

The present work is made by the student: Papapanagiotou Konstantina. It is about " **The life cycle of a T-shirt and its impact** ". The project took place during the year of 2020-2021 in the English course.

THE LIFE CYCLE OF A T-SHIRT AND ITS IMPACT

You recycle glass, plastic and paper at home, bring your own coffee mug to Starbucks, take a reusable bag along when you go shopping and are generally doing everything you can to reduce your impact on the environment, right? But, did you know that the t-shirt and jeans you are wearing cost the Earth 2,200 gallons of water, enough to fill a small tanker truck? The production of cotton-textiles uses up large amounts of resources, such as water and energy, as well as releasing byproducts of starch, paraffin, dyes, pesticides and other harmful pollutants into the air and soil — under regular conditions. Each year, over two billion t-shirts are sold worldwide and 520 million pairs of jeans are sold in the U.S. With the production of one t-shirt using up 700 gallons of water and one pair of jeans using up 1,500 gallons, it is easy to understand why the call to curb textile waste is urgent.

How T-shirts contribute to the overall environmental impact of the clothing industry...

Within the largest clothing industry, each clothing item contributes its own environmental impacts. T-shirts have a substantial environmental impact due to the fabric they're made of, their production, and their usage and disposal. Cotton seems to be the dominant fabric for T-shirt production, and as mentioned, cotton contributes greatly to the environmental impact of clothing. It requires fertilizers, pesticides, water, and energy to be cultivated.

In their study on the life cycle of a t-shirt, Zhang et al (2015) concluded that there are 3 main phases of a cotton T-shirt's life cycle that contribute the most to its environmental impact—cotton cultivation, textiles manufacturing, and distribution and consumer use. The cotton cultivation and fiber production require energy, irrigation, fertilizers, and pesticides. Zhang et al estimates that cotton cultivation contributes 80% of the t-shirt's water requirements. Manufacturing the textiles requires large amount of energy, chemicals, and water. Finally, a distributing the T-shirts and using them requires electricity, detergent, and water, and it produces a great deal of waste. As mentioned above, dyeing is an environmentally-taxing part of the production process, and dyeing T-shirts consumes large amounts of coal, steam, water, and dyes. It also produces SO₂ and nitrous oxide emissions and wastewater. Wearing and washing the t-shirts also requires water and electricity as well. Finally, a

characteristic of the clothing industry is that many t-shirts each year are disposed of and turned into was

SHORT QUESTIONS – ANSWERS:

- How does fabric affect the environment?

Textile production impacts the environment in many ways. ... Additionally, synthetic fabrics like nylon are made from fossil fuels. Processes used in textile manufacturing use a lot of water, and they allow harmful substances like surfactants, which help dyes penetrate fabrics, or detergents to end up in our waters.

- What clothing materials are bad for the environment?

The Least Sustainable Fabrics

- 1) Polyester. A variety of products can be made from forms of polyester: t-shirts, blankets, rope, conveyor belts, and bottles. ...
- 2) Acrylic. ...
- 3) Cotton (Conventional) ...
- 4) Rayon (aka Viscose) ...
- 5) Nylon. ...
- 6) Organic or Recycled Cotton. ...
- 7) Organic Hemp. ...
- 8) Organic Linen.

- What fabric is most eco-friendly?

- 1)Organic Cotton
- 2)Lenzing Tencel
- 3)Hemp
- 4)Linen
- 5)Silk

- How does thrifting help the environment?

When you buy secondhand, you're preventing that massive waste of energy and resources on the production of new clothes. Thrifting is an easy way to make a difference in your own carbon footprint and take the small steps to lower the world's waste.

- How does transportation affect our environment?

The environmental impact of transport is significant because transport is a major user of energy, and burns most of the world's petroleum. This creates air pollution,

including nitrous oxides and particulates, and is a significant contributor to global warming through emission of carbon dioxide.

- What are the negative impacts of transportation?

The potential negative impacts of transportation on the environment can be listed as degradation of air quality, greenhouse gas emissions, increased threat of global climate change, degradation of water resources, noise and habitat loss and fragmentation.

- Which mode of transport is worse for the environment?

Admittedly, air transport is extremely polluting – but so are cars. Air traffic represents less than 2-3% of the global CO₂ emissions whereas road traffic accounts for around 10% of these direct emissions. Still, planes remain among the most polluting means of transport, together with cars.

- How can public transportation help the environment?

Reducing energy consumption and harmful carbon dioxide (CO₂) greenhouse gas emissions that damage the environment. Traveling by public transportation uses less energy and produces less pollution than comparable travel in private vehicles.

REMINDER

Fashion production makes up 10% of humanity's carbon emissions, dries up water sources, and pollutes rivers and streams. What's more, 85% of all textiles go to the dump each year. And washing some types of clothes sends thousands of bits of plastic into the ocean. We should all limit the actions that affect the environment for a better future.

5 Ways that you can make a difference:

It may be too daunting to think about everything that needs to change in order to make the clothing industry more transparent and less environmentally costly. But there are a lot of small things you can do to make a difference.

1. Buy **organic clothing**. Organic cotton is farmed without the use of pesticides which keeps our water safe.
2. Buy **American made clothing**. A lot of cotton is grown in the states, but its often exported to become clothing and then imported as a final product. Keeping the whole process in one country significantly reduces transportation related CO₂ emissions and fossil fuel use.

3. Hang dry your clothes in warmer months. You'll save money on your electric bill and some natural resources at the same time.
4. Recycle your clothing instead of throwing it away. There are many [donations centers](#) all over the country that are trying to have a huge impact on our landfill space- and they need your clothes!
5. Learn more about the whole process in less than 10 minutes from a recent NPR and Planet money [video series](#) about the t shirt life cycle.



Videos for a better understanding of the t-shirt process:

[The life cycle of a t-shirt - Angel Chang](#) (TED-Ed)

[The Life Cycle of a T-Shirt](#) (Christine Horner)

BIBΛΙΟΓΡΑΦΙΑ:

<https://blogs.furman.edu/nwilliams/environmental-impact/>

<https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographic>

<https://www.independent.co.uk/life-style/fashion/fabrics-environment-fast-fashion-eco-friendly-pollution-waste-polyester-cotton-fur-recycle-a8963921.html>

<https://serc.berkeley.edu/why-thrifting-is-good-for-the-planet-not-just-your-wallet/>

https://en.wikipedia.org/wiki/Environmental_impact_of_transport

<https://evergreendesignco.wordpress.com/2014/04/10/the-life-cycle-of-a-t-shirt/>