

Start-ups Clean up Clothes – The Whole Fashion Industry, not Just the Shirt

When we put on our clothes in the morning, we probably don't think about their environmental impact. It's enormous, as the clothing industry causes 10 percent of global greenhouse gasses and 20 percent of water pollution. Start-ups in Southeast Asia have sustainable solutions.

Clothes have a Massive Environmental Impact

The clothing industry is indeed huge, and so is its environmental footprint. The industry employs more than 300 million people, Asia Fund Managers [said](#), and it is valued at more than \$1.7 trillion. More than 50 percent of the world's fibres and fabric come from Asia, the Ethos Company [reported](#), with much of it from cheap fast fashion companies. There are nearly 44,000 companies manufacturing textiles in China alone, for instance, and companies such as Singapore-headquartered Shein produce tens of thousands of garments per day.

All those clothes have a huge environmental impact. The fashion industry create about 10 percent of global greenhouse gas (GHG) emissions, McKinsey [said](#), and less than 1 percent of clothing is recycled. Fashion is also responsible for about 20 percent of industrial water pollution, according to the [Asia-Europe Environment Forum](#), and it contributes 35 percent of oceanic microplastic pollution.

Regulations are Forcing Change

While Asia keeps churning out clothes, other regions such as the European Union (EU) are focusing on reducing the environmental impact. More than 70 percent of imports of textiles and clothing in Europe come from Asia, the Asia Fund Managers [said](#). About half of those textiles come from China, Bangladesh and Turkey, with Cambodia, Vietnam, India, the UK, and some other countries making up the rest.

The EU's executive arm has called for more sustainable fibres by 2030 and will ban the destruction of unsold inventory. "It's time to end the model of 'take, make, break, and throw away' that is so harmful to our planet, our health and our economy," said executive vice-president Frans Timmermans. The proposals allow consumers shopping for clothes to "make smart environmental choices."

The impact could be massive. "Leading branded apparel companies can suffer market value destruction ranging up to 30 percent of their long-term margins and growth assumptions are reset at lower levels following a shake-up of their existing low-cost model," SmartKarma writer [Devi Subhakesan](#) told Asia Fund Managers.

Reuters similarly [said](#) the new European Union Strategy for Sustainable and Circular Textiles is among the biggest seismic shifts set to transform the global textile industry. "All companies selling textiles – clothes, mattresses, car upholsteries, and the like – will have to meet certain standards in order to sell their wares to customers in the EU. This includes making sure products are durable, free from hazardous substances, and comprise mainly recyclable fibres. The changes will have a resounding impact throughout Asia."

Asian Firms are Working on Solutions

While cotton and polyester are the most widely used and environmentally impactful materials for making textiles, large companies across Asia started making more sustainable fabrics and clothing more than a decade ago. While volumes have been very small, the changes in the EU could be a catalyst for production to ramp up higher. In a not-so-distant future, Mongabay [said](#), fashion biomaterials made from plant leaves, fruit waste, and lab-grown microorganisms may replace animal-derived textiles, with implementation at first on a small but quickly expanding scale, but eventually on a global scale.

Additionally, [Canopy](#) founder Nicole Rycroft told Ethos, “innovations like the use of recycled textiles to make viscose/lyocell/rayon represent an incredible opportunity for the fashion sector to close the loop and dramatically reduce its impact”. Solutions such as viscose made from discarded clothing or microbial cellulose grown on food waste produce as much 130 percent fewer GHG emissions and 100 percent less land-use impacts while having 5 times lower impact on biodiversity than conventional materials.

Start-ups offer New Models for Agricultural-Based Fabrics and for Recycling

Along with large companies that started shifting to producing fabrics or clothes made from agricultural products or waste, innovative start-ups all across South and Southeast Asia are also creating new fabrics. A variety of examples highlight the breadth of the innovation that start-ups are using to transform the fashion industry.

In Vietnam, for instance, ECOSOI, founder Vu Thi Lieu [said](#) the firm produces fibre from pineapple leaves. Farmers harvest more than 1 million tons of pineapples and discard several million tons of pineapple leaves every year, often by burning them. ECOSOI turns pineapple leaves into green fibres to protect the environment, improve the value of pineapples, and create livelihoods for rural and disadvantaged people.

AltMat in India similarly transforms agricultural waste into fibres and yarns, using proprietary technologies and sustainable processes. It says it uses “zero hazardous chemicals. While we use very little water, all of it is treated and a lot is reused. Alt Yarns are environment-conscious yarns made from food crop waste and plant waste.”

Another firm is NEXTEVO, which also produces sustainable fibre made from pineapple leaves for use in footwear, apparel, home textiles and upholstery or interior furnishings. Pineapple leaves are collected and purchased from local farmers, instead of their discarding the leaves as waste.

Other start-ups reduce waste by reusing fabrics that would otherwise go to landfill.

“Our mission is simple,” says [The R Collective](#) in Hong Kong – “to end fashion waste by rescuing, reusing and recycling textile waste into wardrobes. We rescue, reuse and recycle waste into a wide variety of branded, responsible corporate products.”

Moreloop in Thailand similarly maximises the value of surplus fabrics and minimises waste in the fashion industry via a two-pronged approach. It sells surplus fabrics that would otherwise go to waste so that designers and makers can find materials they need, and it also transforms surplus fabrics into new products. Founded 2018, Moreloop buys waste virgin fabrics from garment factories and resells them for its customers to repurpose.

Clothing Dyes are Getting Better Too

While fabric itself is an issue, so is the dye used to colour clothes. Start-ups are also working on improving the process for dyeing fabrics.

[Sodhani Biotech](#) in India, for instance, uses herbal extraction and downstream processing to obtain dyestuff from plants, plant waste and microorganisms. The natural dyes offer advantages such as a carbon footprint that is about 60 percent lower, *Fabric Architecture Magazine* [said](#), and the sludge remaining at the end of the process can be used to produce fully biodegradable vermicompost.

[KBCols Sciences](#), also in India, produces natural dyes from agricultural or industrial waste, saying it is “reducing harmful chemical colors in almost every industry and with hopes to change the landscape of dyeing in the apparel industry as well as in high-end value sectors.”

Stories of Start-up Solutions

Start-ups are indeed creating highly innovative solutions to reduce the environmental impact of the clothing industry. We’ll share stories of start-ups in the fashion in future articles over the coming weeks.