



FROM THEORY TO PRACTICE: THE EUROPEAN UNION'S LEGISLATION ON WASTE MANAGEMENT AND THE CURRENT SITUATION OF TEXTILE RECYCLING IN ROMANIA

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Abstract: Waste, regardless of its nature and origin, has a serious impact on several areas of life, causing a multitude of negative effects on both human health and the environment, climate and, last but not least, the economy. The amount of clothes produced globally has experienced a significant increase with the emergence of the concept of fast fashion. A direct consequence of this is the increase in textile waste. In order to reduce the negative impact on the environment, the European Union has implemented various regulatory acts which aimed at reducing textile waste and increasing the life cycle and recycling of textiles, like the Directive 2008/98/EC of the European Parliament and of the Council, amended by the Directive (EU) 2018/851 of the European Parliament and of the Council. In Romania, nowadays, the Government Emergency Ordinance no. 92 of August, 19, 2021 is in force. One of the most important provisions that can be found in the above-mentioned Emergency Ordinance is that by January 1, 2025, the national authorities must introduce separate collection of textiles. This measure of separate collection of textiles represents an important step towards sustainable resource management and reducing environmental impact. This paper will show which are the theoretical references to textiles made in the European Union's Directive, as well as the current legal situation in our country regarding the transposition of the European regulatory acts. At the same time, it will also present the stage in which textile waste collection is in Romania, by the analytical study of the data provided by the European and Romania institutions, as well as the information provided by the various organizations involved in the textile recycling process in our country. As a result of the study undertaken, the conclusions will show some practical ways in which both the collecting and the recycling process in our country could be improved.

Key words: EU's Directive, waste, recycle, sustainability, circular economy

1. INTRODUCTION

The Directive 2008/98/EC of the European Parliament and of the Council [1], amended by the Directive (EU) 2018/851 [2] is the one that establishes a legislative framework for waste management in the European Union (EU), so at the level of each State Member. The regulation was designed to create certain rules in order to protect the environment, as well as the health of the population, by implementing certain appropriate techniques for the management, recovery and



recycling of waste, in order to reduce the pressure on resources and improve their use. All these elements are crucial for the existence of a circular economy, as well as for maintaining an optimal level of competitiveness at the Union level for a long-term. A very important fact is that the Directive also introduces the concept of “extended producer responsibility”, which means that it places financial responsibility on manufacturers, who, from now on, have to pay for every new textile product they put on the market. Furthermore, the manufacturers are the ones that must ensure that those products, when they are no longer used, do not end up having a negative impact on the environment.

Within the directive, in art. 3, the notion of waste is defined as “any substance or object which the holder discards or intends or is required to discard” [2].

Regarding the concept of “extended producer responsibility”, at the European Union level, a representative country from this point of view is France, which since 2007 has implemented an EPR scheme for clothing, shoes, and household linens and also expanded to include curtains in 2020, setting a target collection rate of 50% [3]. At the beginning, the policy required producers to pay the net costs for separate collection and sorting, research and development projects, and costs for local authorities’ awareness campaigns. From 2023, the scheme also covers the costs of some other features, like: re-use (the scheme covers the net-costs of social enterprises facilitating re-use of garments); repair (the scheme provides households with a credit for the repair of their products, a credit that is applied directly to households as a discount on the invoice of the repair by approved businesses); eco-modulation (the scheme introduces a new fee modulation schedule which will not necessarily be tied to the size of the fee contribution). Although the target collection rate is that of 50%, this has not been achieved yet; it has been observed that the collection rate has decreased from 39% in 2020 to 31% in 2022 due to a 66% increase in products placed on the market over this period. The European Commission, in its impact assessment for a preferred option of a targeted amendment to the Waste Framework Directive, estimated that the EU-27 average collection rate was 22% in 2019. On the other hand, the collection rate in France, that of 31%, is about 50% higher than the EU-27 average. However, there are some countries, like Germany for example, that managed to achieve a high collection rate even without a mandatory EPR scheme [3].

2. TEXTILES IN THE EUROPEAN DIRECTIVE

References to textiles are made, first of all, within the framework of art. 3 para. 2b of the Directive, where municipal waste is defined as “mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture” and “mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households” [2].

Also, another reference is met in art. 9 of the Directive, which regulates some issues related to waste prevention. The provision in this article states that member states shall take certain measures in order to prevent waste generation, which includes “encourage the re-use of products and the setting up of systems promoting repair and re-use activities, including in particular for electrical and electronic equipment, textiles and furniture, as well as packaging and construction materials and products” [2].

The next reference is the one provided in art. 11 of the Directive and this is one of particular importance: “Member States shall set up separate collection at least for paper, metal, plastic and glass, and, by 1 January 2025, for textiles”. Also, in the content of art. 11 we find the following provision: “By 31 December 2024, the Commission shall consider the setting of preparing for re-use

and recycling targets for construction and demolition waste and its material-specific fractions, textile waste, commercial waste, non-hazardous industrial waste and other waste streams, as well as preparing for re-use targets for municipal waste and recycling targets for municipal bio-waste. To that end, the Commission shall submit a report to the European Parliament and to the Council, accompanied, if appropriate, by a legislative proposal” [2].

3. CIRCULAR ECONOMY AND TEXTILE RECYCLING

The European Union has a Strategy for Sustainable and Circular Textiles, in order to create a greener, more competitive textiles sector. The Strategy for Sustainable and Circular Textiles aims to create a coherent framework and a vision for the transition of the textiles sector whereby: “by 2030 textile products placed on the EU market are long-lived and recyclable, to a great extent made of recycled fibres, free of hazardous substances and produced in respect of social rights and the environment. Consumers benefit longer from high quality affordable textiles, fast fashion is out of fashion, and economically profitable re-use and repair services are widely available. In a competitive, resilient and innovative textiles sector, producers take responsibility for their products along the value chain, including when they become waste. The circular textiles ecosystem is thriving, driven by sufficient capacities for innovative fibre-to-fibre recycling, while the incineration and landfilling of textiles is reduced to the minimum” [4].

Circular economy means sustainability and respecting the 3Rs is crucial: reduce, reuse, recycle. To reduce means to use less, understood as buying fewer brand-new items (for consumers) and using less material per item and designing for recycling (for companies) [5]. By reusing a product, the item is used multiple times and it includes taking into consideration concepts like functionality, usability and longevity of usefulness. To recycle involves collecting and processing materials that would otherwise become waste in creating new products.



Fig. 1. The 3Rs. Source: <https://innovation-yachts.com/3r-reduce-reuse-recycle/>

The impact of textile production and consumption on the environment is shown in the following figure:

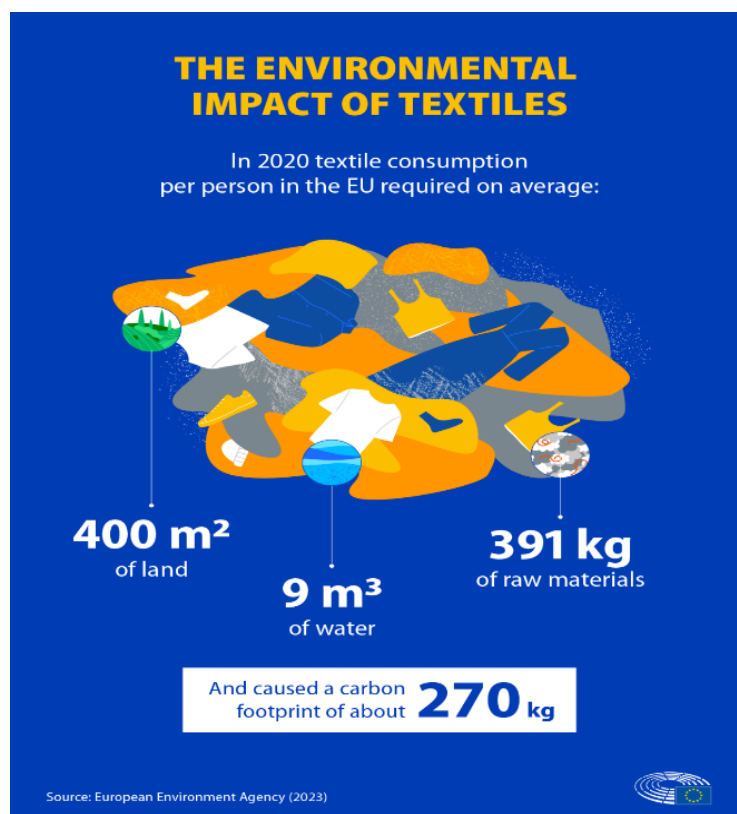


Fig. 2. The environmental impact of textiles. Source:

<https://www.europarl.europa.eu/topics/en/article/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics>

The fashion industry, especially fast-fashion, is globally recognized as a major producer of waste, and the statistics claim that of the 100 billion garments produced each year, 92 million tonnes end up in landfills, which means that the equivalent of a rubbish truck full of clothes is thrown away every second [6]. At the EU's level, in 2020 there has been estimated 6.95 million tons of textile waste, which means approximately 16 kg per person and only 4.4 kg per person were collected separately for use and recycle [7]. There is also a major problem with reusing, as nowadays many items are worn only seven to ten times before being thrown away.

As shown in our previous paper [8], the major problems of the environment created by the textile industry include, besides waste, are: the use of water, water pollution and air pollution. The solution to these problems include, first of all, the awareness that they really exist and that the environment is seriously affected by it. Also, it requires a systemic change towards circularity, a fact which involves taking into consideration effective policies related to the manufacturing process and what happens after that: materials and design, production and distribution, use and reuse, collection and recycling in this industry.

By textile recycling there are many benefits brought to the environment. There can be mentioned: reducing the amount of used water and less pollution, which means a cleaner environment and a more sustainable economy.



4. THE CURRENT SITUATION IN ROMANIA

As shown in the Romanian media [9], our country is among the top polluting countries when it comes to textile waste management. Over 95% of the textiles present in Romanian households end up being thrown away and incinerated, according to a report by the European Environment Agency, cited by the Humana People to People Organization. This happens due to the lack of a collection, sorting and reuse or recycling infrastructure. The effects are disastrous, because synthetic fibres thrown into nature release dangerous microplastics, and natural ones generate a greenhouse effect when they decompose.

Waste management legislation establishes that by January 1, 2025, separate collection of textiles must be implemented, both by companies and local authorities, a fact that had to be applied in Romania, too. The European Commission has also proposed the introduction of mandatory extended producer responsibility for textiles in all Member States, to make producers take responsibility for the entire life cycle of textile products, from their design to waste management. The Commission proposal also introduces separate collection rules for textiles and sorting requirements for the transport of used textiles [9].

The above-mentioned Directive (2008/98/EC) was transposed by Law no. 211 of 2011 on the waste regime, republished, with subsequent amendments and additions, this law being repealed by the Government Emergency Ordinance no. 92 of August, 19, 2021 [10]. The Emergency Ordinance provides that that by January 1, 2025, the authorities must introduce separate collection of textiles. Based on this Ordinance, local authorities have the following obligations: to create the infrastructure necessary to install collection points and transport textile waste, to carry out advertising campaigns to raise awareness of the importance of recycling and the correct recycling of textiles, as well as to monitor and verify how the regulations are respected. In order to verify compliance with legal provisions, certain competent authorities such as the National Environmental Guard or the Romanian Military Police are delegated in this regard. Individuals and legal entities that do not comply with the rules may be subject to fines, for example for local authorities, fines of up to 45,000 lei for the lack of an efficient textile collection system.

The circular economy is an extremely important topic which Romania, nowadays, is striving to give all the attention it deserves. It represents an efficient solution to manage the collection and reuse of all types of waste. Although things are moving quite slowly and in small steps, in recent years, Romania has been trying to comply with European Union requirements regarding recycling, but there are still some problems with the practical application of existing regulations, such as the existence of a lot of unsorted waste that cannot be reused [11]. A study claims that each European citizen consumes approximately 14 tons of raw materials per year and also produces five tons of waste annually. This is why it is important to point out the fact that these materials could be reused, recycled or repaired so that they can be used again.



Fig. 3. Collection bins in Romania. Source: <https://texcycle.ro/en/>

From January 1, 2025, Romania has implemented a new fraction that has to be collected separately, namely textiles. In addition to this, our country has undertaken through the Romania's Recovery and Resilience Plan to establish at least 26 waste recycling facilities that will be put into operation by June 30, 2026, with funds earmarked for the construction of recycling facilities under the program amounting to 220 million euros [12].

According to data provided by the Ministry of Environment, about 250,000 tons of textile waste are generated annually in Romania. However, only about 15% of textile waste is currently collected and recycled in the country [13].

Nowadays, in our country there can be found, in some cities like: Oradea, Ștei, some collection bins, like those shown in figure 2, which belong to TexCycle and which reached over 200 textile collection units in Romania [14]. Clothes and shoes that are still in good condition are sorted and sold as reusable items. On the other hand, textiles that are no longer suitable for reuse are sorted according to their composition and condition and are then transformed into new fibers for the production of recycled textiles.

Also, in Romania, there are some companies specialized in the industry of sorting and reusing used textiles, like the Roseco company, which was established in 1992 and is one of the pioneers in this field [15]. Their goal is to respect resources and raw materials by extending their lifespan and considerably reduce the consumption of natural resources for the production of virgin raw materials. Among other things, the company claims that it contributes to the annual reduction of 4,000 tons of textile waste, preventing its energy recovery through incineration or landfilling.

5. CONCLUSIONS

As the paper shows, nowadays, the subject of textile waste in Romania is viewed with great interest and responsibility by the central and local authorities, as in our country there are normative acts that specifically regulate this field. The efforts of the authorities consisting in implementing the provisions provided for in the European regulations regarding the management of textile waste, in order to reduce the negative impact that they have on the environment, must necessarily be doubled by the responsible attitude of each citizen.

Although, as we have shown in the paper, there are sanctions provided for in the Government Ordinance for those who do not comply, the success of the separate collection of



textiles will also be influenced by the strict application of these sanctions. Specifically, it would be absolutely necessary for all bodies involved and competent in applying sanctions to demonstrate strict application of the legal norms and to closely supervise the fulfillment by both companies and citizens of the obligations in their charge. Also, we consider that there is an absolute need for much more advertising campaigns in which an eco-friendly attitude is promoted because nowadays, in our country, the subject of textile recycling is not so much advertised. Although in law there is a well-known principle according to which no one can claim ignorance of the law, however, a recommendation would also be that the legal provisions relating to all aspects of textile recycling be promoted intensively on various media channels, be it TV, radio, internet, with an emphasis on the sanctions that exist in case of non-compliance. At the same time, it would be useful to print flyers that would contain this information for citizens, as well as to indicate the places where the recycling collection bins are located. We believe that all these suggestions, if implemented, would lead to a much higher percentage of textile waste collection than currently exists and to a higher success rate of textile recycling.

There are some challenges that have to be pointed out, in the consideration of the extended producer responsibility, which aims at helping to overcome some of the environmental impact generated by the production, use, and disposal of textiles, like the use of new recycling technologies, which will require investment.

After all, in this field of recycling, the path from theory to practice is not an easy one.

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