

## City of Brookings - Sustainability Council

### Clothing Sustainability: What is the problem and what can we do.

#### **What is the problem we are faced with?**

Industry studies demonstrate that the textiles sector is a significant contributor to the global economy, creating millions of livelihoods around the world.

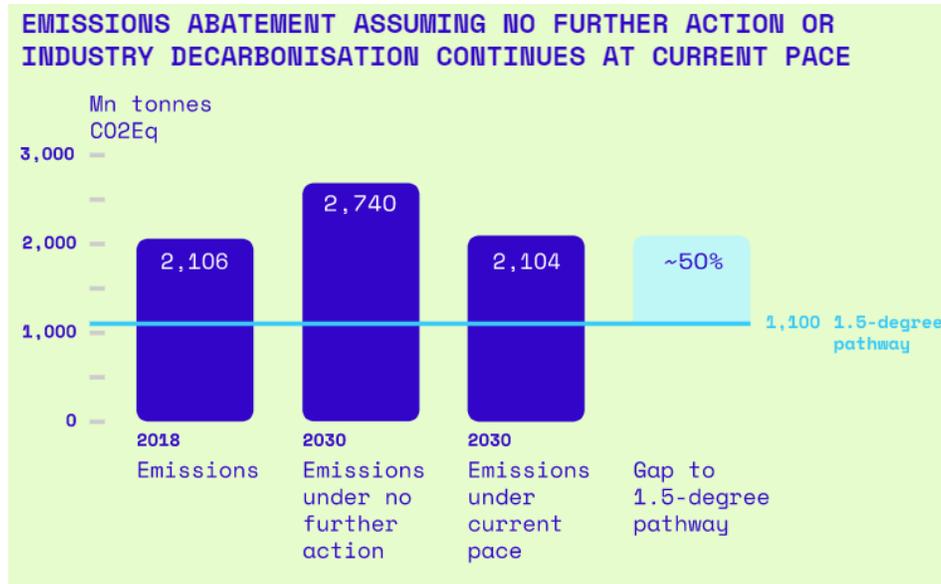
But global apparel production and consumption continue to rise, and the current 'take, make, dispose' model of production and consumption has many negative environmental and social impacts.

This following summary report presents data provided by multiple organizations and countries. This report is separated into the following elements:

- 1.) Carbon Emissions associated with the Garment industry
- 2.) Microfiber release into the environment
- 3.) Garment waste and effects on Landfills
- 4.) Recycling of Garments
- 5.) Roadblocks to the recycling of Garments
- 6.) Who can act to reduce emissions and waste production?
- 7.) Tips that can be used by citizens to reduce impact

#### **Carbon Emissions associated with the Garment industry**

- According to the [Fashion on Climate collaboration](#) if the fashion industry does not accelerate its response to climate change, it will by 2030 produce around twice the volume of emissions required to align with Paris Agreement global warming pathways. Industry produced 4% of global Carbon Emission



- The fashion industry produces 1.2 million metric tons of CO2 each year, according to a [MacArthur Foundation study](#). In 2018, it resulted in more greenhouse gas emissions than the carbon produced by France, Germany and the UK all together.

### **Microfiber release into the environment**

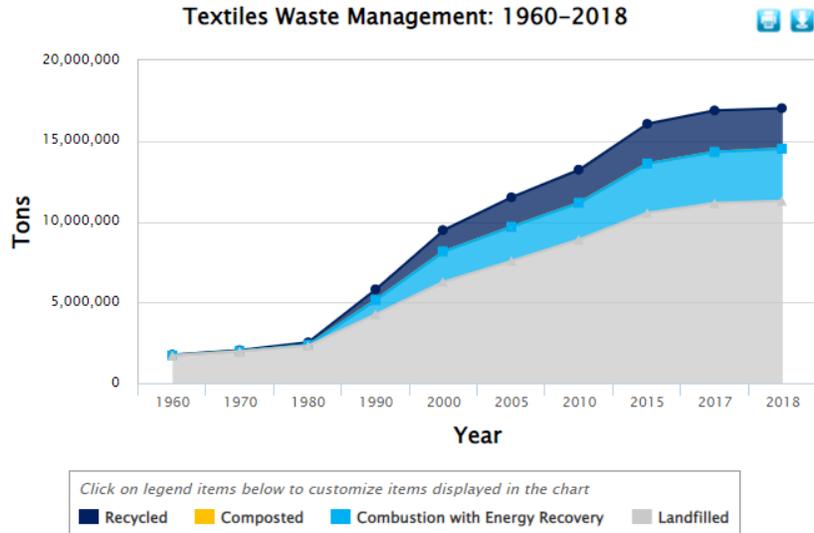
- Polyester, which is made from fossil fuels, is used for about 65 percent of all clothing. The production of polyester consumes 70 million barrels of oil each year. Additional fossil fuels are also utilized in large amounts to produce packaging and hangers.
- When clothes made from synthetics are washed, microplastics from their fibers are shed into the wastewater. It's estimated that [35 percent of the microplastics in the ocean](#) come from the fashion industry. Garments disposed in landfill can shed microfibers.
- [A study conducted for Patagonia](#) estimated that for every 100,000 people, up to 110kg of microfibers would be released into local waterways daily, which is equivalent to the pollution caused by approximately 15,000 plastic bags.
- Effective polyester recycling is limited. While some brands use "recycled polyester" from PET bottles, which emits 50 to 25 percent fewer emissions than virgin polyester.

### **Garment waste and effects on Landfills**

- [According to the EPA](#), the main source of textiles in municipal solid waste (MSW) for the United States is discarded clothing, although other smaller sources include furniture, carpets, tires, footwear, and other nondurable goods such as sheets

and towels. EPA estimated that the generation of textiles in 2018 was 17 million tons. This figure represents 5.8 percent of total MSW generation that year.

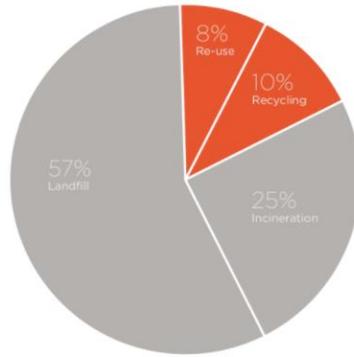
- Landfills received 11.3 million tons of MSW textiles in 2018. This was 7.7 percent of all MSW landfilled.



- According to [The Apparel Industry's Environmental Impact in Six Graphics](#) document, the average consumer now buys 60% more items of clothing than in 2000, but each garment is kept for half as long as consumers discard items more quickly. These buying habits contribute to the 39 million tons of post-consumer textile waste that is generated (at a minimum) worldwide each year – primarily in the form of garments.

### Recycling of Garments

- “The current fashion system uses high volumes of non-renewable resources, including petroleum, extracted to produce clothes that are often used only for a short period of time, after which the materials are largely lost to landfill or incineration,” says Chetna Prajapati, who studies ways of making sustainable textiles at Loughborough University in the UK.



Source: Pulse Report, 2017

- Industry figures suggest modern clothing will have a [lifespan of between 2-10 years](#) – with underwear and t-shirts lasting just one to two years, while suits and coats last for around four to six years.
- American [throws away 37kg of clothes every year](#).
- The recycling rate for all textiles was 14.7 percent in 2018, with 2.5 million tons recycled. Within this figure, [EPA estimated](#) that the recycling rate for textiles in clothing and footwear was 13 percent based on information from the American Textile Recycling Service.
- Globally just 12% of the material used for clothing ends up being recycled. Compare that to paper, glass and plastic PET bottles – which have recycling rates of 66%, 27% and 29% respectively in the US – and it is clear clothing lags behind.

## **Roadblocks to the recycling of Garments**

- Less than one percent of clothing is recycled to make new clothes.
- According to a study conducted by [Patagonia](#) most of the recycled polyester being used now by leading fashion brands in fact comes from bottles rather than old clothing.
- Modern garments blended with multiple types of fabric materials. This makes them hard to separate so they can be effectively recycled. Sorting textiles into different fibers and material types by hand is **labor intensive, slow and requires a skilled workforce**. Growing use of modern fabric blends in clothing also makes it hard to do this mechanically too.
- Blends are most suitable for mechanical fiber recycling, where fabrics are shredded and pulled to transform them into fibers of shorter length. The fibers in clothing are polymers, long chains of chemically linked molecules. Washing and wearing clothing shorten and weaken these polymers, so by the time a garment is discarded, the polymers are too short to turn into a strong new fabric. Shorter fiber length produces fabrics of lower quality and strength, so the results from this kind of recycling can't be used for clothing. Instead these tend to then be "downcycled" to **produce other composite fiber materials** such as thermal insulation or carpet for use in the building industry.
- Most of today's textile-to-textile recycling technologies cannot separate out dyes, contaminants, or even a combination of fabrics such as polyester and cotton.

## **Who can act to reduce emissions and waste production?**

### Brands and Retailers:

- Have influence across the value cycle.

### Factories, Material producers and other upstream players:

- Must be fully involved in and committed to decarbonization programs.

### Citizens:

- We all need to work to extend the longevity of the clothes we wear. We can do that by washing less often and at cooler temperatures
- Ensuring that we recycle or enable reuse, rather than throwing things away.
- Maintain a goal that to be a more sustainable shopper. As data demonstrates, the fashion industry is one of the most polluting in the world and plays a key role in accelerating global warming. A 2020 report by the Global Fashion Agenda found that the fashion industry's emissions are set to rise to around 2.7 billion tons a year by 2030. That's an alarming stat, and it can make shopping and contributing to the cycle feel dreadful.

## **Tips that can be used by citizens to reduce impact**

1. Reacquaint yourself with the garments that you currently own. If you don't need anything new for work, school, or life, put your purchases on pause and take a few weeks or months to repair and restore what you already own, and rediscover pieces that maybe got shoved to the back of your closet. One survey found that 20 percent of clothing in the US is never worn; in the UK, it is 50 percent. Online shopping has made impulse buying and returning items easier.
2. Secondhand is an easy and affordable way to be more sustainable. Reuse is much greener than recycling, and shopping secondhand is a great way to afford higher-quality clothes that last longer and have higher resale value, creating a virtuous circle of sustainability. The global apparel resale market increased in value from 18 billion U.S. dollars in 2016 to 27 billion U.S. dollars in 2020. A 2020 survey found that in 2019 seven percent of the average U.S. consumer's wardrobe consisted of resale clothing, a proportion that was expected to rise to 17 percent by 2029.
3. Don't leave out the human element in your environmental commitments. A sustainable society takes care of people, animals, and the planet in tandem. In other words, think beyond buying recycled or organic fibers or brands.
4. Learn how to properly care for the clothes you own. Extend the life of your garments by learning how to properly care for different fabrics, investing in tools to care for more delicate textiles like knitwear and silks, and washing your wardrobe less (in cold water, and air drying whenever possible).
5. Donation and Consignment reuse of clothing. There are several local resources that can be used to enhance the longevity and thus increasing the sustainability of your clothing. These resources including both donation and consignment. A yard sale is another method to pass unwanted clothing onto other families for use. Local resources include:

### Donation

- 1.) Goodwill of the Great Plains  
625 Main Avenue  
Phone 605-692-2085
- 2.) Brookings Domestic Abuse Shelter  
807 Onaka Trail  
Phone 605-692-7233
- 3.) Local Places of worship
- 4.) The Salvation Army of Brookings –  
Share the warmth (note, restricted to winter other wear).  
Resource site: <https://centralusa.salvationarmy.org/brookings/share-the-warmth/>

### Consignment

- 1.) Trendz  
307 6<sup>th</sup> Street

Phone 605-697-7443

- 2.) Little Rascals Consignment and Studio  
2035 Orchard Dr. Suite 5  
Phone 605-633-6798

**Resources –**

- 1.) WARP - [Textiles | WRAP](#)
- 2.) The Environmental Protection Agency - [Textiles: Material-Specific Data | US EPA](#)
- 3.) British Broadcasting Corporation - [Why clothes are so hard to recycle - BBC Future](#)
- 4.) Global Fashion Agenda - Key Report – Fashion on Climate - [Fashion on Climate \(globalfashionagenda.com\)](#)
- 5.) World Resource Institute - [The Apparel Industry's Environmental Impact in 6 Graphics | World Resources Institute \(wri.org\)](#)
- 6.) Vogue - [Sustainability Tips: 3 Experts Weigh in on How to Be a Better Shopper | Vogue](#)
- 7.) Statista - [U.S. apparel and footwear resale market - statistics & facts | Statista](#)