

ECF CIRCULAR FASHION RESOURCES FOR STUDENTS

OUR JEANS AND THE PLANET

FACT & REFERENCE SHEET

General facts

Around 2 billion jeans are produced each year worldwide.¹

Making one pair of jeans uses 3,781 litres of water, from the production of the cotton to the delivery of the final product to stores. This equates to the emission of around 33.4kg of carbon dioxide equivalent.²

Pick your raw material

The production of the fibres for one pair of jeans uses 10m² of land.³

Sustainability standard Better Cotton Initiative (BCI) now reaches 2.7 million farmers in 23 countries.⁴

Cotton is responsible for the use of 24% of insecticides and 11% of pesticides globally, more than any other single crop.⁵

It is estimated that replacing conventional cotton with its organic alternative can reduce 62% of energy consumption.⁶

By using organic pest control methods and improved irrigation – including scattering cotton seeds in a more organised manner and avoiding flooding the crop – water use for cotton farming can be reduced, and increase cotton yields by 6%, doubling farmers' income.⁷

57% of consumers are willing to change their purchasing habits to help reduce negative environmental impact.⁸

The maximum amount of recycled cotton in a pair of jeans is 40%.⁹

¹ Circle Economy (2020), [Exploring the global environmental and socio-economic effects of pursuing a circular economy: Case studies on denim jeans and mobile phones](#)

² The World Bank (2019), [How Much Do Our Wardrobes Cost to the Environment?](#)

³ Levi Strauss & Co. (2015), [The Life Cycle of a Jean: Understanding the environmental impact of a pair of Levi's® 501® jeans](#)

⁴ Better Cotton Initiative, [2020 Annual Report](#)

⁵ WWF, [Cotton Farming](#)

⁶ Global Fashion Agenda (2020), [CEO Agenda](#)

⁷ House of Commons, Environmental Audit Committee (2019), [Fixing fashion: clothing consumption and sustainability](#)

⁸ IBM (2020), [Meet the 2020 consumers driving change](#)

⁹ MUD Jeans, [Natural and recycled materials](#)



A study of jeans that contained 2% elastane showed that producing the fibres and denim fabric released 7kg more carbon dioxide than those without, in an analysis done by Levi Strauss, suggesting that choosing raw denim products can have less impact on the climate.¹⁰

Transforming fibres to fabric

The production of 1 tonne of textiles generates 17 tonnes of carbon dioxide equivalent (compared to 3.5 tonnes for plastic and less than 1 tonne for paper).¹¹

Assemble your jeans

Approximately 15% of textiles intended for clothing ends up on the cutting room floor.¹²

Style it out! Add finishing effects to your jeans

The Tonello All-in-One machine with NoStone® technology can reduce water consumption and waste by up to 95% and reduce chemical waste and consumption by 50% as chemicals are jet-sprayed within the machine drum versus in open air. The machine eliminates potential worker exposure to chemicals by 100%.¹³

Cleaning up

Approximately 20% of industrial wastewater pollution originates from the textile industry worldwide.¹⁴

By using largely recycled water, freshwater consumption at a denim manufacturing factory can be reduced to 1.5-3 litres, while traditional denim manufacturers use 85-100 litres of freshwater in finishing each garment.¹⁵

Time to dry off

Using an air dry system in a garment factory reduces 90% of the energy consumption compared to conventional machine drying.¹⁶

By adopting an air dry system in clothing production, a garment factory can save 400,000KWH of power in a year – enough power to drive a car for 1,129,400km, or equivalent to the energy generated from burning 141,350kg of coal.¹⁷

¹⁰ BBC Future (2020), [Can fashion ever be sustainable?](#)

¹¹ Eunomia (2015), The potential contribution of waste management to a low carbon economy, as cited in Ellen MacArthur Foundation (2017), [A New Textiles Economy: Redesigning fashion's future](#)

¹² Timo Rissanen (2005), [From 15% to 0: Investigating the creation of fashion without the creation of fabric waste](#)

¹³ Frontline Clothing, [Sustainability](#)

¹⁴ Kant, R. (2012), [Textile dyeing industry: An environmental hazard](#), as cited in Ellen MacArthur Foundation (2017), [A New Textiles Economy: Redesigning fashion's future](#)

¹⁵ Frontline Clothing, [Sustainability](#)

¹⁶ Frontline Clothing, [Sustainability](#)

¹⁷ Frontline Clothing, [Sustainability](#)

Your jeans are ready for sale!

Jeans manufacturer Levi Strauss estimates that a pair of its iconic 501 jeans will produce the equivalent of 33.4kg of carbon dioxide equivalent across its entire lifespan. Just over a third of those emissions come from fibre and fabric production, while another 8% is from cutting, sewing and finishing the jeans. Packaging, transport and retail accounts for 16% of the emissions while the remaining 40% is from consumer use – mainly from washing the jeans – and disposal in landfill.¹⁸

¹⁸ BBC Future (2020), [Can fashion ever be sustainable?](#)

