



## Methodology “The Biggest Textile Waste Polluters in Europe” of LABFRESH

The Biggest Textile Waste Polluters in Europe is a ranking of the 15 countries that are producing the most textile waste in Europe according to [Eurostat 2016. Generation of waste by waste category](#).

The countries selected for the textile waste ranking were chosen based upon the total amount of textile waste they produced and the availability of data. Therefore, the analysis focuses on the top 15 European countries that are the biggest polluters of textile waste. The Index assumes that they have the biggest impact on the environment out of all the European countries from a textile waste perspective.

[Eurostat](#) defines waste as any substance or object which the holder disposes of. Disposal of waste can have a variety of meanings, including collection, treatment and the transformation operations necessary for its reuse, recovery or recycling.

The ranking table was split into three clusters called “textile waste”, “clothing market” and “second hand”. Each cluster is made up of factors which contribute to its total score, which was then standardized on a scale from 0-100, with 100 representing the least sustainable country in regards to textile waste.

### **The textile waste cluster:**

The textile waste cluster describes what happens to textile waste and how much each country produces.

#### **❑ Yearly textile waste (Tonnes)**

The total amount of textile waste produced per country in tonnes was sourced from [Eurostat 2016. Generation of waste by waste category](#) by searching for textile waste in the non hazardous waste data.

#### **❑ Yearly textile waste per person (Kg)**

The total textile waste per country divided by its respective population, after converting the yearly textile waste from Tonnes to Kilograms. The information on each country’s population was sourced from [2019 Revision of World Population Prospects](#).

#### **❑ Yearly recycled textile waste per person (Kg)**

The textile waste that is broken down to obtain fabrics that will be used to manufacture new products, as defined by [Eurostat](#). This number was obtained by multiplying the yearly textile waste per person in Kilograms by the average yearly European percentage of textile waste that is recycled (10%), which was sourced from



page 58 of [The Environmental Improvement Potential of Textiles Report of the European Commission \(January 2014\)](#),

❑ **Yearly reusable textile waste per person (Kg)**

The textile waste to be reused with little to no modification, as defined by [Eurostat](#). It differs from recycling, which is the breakdown of textiles to be used to manufacture a new textile item, as the textile waste in this category is intended to be used as second-hand textiles as is. This number was obtained by multiplying the yearly textile waste per person in Kilograms by the average yearly European percentage of textile waste that is reused (8%), which was found on page 58 of [The Environmental Improvement Potential of Textiles Report of the European Commission \(January 2014\)](#).

❑ **Yearly incinerated textile waste per person (Kg)**

The amount of textile waste per person that is incinerated in a year. Incineration is defined by [Eurostat](#) as a method for waste disposal that involves the combustion (burning) of waste. It is a controlled process in which the energy given off from combustion can be reused by being converted into electricity. This number was calculated by multiplying the yearly textile waste per person in Kilograms by the average yearly European percentage of textile waste that is incinerated (24.3%), found on page 58 of [The Environmental Improvement Potential of Textiles Report of the European Commission \(January 2014\)](#).

❑ **Yearly landfilled textile waste per person (Kg)**

The amount of textile waste per person that ends up in a landfill. According to [Eurostat](#), a landfill is the disposal of waste into or onto a designated area of land. This is the least desirable way to dispose of waste because it is the most damaging to the environment. However, landfills represent the most common textile waste disposal technique. This value was calculated by multiplying the yearly textile waste per person in Kilograms by the average European percentage of landfilled textile waste (57.1%). This information was sourced from page 58 of [The Environmental Improvement Potential of Textiles Report of the European Commission \(January 2014\)](#).

**The clothing industry cluster:**

This cluster is an indicator for the size of the clothing market. The larger the size of the market, the higher the score due to the correlation between fashion waste and the clothing market. The data for this cluster was taken from [Eurostat](#).

❑ **Spending per person, euro per capita (2018)**

The average amount of money spent by each person on new clothes per year.



❑ **Percentage of gross domestic product (GDP)**

The percentage of the country's economy that is made up by the clothing market.

**The second hand cluster:**

This cluster indicates the amount of exported pre-owned clothing per country that will most likely be part of another country's second hand market.

❑ **Yearly export of worn clothing (Tonnes)**

The amount of second hand clothing and other worn items exported out of the country in tonnes was obtained from [The United Nations Commodity Trade Statistics Database](#)

This factor is an indicator for the amount of clothing which is disposed of in a sustainable manner in the studied country. The higher the weight of worn clothing exported, the more people are donating their old clothes. Donation is preferable to throwing clothes in the bin, since they would otherwise most likely end up in a landfill, which is the most destructive disposal technique for the environment.

**Scoring**

For the three clusters of the index, the research was standardised using a scale of 0-100. The calculation was carried out by using the following normalisation formula:

$$x_{new} = \frac{x - x_{min}}{x_{max} - x_{min}}$$

The disposal cluster was scored based on the total textile waste factor for each country.

The clothing market cluster was scored based upon a sum of all the equally weighted factors within it.

The second hand cluster was scored based on the yearly export of worn clothing for each country.

The final score was then based upon the sum of the clusters that was also standardised to 0-100.

It is important to note that a score of 100 represents the least sustainable country in regards to textile waste.



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