them in a year, corresponding to about 35%[47] of the plastic waste released into the world's watersheds or 51 trillion[48] tonnes. They are small plastic particles of less than 5 mm in diameter. In the textile sector, they are released during the washing

[42] European Environment Agency, 2019. Textiles in Europe's circular economy.
[43] European Parliament, 2020. The impact of textile production and waste on the environment.
[44] WWF, 2017. Changing fashion: The clothing and textile industry at the brink of radical transformation.
[45] Santo S., 2011. Realizzare una t-shirt di cotone consuma 2.700 litri d'acqua, GreenStyle.
[46] Zambrano M. [et al.], 2019. Microfibers generated from the laundering of cotton, rayon and polyester based fabrics and their aquatic biodegradation. Marine Pollution Bulletin.
[47] European Parliament, 2020.
[48] Enciclopedia Treccani.

of garments made of synthetic fibres, i.e. composed exclusively of chemical materials such as polyester, nylon or acrylic.

The micro-particles separate from the garments into waste water[49], however, because of their size they are not filtered out during industrial water purification processes to remove contaminants. This leads to their dispersion into the seas and oceans with important consequences for marine biodiversity and water purity indices.

5.2 Intensive cultivation and deforestation

Intensive cultivation and the use of harmful substances related to the textile and fashion industry are among the main causes of soil pollution[50]. Land exploitation comes mainly from non-European countries and, as seen above, from the cultivation of cotton. Furthermore, there is the problem of deforestation for the production of cellulose-based textile fibres such as viscose, rayon, modal or lyocell, whose production has been increasing even though they are not widely used in the sector, which results in the destruction of centuries-old endangered forests.
The ever-increasing use of harmful substances to combat contamination of plantations has a negative impact on soil authenticity indices and biodiversity. In fact, the textile sector uses around fifteen thousand types of chemical agents for fibre production[51]. Data show that the cultivation of cotton, the main natural fibre, uses 6% of the total chemicals produced internationally. The highest values are recorded in countries such as India, Brazil and China[52]. These are the areas with the largest textile fibre plantations,, where the largest quantities of pesticides and herbicides are used[53]. Cotton, as the most widely used natural fabric in the textile industry, holds the unfortunate record for the number of chemicals used in its cultivation, which are dispersed in the soil and cause severe climate and soil pollution, as well as poisoning of groundwater and local biodiversity[54].

Another fabric responsible for global warming and the lack of sustainability in the fashion world is wool. The harmfulness of animal textiles is directly linked to the intensive rearing of animals for slaughter, which is also used in the production of textiles. Natural fibres that are not extremely harmful to the environment are linen and hemp, both because they are used less than cotton and wool and because the use of harmful substances is very limited compared to the previous cases.
Deforestation is also closely linked to the world of fashion, especially in countries such as Brazil and Paraguay, since the practice of clearing entire areas of forest to make room for grazing animals

[49] According to the definition of ARPA Lombardia, wastewater is "water used in human activities, whether domestic, industrial or agricultural, which for this reason contains organic and inorganic substances that may be harmful to health and the environment" (Agenzia Regionale per la Protezione dell'Ambiente, ARPA).
[50] European Environment Agency, 2021. Textiles in Europe's circular economy.
[51] Fontana A., 2019. Il ruolo del cotone nel processo di evoluzione economica dei principali Paesi produttori nello scenario Asiatico: un'analisi di lungo periodo. Università Ca' Foscari Venezia.
[52] Fontana A., 2019. Il ruolo del cotone nel processo di evoluzione economica dei principali Paesi produttori nello scenario Asiatico: un'analisi di lungo periodo. Università Ca' Foscari Venezia.
[53] Composto chimico utilizzato per liberare le colture da piante infestanti (Enciclopedia Treccani).
[54] Niinimäki K. [et al.], 2020. The Environmental Price of Fast Fashion.

destined for the food and tanning industries is widespread. In the last 30 years, 420 million hectares have been deforested, which is about the size of the entire European Union. Deforestation in the Amazon forest is also linked to the same economic needs and exploitation by the textile industry. and exploitation by the textile and food industries. This practice endangers the so-called green lungs of the world, negatively affecting climate balances, land and marine and marine habitats.
It is therefore clear that the textile and fashion industry is primarily responsible for global pollution and the underdevelopment of certain geographical areas. It is necessary to reflect on these issues and rethink the approaches and practices of the garment industry in a more sustainable way. The SDGs and the political and social focus are a huge step forward, but they need to be followed by concrete policies. The next section will focus on the tools available to counteract the negative impact described above.

6. How to act?

There are many initiatives and good practices implemented at national and international level to address SDGs 14 and 15. Many companies, including some belonging to large fast fashion chains, are progressively taking an interest in and committing to designing products with more sustainable packaging, reducing emissions during production, improving the quality of materials used and implementing more ethical production processes.

However, it is crucial to recognise which behaviours represent real change to distinguish genuine applications of sustainability from greenwashing practices. This term is a neologism for behaviours, or strategic activities, that lead people to believe that a company is more committed to environmental protection than it actually is[55].

In the following paragraphs we have chosen to analyse several solutions already being applied by the companies mentioned:

- organic and regenerative agriculture, which aims to protect and reconstitute forests and reduce and the reduction of CO2 emissions (Gucci[56]);
- vegetable tanning of leather to replace traditional tanning, as its chemical-biological properties facilitate the disposal of garments and reduce deforestation for the creation of livestock farms (Consorzio Vera Pelle Conciata al Vegetale[57]);
- the use of ecological textile fibres such as organic cotton, produced with respect for the soil, biodiversity and people, and grown without the use of chemical agents that can create a negative impact on water and the atmosphere (Becotton[58]);

[55] Definition of 'greenwashing' from Cambridge Dictionary. https://dictionary.cambridge.org/it/dizionario/inglese/greenwashing.
[56] Gucci. https://www.gucci.com/it.
[57] Consorzio Vera Pelle Italiana Conciata al Vegetale. https://www.pellealvegetale.it/.
[58] Filiera Becotton. https://becotton.com/la-filiera-becotton.

6.1 Organic and regenerative agriculture

The practice of organic and regenerative agriculture (AOR) is defined as "a theoretical-practical discipline that draws on different agricultural approaches and experiences that have spanned the last and current centuries, combining traditional practices with modern scientific knowledge[59]". The focal point on which the work of this school is based is the term "regeneration", reiterated in the Charter of Fundamental Principles and Values. The latter includes the following points: regenerating the soil; regenerating ecosystems and biodiversity; regenerating relationships between living beings; regenerating knowledge[60].

Its objectives go beyond those of organic farming, as it does not stop at the agricultural sector alone but encompasses wider areas of action, such as respect for the dignity of people and animals ,the sharing of knowledge as an asset and the sharing of knowledge as a common good of mankind. The techniques of AOR, today intertwined with the best agronomic practices and the most innovative scientific knowledge originate in the ancient knowledge of the Latin American lands and were collected, studied and disseminated by Jairo Restrepo Rivera, a Colombian agronomist and member of the MasHumus network. The latter includes experts in organic production who are committed to supporting the work of small farmers. In Italy, the initiative was taken up by Matteo Mancini of Deafal[61] an NGO based in Milan which, through the work of researchers, assists local farms in the area. Over the past ten years, the organisation has trained and supported more than 3,000 producers, who today successfully apply the practices developed by the Colombian agronomist.
Currently, the AOR is a model of agriculture that can be applied locally and represents an extremely sustainable model, because it frees small producers from the use of harmful and polluting chemicals and pollutants, guarantees the dynamism and diversity of crops and defends peasant agriculture in developing areas.

Against this background, the potential positive impact generated by regenerative agriculture practices is clear. With this regard, it is relevant to mention the initiative announced by Gucci in early 2021 concerning not only the protection and restoration of forests in areas significant for biodiversity and at risk of deforestation, but also the adoption of regenerative agriculture practices within its supply chain. The company aims to reduce the environmental impacts resulting from the production of natural textile fibres, such as wool and cotton. It represents an excellent example in the context of the SDGs and the corporate social responsibility of the fashion industry.
The Gucci brand has already been carbon neutral for four years, recording in 2019 a decrease in environmental impacts by 21% compared to 2018[62]. Considering these strategies in a long-term perspective, it can only be expected a further enhancement of this virtuous behaviour.

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[59] Mancini M., 2019. Agricoltura Organica e Rigenerativa. Terra Nuova Edizioni.
[60] Mancini M., 2019. Agricoltura Organica e Rigenerativa. Terra Nuova Edizioni.
[61] Deafal. Agricoltura Organica e Rigenerativa. https://www.agricolturaorganica.org/chi-siamo/.
[62] Camurati F., 2020. Gucci verso l'obiettivo carbon neutral grazie all'agricoltura rigenerativa. https://www.milanofinanza.it/.

6.2 Choosing environmentally friendly textile fibres

Ecological textile fibres are natural, artificial or synthetic yarns with a low environmental impact. The critical issues previously discussed regarding cotton cultivation and wool production from intensive farms have made it necessary to adapt production processes to sustainable practices. Particularly, with regard to cotton, BIO[63] certifications play a fundamental role as they require production to be environmentally sustainable and to pay particular attention to the social and environmental impact at all stages of processing, up to marketing. Therefore, organic cotton is a textile fibre produced through sustainable agriculture methods, both from an environmental and social point of view.

In this case, the example chosen is the Becotton chain, whose cotton comes from the Indian plantations of Maikaal, where since 1991 the company has been producing organic cotton according to biodynamic agriculture criteria. The products are imported by the Swiss consortium BioRe[64], which guarantees compliance with ecological and social criteria and the exclusion of all harmful and polluting chemical treatments. The processes following cultivation and export are carried out in Italy (weaving, packaging and cutting, pattern development, finishing and dyeing, design, logistics and design, logistics and distribution)often with the support of family-run businesses in the Biella area, from which the name Made in Biella derives. The involved production companies meticulously observe sustainable practices regarding the environment and respect for workers, demonstrating the extent to which a local project can have an international reach, in line with the SDGs of the 2030 Agenda.

Cotton is not the only ecological textile fibre produced: there is also organic wool, with a low environmental impact and produced on organic farms, linen, hemp, jute, ramie, cork, tirowool and bamboo. Furthermore, it is interesting to mention the latest developments in biotechnology with respect to the creation of textile fibres, namely those created from the DNA of corals, jellyfish, sea anemones, turtles and oysters. They are known as Feature Fibres, referring to the new fibres which will be entirely biodegradable and retain the characteristics required by the consumer without harming the environment.

6.3 Vegetable tanned leather and vegan leather

The critical issues of the tanning industry, as explained for wool, are directly linked to intensive animal husbandry and deforestation practices. In this section, two different applications of sustainability will be analysed: vegan leather production and natural leather treatment.
Vegetable (or vegan) leather refers to an artificial material created in the laboratory with the aim of reducing the inconveniences associated with the production of leather of animal origin. It is a type of product that is closely linked to cruelty-free fashion, a trend that is growing and in line with market demand. The final product is of vegetable origin, but a synthetic component is added; the

[63] As the already mentioned GOTS.
[64] Becotton. https://becotton.com/la-filiera-becotton.

dosage between these two components is the basis of heated debate. In fact, it remains doubtful whether it is appropriate to talk about sustainability in relation to vegetable leather, considering that it is mainly of synthetic origin and, consequently, involves the use of toxic substances with a high environmental impact. In order to answer this issue, it is necessary to monitor the production processes, the companies involved and the materials used. Certainly, some examples are very good and highly sustainable: AppleSkin is a vegetable leather made from apple scraps using recycled materials; mango production waste is used for Fruitleather without the use of toxic solvents; coconut water is used for Malai leather, the production process is solvent free and the environmental impact is minimal.

On the other hand, vegetable tanning is an ancient process that has its origins in Tuscany. It is a process based on the use of natural tannins[65] from trees, which in recent years has been combined with the most advanced technologies in total respect for nature. In Italy, the process is organised by the Consorzio Vera Pelle Italiana Conciata al Vegetale[66] and certified through the mark of excellence in compliance with the Technical Production Regulations issued by the Consorzio[67]. The sustainability of the process derives from several factors: only the leather of cattle previously slaughtered for consumption by the food industry is used, the natural tannins ensure easy and sustainable disposal, most of the substances involved in the treatment of the hides are recovered, treated and reused in other sectors, the brand guarantees the complete absence of toxic substances.

In conclusion, this analysis has demonstrated that existing legislation related to the textile sector and to the pursuit of SDGs 14 and 15 is still developing, both at international and European level. Moreover, the role that environmental certifications applied to the fashion industry have assumed over the years is relevant. Indeed, many companies in the industry have committed themselves to the standards and requirements they propose in order to promote a sustainable development and the safeguard of the Earth's main resources, namely water and soil.

Secondly, the most critical issues of the textile industry which need to be addressed through constant and harmonised efforts by companies, as well as by international and local authorities, have been analysed. Excessive water consumption and water pollution, intensive agriculture intensive agriculture and deforestation for the production of textile fibres are just some of the issues which are responsible for environmental pollution and destruction of biodiversity.
Finally, the need to face these emergencies has led to the examination of several among the best business practices already implemented by individual local Italian companies. If these will be implemented and promoted on a large scale through a transparent sharing of knowledge and

[65] "Generic name for chemical substances contained in various plants, with properties similar to tannic acid, having tanning properties for animal skins" (Oxford Languages).
[66] Consorzio Vera Pelle Italiana Conciata al Vegetale. https://www.pellealvegetale.it/.
[67] Disciplinare Tecnico Pelle Conciata al Vegetale in Toscana. https://www.pellealvegetale.it/wpcontent/uploads/2020/09/DISCIPLINARE-TECNICO_prima-edizione_2010.09.02.pdf.

information, they will guarantee a growth and sustainable development of the textile sector increasingly in line with Goals 14 (Life Below Water) and 15 (Life on Land).

7. The changing fashion market and its effects

The fashion market has changed. It is becoming increasingly characterised by a greater buying and production frenzy. How does this 'change of pace' generate more pollution? Have consumers themselves determined the change in this sector?

7.1 SDG 12 and consumer engagement

The main goals of the 2030 Agenda, mentioned in the previous sections, can be analysed in relation to the fashion industry as it ranks among the top five industrial sectors for global pollution[68].
It is important to underline that sustainability is a concept that has to be considered from a systemic point of view: an analysis of the whole production chain is required, from the beginning of the production process to the product ready for the consumer, including the education of the latter, who has to be informed about a level of responsible consumption that can be defined as sustainable.
In Italy, for example, the consumption of fashion-related products has always been among the top purchasing priorities along with food, clubs and car maintenance[69]. Specifically, when analysing the fashion sector, what is evident is that, despite the economic and financial crisis, the pace of shoe and clothing purchases has never changed since 2006. According to a study by Eurostat[70], although Italy has lost a position in the European ranking of countries for expenditure on clothing, it has kept its citizens' per capita spending on this sector unchanged and constant: around 1,100 euros, just as it was in the early 2000s. This level of consumption puts Italy in third place in the European ranking, behind only Luxembourg (1,700 euros per capita), Austria and England, both of which have an average per capita expenditure of 1,300 euros.
It is therefore considered necessary to further investigate whether the greater intensity in the production of clothing is or is not driven by greater consumer demand.

7.2 Different categories of needs

Fashion is governed by customs, desires and fantasies of consumers. Fashion can be a hint to interpret each person when dealing with unknown individuals. The shapes, colours, softness or rigidity of a garment may change with time, but the function of the garment always remains the same. The centrality of fashion affects everyday life. In particular, the numerous techniques employed in advertising to involve the customer make him or her increasingly part of a chain of consumption with little awareness. This involvement is evidenced by data from the UK: in the first

[68] https://www.vanityfair.it/fashion/news-fashion/2019/04/11/sostenibilita-moda-hm-conscious-pinatex-fashion-for-good-ecofibre
[69] https://www.panorama.it/economia/abbigliamento-ecco-quanto-spendono-gli-italiani
[70] ibidem

half of 2018, approximately 71,649 copies[71] of the fashion magazine Vogue were sold[72]. Cosmopolitan also sold around 184,566 copies in the same period. These figures underline the growing interest of consumers in fashion, who seem to be more willing to play an active role in the fashion industry rather than being subjected to it.

But what are the decisive factors guiding consumer's choices?
According to Maslow[73], all consumer needs can be grouped into two different categories: scarcity needs and growth needs. Deficiency needs (so called because they motivate people when they are dissatisfied) can be easily satisfied, but growth needs (which arise from the desire to grow as a person) are priceless and therefore demand more and more satisfaction every day.
Within deficiency needs are physiological needs, those for security, and those for love and belonging.
In the case of physiological and safety needs, the functionality of clothing becomes the most important aspect, for example: the purchase of a heavy coat in the winter season, or the flammability of the fabric of the children's nightwear.
After the physiological and safety needs come the needs for love and belonging, where the consumer is influenced by family, peers, roles and status.

From street fashion to high fashion, the whole spectrum of the clothing industry is influenced by esteem needs and the need for self-fulfilment. Esteem needs include the acceptance of the consumer by others, which can be assimilated into "prestige" or "social acceptance".
Finally, in the case of self-actualisation[74], the consumer goes to another stage and wants to display his/her creativity and individuality in order to stand out from others and receive acceptance within his/her social environment. Here the consumer obtains social uniqueness and the improvement of his or her image. These individual needs play an important role in consumers decision-making and purchasing patterns. To this must be added the change in the type of production in the fashion industry.

8. Negative aspects

8.1 Changing attitudes: consequence or cause of fast fashion?

The recent change in consumer trends is often justified by the change in the type of product offered by the fashion industry.
The production and distribution system related to the fashion world has always been based on the division of the calendar year into two different semesters, autumn-winter and spring-summer. In this way, the production cycle of a garment took place in the off-season months and was then protagonist in the following six months. With the advent of companies such as Zara or H&M, the production cycle has been considerably reduced, taking up to four weeks of processing and distribution. The main objective is to immediately put on the market the clothes from the fashion

[71] Statistica (2019) Womens Lifestyle and fashion magazines ranked by print retail sales volume in the United Kingdom (UK) in the first half 2018 (in copies sold). https://www.statista.com/ statistics/321619/women-s-lifestyle-magazines-ranked-by-sales-volume-uk/
[72] Ibidem
[73] Maslow, A. (1954). *Motivation and personality*. New York: Harper.
[74] Hegarthy S (2012) How jeans conquered the world. https://www.bbc.com/news/magazine- 17101768.

shows of the big brands in order to satisfy the consumer's desire for high fashion. The consumer, after having seen the fashion show, is able to buy at a reasonable price a garment that is completely similar to the one on the catwalk. This leads to a change in consumer behaviour.

In the UK, between 1995 and 2005, clothing consumption increased by a third and the amount spent on clothing was 12% of total household income, compared to 30% in the 1950s[75][76]. This trend has been identified in all Western countries and is attributed to cheap clothing, short lifespan of the garment and people's better financial capabilities. In addition, the study[77] also found that almost half of the clothes purchased have not been used in the last year, an estimated 2.4 billion items, and these unused clothes are owned by consumers in the younger age group (between 25 and 34). A further study conducted in the Netherlands revealed that consumers kept their clothes for an average of 3 years and 5 months, and the average number of times they were worn was 44 days[78][79]. Alongside this trend, another totally different one has emerged, one that has time as its main component. The frenetic and oscillating trend of consumers' tastes (naturally influenced by the change in fashion) means that the companies involved in this sector have to deal with sudden and constant change within the same season, so production becomes a race against time.

8.2 Increased production leads to increased pollution

Increased production increases global pollution. One of the main problems of intensified production is the global dispersion of the processes that make up the production chain. The relocation of production to countries with low labour costs is an increasingly common phenomenon among large textile companies. However, this generates social inequity, resource exploitation and pollution. In addition to this, there is an aspect already mentioned in the first part of the analysis (Section 2. A complex system), namely a lack of transparency in the production chain: it is often difficult for the final producers to know with certainty where raw materials come from and how they have been processed.
In addition, since the sector is growing rapidly in terms of demand, it is often a matter of economic convenience. This is why, when moving from the regions of first manufacture to smaller retailers (usually in the UK, Europe and the US), transport is no longer by container ship but by cargo plane. While these save many hours in terms of distribution, they increase air pollution considerably.

8.3 How the production of jeans negatively affects the environment and the health of workers

Since the beginning of the 20th century, denim jeans have been a must-have item in every consumer's wardrobe. Thanks to its wearability and durability, jeans have been able to adapt and innovate to withstand fashions and changes in vision. Regardless of social class, consumers have

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[75] Niinimäki K (2014) Sustainable consumer satisfaction in the context of clothing. In: Vezzoli C, Kohtala C, Srinivasan A (eds) Product-service system design for sustainability. Greenleaf, Sheffield, UK, pp 218–237

[76] NiinimäkiK(2011)Fromdisposabletosustainable:thecomplexinterplaybetweendesignand consumption of textiles and clothing. Doctoral dissertation, Aalto University, Helsinki

[77] Belz F, Peattie K (2011) Sustainability marketing: a global perspective, 3rd edn. Wiley, West Sussex, UK

[78] FletcherK (2008) Sustainable fashion & textiles: design journeys. Earthscan, London

[79] Kell G (2018) Can Fashion be Sustainable. https://www.forbes.com/sites/georgkell/2018/06/ 04/can-fashion-be-sustainable/#369c85d0412b.

always felt comfortable wearing jeans, especially over time (jeans have the characteristic of softening with wear and after many washes).
However, the production of this garment is particularly burdensome in terms of emissions and other environmental externalities.

Firstly, its production involves considerable water pollution, and in addition to the aforementioned (Section 2) pollution, which results from the cultivation of the textile fibres needed for production, mention should be made of the last stage of the production chain concerning the product. There is, for example, intensive use of chemical dyes in the production of distressed jeans: in order to provide a worn or vintage look, the garment is subjected to numerous chemical washes. All these substances leak into the water system, turning the colour of the water into indigo-blue, as happens for example in the Pearl River in China.
Secondly, there are also risks to the health of workers due to their exposure to harmful substances sprayed in the so-called 'acid wash' process, which enables the manufacturer to create jeans that are lighter than their original colour.
A further polluting, but above all damaging, step is the process of sandblasting jeans. This involves taking fine sand and inserting it into a compressed air gun. The sand is then inserted under high pressure into the garment to create an old, worn effect. This is a cheap and relatively quick process of handling clothes, but it involves a significant dispersion of silica (the main ingredient of this production step) which is highly harmful to workers.

9. Solutions and proposals

9.1 State incentives to protect pollution during production phases

Article 38-bis of the "Decreto Rilancio"[80] contains a measure aimed at "supporting the textile, fashion and accessories industry, with particular regard to start-ups that invest in design and creation, as well as with the aim of promoting young talents in the textile, fashion and accessories sector that enhance Made in Italy products with a high artistic and creative content"[7] through the provision of grants.
In the article in question there is no mention of potential non-repayable support for improving the production process in terms of sustainability despite the negative impacts of the sector analysed so far.
Currently, at European level, the matter is protected by Directive 2019/904 of the European Parliament and of the Council for the protection of water resources (already mentioned in point 1.1 of the second section of the analysis: SDG 14: Life Under Water). It refers to harmful substances discharged into water (with a special focus on plastics) in terms of the high percentage of water waste generated during the whole life cycle of clothing. In the process of transposition of the European directive, a specific regulatory chapter concerning pollution in the textile sector seems to be missing. For this reason, a draft law would be necessary to guarantee the granting of non-repayable state incentives to companies able to demonstrate compliance with water pollution parameters. This intervention would be the right solution to fill the Italian regulatory gap regarding sustainability in production processes in this specific sector.

[80] https://www.mise.gov.it/images/stories/normativa/art.38_bis_TMA_2021.pdf

9.2 The polluter pays principle in the textile sector

While the previous proposal dealt with incentives to make production techniques more sustainable, the development of this one focuses more on disincentives to pollute. According to the European principle of "the polluter pays", "a company that causes environmental damage is responsible for it and must take the necessary preventive or remedial action and bear all related costs"[81]. Again, there is no specific legislation concerning the textile sector in Italian law. Directive 2004/35/EC[82] of the European Parliament and of the Council has in fact been referred to several times in the Italian regulatory context with different rulings. These include, for example, the infringement procedure decided by the European Court of Justice on illegal landfills. In 2003, the EU Commission launched an infringement procedure against the Italian Republic for managing the waste cycle in a way that did not comply with EU rules. In ruling 135, the Italian state was found to be in breach. As the shortcomings on the part of the Italian state were persistent, in a judgment of 2 December 2014 (Judgment No. 196[83]), the court, at the request of the European Commission, imposed fines on the Italian government. The 2007 judgment premised that under Article 4 of Directive 75/442[84], it is up to Member States to take the necessary measures to ensure that waste is disposed of without endangering human health or without using methods that could harm the environment[85]. This ruling shows that the EU has focused on general issues in relation to waste. It does not determine how states should pursue these objectives. Therefore, there remains ample regulatory space for the Italian State to promote legislative initiatives in the field of corporate environmental responsibility related only to the clothing sector.

9.3 Encouraging slow fashion through the rediscovery of second-hand clothes

In the last proposal under consideration, it is important to emphasise the need to overcome the fast fashion that has developed since the 2000s, and to try to return to production and purchasing rhythms that are considered less frenetic. In order to counter the strong environmental impact generated by the intensive production characteristic of fast fashion, it is necessary to switch to a less frenetic production, defined in the fashion industry as "slow fashion". Slow fashion is the future, but it is essential to creatively design the developing relationships between producers and consumers in this field.

One possibility is to increase the sale of second-hand clothes. Taking into account the characteristics of fast fashion, the introduction of a 'buy-back' option by the big fast fashion brands could be a turning point. They could guarantee the consumer who returns the used garment a percentage of the original sale value when buying it back. Then, once the returned product has been obtained, the big brands could start dedicating a part of their shops to the second-hand section. They could also consider the not-so-remote possibility of not succeeding in selling second-hand clothes. As a solution, a time limit could be introduced for selling the product. After this period of time, the product would be taken back and disposed of, and the materials used to produce the item would be recycled.

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[81] https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=LEGISSUM%3Al28120#:~:text=Stabilisce%20le%20norme%20basate%20sul,sostenere%20tutti%20i%20costi%20relativi.

[82] https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32004L0035&from=en

[83] https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=CELEX%3A62013CJ0196

[84] https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=celex%3A31975L0442

[85] https://www.studiolegalesantiapichi.it/il-principio-di-chi-inquina-paga-e-la-giurisprudenza-comunitaria/

This would provide an incentive for the first consumer not to accumulate new garments without disposing of unused ones, and at the same time the repurchased garment would be given a second life.

In conclusion, it is clear that the change in consumer mentality has influenced the change in pace of production in this sector. At the same time, fashion product design has been influenced by the increased supply of low-cost products available on the market. As a result, it is plausible to say that industry and consumers influenced each other. As has been analysed, the increased intensity of production, buying and selling of textile products is leading to a significant increase in the amount of pollutants released into nature. Target 12 of the 2030 Agenda is currently very difficult to achieve at European and global level, partly because of the above-mentioned elements. Finally, focusing on Italian law, as the analysis shows, there is ample room for improvement through the enactment of laws that strengthen sustainability in this specific sector.

CONCLUSIONS

Social challenges will be crucial in making companies operating in the fashion industry sustainable and more competitive. Increasing transparency and traceability of garments must become a common goal to protect all people involved in the supply chain. Although not yet widespread, the transparency index or voluntary sustainability standards such as SA8000 provide valuable tools for companies to analyse and correct social imbalances involving their partners or subcontracted companies. Furthermore, it is necessary to reduce the dependence of developing countries on the choices of large multinational fashion companies, through the promotion of collaboration and healthy economic growth.

Effective regulatory intervention will also be essential to drive the sustainable transformation of the fashion industry. At the moment, this is absent and leaves the industry mainly regulated by voluntary agreements and soft laws. Furthermore, the role of women is still underestimated despite growing evidence that their greater inclusion leads to better economic, social and environmental outcomes. Here too, the commitment of companies and governments still seems to be too superficial.

As in other sectors, there is a tendency to focus more on environmental concerns at the expense of social ones. This is probably due to different consumer perceptions, together with the practicability of the required actions. However, underestimating social issues is a serious shortcoming of the current approach to sustainability. This is where policy makers, consumers and businesses will need to do more if they are to create the conditions for a fair economy that promotes equality of opportunity and is able to stay within the limits of natural capital.

Specifically, in relation to SDGs 14 (Life Under Water) and 15 (Life On Earth), it emerged that current legislation and environmental certifications applied to the textile sector are not yet adequate to achieve them. Although the fashion industry has made recent progress, it is still one of the main sectors for pollution generated. We believe it is essential to reiterate that international, European and national efforts must be more focused on closing the aforementioned regulatory gaps and monitoring company production processes in order to make the textile sector truly sustainable.
In addition, companies adopting innovative sustainable techniques should be encouraged and promoted as inspirational models, through a greater and continuous sharing of the fruits of their labour, commitment and experiences. This should take place on three levels: national, European and, finally, international. A process of education and awareness-raising that can make producers, consumers and, last but not least, the authorities more aware of the fact that adopting sustainable practices does not exclude economic growth or limit company operations but, on the contrary, is capable of generating benefits in terms of profits, technological innovation, environmental protection and the protection of future generations.
In view of the content of this research paper and by virtue of the conclusions reached, AWARE is submitting a proposal to the institutions to achieve the sustainable development of the fashion industry and strengthen, in competitive terms, the small and medium-sized enterprises operating in it.

Article 38-bis of the "Decreto Rilancio" contains a measure aimed at "supporting the textile, fashion and accessories industry, with particular regard to start-ups that invest in design and creation, as well as with the aim of promoting young talents in the textile, fashion and accessories sector that enhance Made in Italy products with a high artistic and creative content" through the provision of non-repayable contributions. However, these contributions are not foreseen for small and medium-sized enterprises that integrate in their production process practices that: aim at a better management of natural resources, reduce the negative impact of the final product on water resources and forests, ensure gender equality and decent work. Specifically, the Decree of the Ministry of Economic Development of 18 December 2020 mentions among the eligible projects "projects inspired by the principles of circular economy aimed at recycling used materials or using fabrics from renewable sources;". What is absent, however, is a consideration of projects that aim at:

- the efficient use of textile fibres that contribute, for example, to deforestation;
- the reduction in the use of materials that generate water waste, especially in the form of microplastics, generated during the production, processing, washing and disposal of garments;
- the reduction in the use of raw materials of animal origin such as leather, wool and the like.
- the promotion of social inclusion and the role of women.

The proposal is therefore aimed at expanding the range of eligible projects that are directly linked to Sustainable Development Goals 5 (gender equality), 8 (decent work and economic growth), 12

(ensuring sustainable consumption and production patterns), 14 (life under water) and 15 (life on earth). As highlighted in the analysis, these objectives are closely related to the typical activities carried out by companies in the fashion industry, and therefore must be the ultimate goal towards which the sector must move. The role of the state must therefore be central in supporting companies that aim to achieve these objectives.

Encouraging these practices means strengthening the Italian productive fabric in a sector of excellence for our country. By increasing the number of fashion companies dedicated to integrating sustainability principles, this transition will increase their competitiveness. Improved performance is also linked to the increasing attention of policy makers and, above all, consumers towards the implementation of processes aimed at ensuring the achievement of a sustainable fashion industry.

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