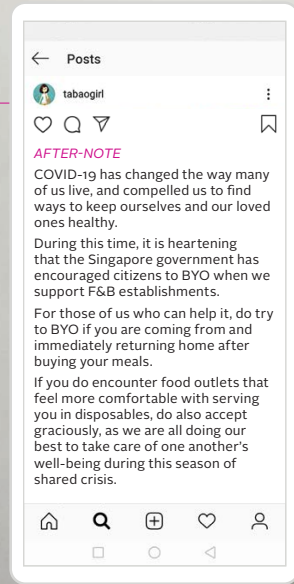


### Did you know?

Scientists estimate that the total amount of packaging waste from the burgeoning food delivery businesses in China's megacities has surged seven-fold from 0.2 million in 2015 to 1.5 million metric tons in 2017<sup>2</sup>. That includes 1.2 million tons of plastic containers, 175,000 tons of disposable chopsticks, 164,000 tons of plastic bags and 44,000 tons of plastic spoons. Put together, this surpasses the amount of residential and commercial trash of all kinds disposed of annually by the city of Philadelphia in the United States. In 2018, the estimate grew to two million tons<sup>3</sup>.

In India, 26,000 tonnes of plastic waste are generated daily, most of which are contributed to by food consumption<sup>4</sup>. Although no authoritative data is available, online retail and food delivery business are acknowledged to be a generous contributor to the widening use of plastic. Deepinder Goyal, CEO of Zomato — one of the largest food aggregators in the world — said in a September 2018 blog that "orders through food-delivery aggregators was adding up to 22,000 tonnes of plastic waste every month in India<sup>5</sup>."

- <https://www.deepdyve.com/lp/elsevier/packaging-waste-from-food-delivery-in-china-s-mega-cities-FWSKD1ptmK?>
- <https://www.nytimes.com/2019/05/28/technology/china-food-delivery-trash.html>
- <https://timesofindia.indiatimes.com/city/gurgaon/the-cost-of-convenience-plastic/articleshow/70930076.cms>
- <https://qz.com/india/1693117/indias-plastic-waste-crisis-is-too-big-even-for-modi/>



### FEATURE

**TITONIUS KARTO** is the Director of PT Suryamandiri Tekstil Buana, a Jakarta-based garment manufacturer. With more than 50 years of industry experience, the company is committed to responsible productions and processes. It works closely with companies such as Threadapeutic and Bikin Bikin Crafts Indonesia to develop sustainable textile using fabric offcuts.

Titonius is also the Founder and CEO of Ku Ka (kuka.co.id), an online marketplace that helps Indonesian local artisans – often little known – to reach new markets.

### TITONIUS KARTO

# Sustainable Fashion

The world population grew from less than two billion in 1900 to 7.8 billion today, and the average life expectancy has doubled and is now above 70 years. The population explosion drives the production of goods to meet the demand from every aspect of human life.

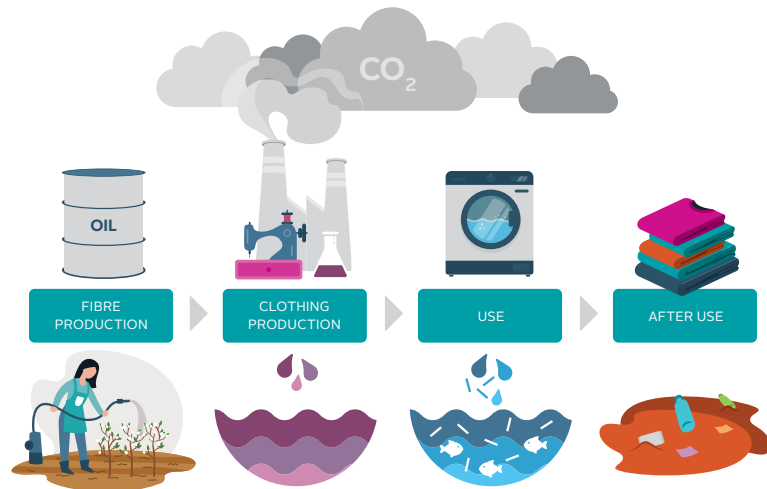
Over the past 20 years, the proportion of the world population living in extreme poverty has almost halved. Of the seven billion people in the world today, more than 90% live in middle- and high-income countries. Economic growth so far has been fuelled by consumerism, with the population's spending power increasing over time.

The United Nations (UN) has predicted that the world population will increase by another four billion by 2100. A larger population means higher demand, which leads to higher production and investment returns. While it may paint a rosy picture for people who believe in consumerism, we should be worried that the way we consume may exhaust our planet's resources very soon, and greenhouse gases emitted from manufacturing activities may eventually bring apocalypse to our civilisation if we do not act collectively to tackle sustainability issues.

Understandably, terms like "low carbon", "sustainable", "organic" and "Earth-friendly" are becoming the buzzwords of recent times. More commercial brands have also jumped on the sustainability bandwagon, including the garment industry that is increasingly aware of its climate impact and is determined to be socially and ecologically responsible.

Around 10% of global greenhouse gas emission is contributed by apparel manufacturing. Due to its long supply chain and energy-intensive production, the industry consumes more energy than the aviation and shipping industries combined, according to the UN. If nothing is changed, a study released by the Ellen MacArthur Foundation predicts that by 2050 more than 25% of the entire global carbon budget will go to the garment industry.

To put this in perspective, let's look at the environmental impact of many people's favourite clothes – cotton t-shirts and jeans. The World Wildlife Fund estimates that on average 2,700 litres of water are needed to make one cotton t-shirt, which is equivalent to a person's water consumption for 900 days. Data from Levi's



Today's clothing system puts pressure on resources, pollutes the environment and creates negative societal impacts. Source: Ellen MacArthur Foundation

shows that making one pair of jeans produces the same amount of greenhouse gases as driving a normal car for 111 kilometres.

The numbers are shocking, aren't they? The fundamental issue lies in the almost completely linear system – a tremendous amount of non-renewable resources is used to produce clothes, and after being worn for only a short time, these clothes are mostly (85% in the United States) sent to the landfill or incinerated. Worse still, more than 60% of the fabric fibres are synthetics, derived from fossil fuels, and can sit in landfills for up to 200 years!

The situation has been worsened by the emergence of 'fast fashion', a business model built around producing clothing as cheaply and rapidly as possible to encourage consumers to buy more, faster. Once upon a time, fashion seasons followed the natural change of season – spring, summer, fall and winter. Today, the

fashion industry is creating more than ten seasons a year, with some churning out as many as 52 'micro-seasons'.

With the increase in the intensity and frequency of extreme weather events globally, nobody should sit still. The garment industry needs to be responsible and take action to fight climate change as well. To guide the transformation of the industry, the concept of the circular economy provides some key principles that are worth our serious consideration.

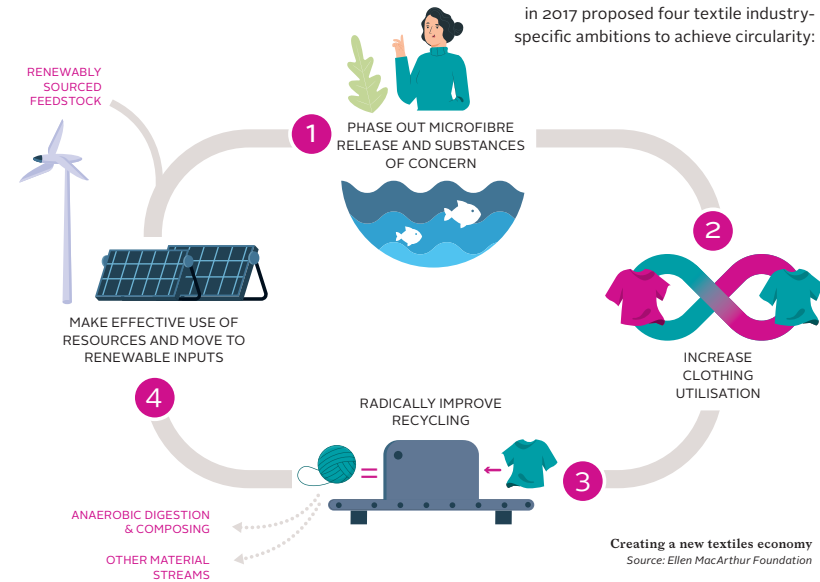
The World Economic Forum describes a circular economy as "an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems and business models".

SOME PRINCIPLES OF A CIRCULAR ECONOMY ARE:

1. Products are designed to have their components reusable; disposable parts are to be avoided.
2. Consumables should be environmentally friendly, whereas durable products should be upgradeable and made to last.
3. The energy required to fuel product cycles should be renewable by nature.

## HOW CAN THE GARMENT INDUSTRY ADOPT THESE PRINCIPLES AND TRANSFORM ITSELF INTO A CIRCULAR ECONOMY?

A report by the Ellen MacArthur Foundation in 2017 proposed four textile industry-specific ambitions to achieve circularity:



Creating a new textiles economy Source: Ellen MacArthur Foundation

Fabric is marked digitally and manually at the pre-production stage with high precision to minimise post-cutting wastage.



The Regenerative Organic Certification standard helps garment manufacturers identify textile suppliers that take responsible steps towards conserving the environment.

The textile industry's attempt to adopt a circular economy requires global and system-level collaboration in addressing complex systemic issues. Raw material producers, textile factories, garment manufacturers, fashion brands, and industry regulation bodies need to play critical roles along the production chain to make this change happen. While the effort to drive the transformation is still in its infancy, some incremental improvements are already being made to reduce negative environmental impacts before the overhaul of the entire system is possible.

As a garment manufacturer, we have taken some steps to that end. For instance, we have moved beyond the standard measure of corporate responsibilities – such as employees' wages, gender equality, fair labour practices and so on – to a real business model transformation that focuses on sustainable production. This includes introducing new approaches to seek out

alternative fabric sources, and to audit the supply chain, fabric consumption and post-production waste. These approaches have become the new norm after working closely with our clients to assure them that these changes actually do not increase the cost of production.

In fact, one of the biggest costs in apparel manufacturing is the cost of textiles. On top of that, the plantations that grow the crops used in the apparel industry, including cotton, linen, hemp and indigo, run some of the most polluting productions in the world. Fortunately, a research by the Rodale Institute has shown that using the regenerative method of organic farming could help to reverse the effects of climate change. As part of our transformation efforts, we have been referring to the Regenerative Organic Certification standard to help us identify textile suppliers that take responsible steps towards conserving the environment.

Addressing wastage issues should also be given high priority. To do that, we digitally and manually mark the fabric at the pre-production stage with high precision (based on sizing and pattern



Upcycling in practice – the lady is carrying a handbag made of fabric offcuts.

repetition) to minimise post-cutting wastage. Although the amount of fabric used to make a piece of garment is often determined by the buyer, our pre-production team is often able to reduce wastage by 20% to 30% on average.

On top of that, we always send the remaining fabric for 'upcycling'. Upcycling is the process of repurposing discarded materials for other uses, and it comes in many forms. We have been working with brands such as Threadapeutic and Bikin Bikin Crafts Indonesia to explore the concept of upcycling. The creative process of reimagining a different use for each piece of waste is key to reducing waste and encouraging multiple uses for materials in order to prolong

their useful lives. This presents an opportunity for designers to lead the way in utilising tonnes of textile waste to create new products to satisfy consumers' demand. Technology is again leveraged in this process to develop a more sustainable method of production.

However, the most important factor in the equation is none other than the consumers themselves. The word 'consume' literally means to 'destroy', as by fire or disease, to squander, and to use up. However, consumerism need not be destructive. Instead, it could potentially be a powerful force in the circular economy. With increasing awareness about the fashion industry's impact on the environment, consumers can adjust their lifestyle choices by reducing the purchase of 'fast fashion' products, increasing clothes utilisation, and saying no to brands that neglect sustainability.

The next time you shop for your wardrobe, know that your very choice can help the industry adapt to this new reality and transit to a circular economy – one that minimises waste and gets the most out of existing resources. ♻️