Used textiles and textile waste
– experiences from a Danish re-use actor

An environmental challenge throughout the value chain

Significant environmental-, resource- and climate related effects arise as a direct consequence of production and consumption of textiles, making it the fourth most environmentally harmful consumption good in the EU after transport, housing and food. Each year, the consumption of textiles results in the use of around 1.3 tonnes of raw materials and more than 100 cubic metres of water per EU citizen. And the issue is growing. Since 1975 the average consumption of textiles has tripled, while the use of each piece of clothing has decreased significantly.

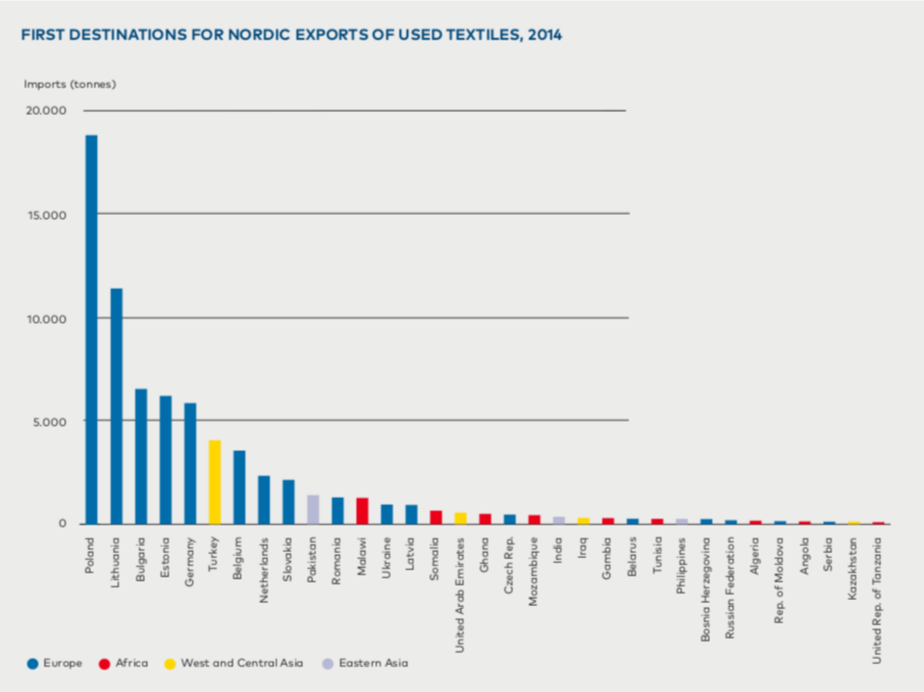
Research shows, that the fastest and most simple way to increased sustainability within textiles, is to reduce consumption as much as possible by prolonging the lifetime of textile products via e.g. maintenance, repair, and reuse. Part of the reuse cycle can be facilitated via C2C swapping and selling, but also via new business models where private companies resell, rent out or repair textiles. However, when focusing on the bigger picture and how to handle the larger amounts of used textiles and textile waste, one should acknowledge the need for professional collection, sorting and handling by specialists, who have experience in operating on both national and international markets for reuse and recycling.

What happens to used textiles in Denmark?

In 2016, 85,460 tonnes of new textiles were introduced to the Danish market. This corresponds to just under 15 kilos of textiles per citizen. After its first use, used textiles can be handed over for separate collection which, in Denmark, is usually done through collection containers or reuse shops, run by private actors. Alternatively, used textiles can be disposed of in various ways via the municipal waste management system, including in residual waste, via bulky waste schemes or at recycling stations.

Approximately half of the marketed textiles are collected after their first use, but once collected, there are significant variations in how the collected material is handled. As a general rule, collected textiles are traded as a commodity and only very small amounts are donated directly for charity. Around one-third of the material which is collected in Denmark is resold via reuse shops in the domestic market, whilst the remainder is traded on international markets. Thus, in 2016, more than 60% of the collected textiles were exported – primarily to sorting facilities in eastern- or central Europe where they were sorted and redistributed for reuse, recycling or disposal both within and outside the recipient countries.

In a previous report from the Nordic Council of Ministers, the destinations for the total Nordic quantities of exported used textiles have been examined. The figure in the following page presents results from 2014 but which, according to Trasborg, are still in close line with reality in 2020. However, the figure only presents the “first destination” for the textiles and does therefore not take further export routes into account.

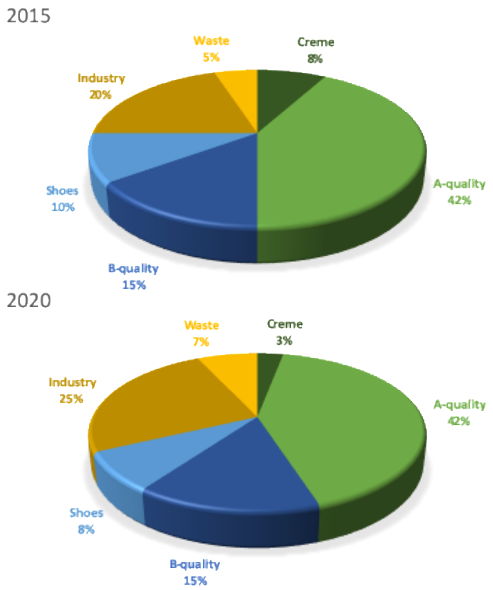


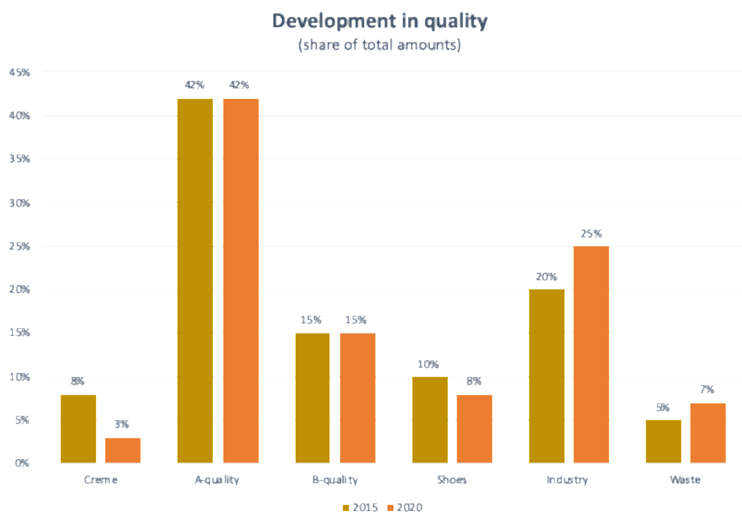
Source: *Watson, D. and Palm, D. (2016): Export of Nordic used textiles – fate, benefits and impact, Nordic Council of Ministers*

Reuse markets are under significant pressure

Markets for reusable textiles are under pressure. For three generations, Trasborg have collected and sorted textiles in Denmark, but during the past 5-10 years they have seen the quality of the collected material going down. Trasborg sorts the collected textiles in more than 240 categories which can generally be divided into six "main groups" as seen in the figure below. In short, the development over the past 5 years has meant, that the proportion of "cream" (the highest quality of reusable clothing) and shoes has been declining, while the proportion of textiles for industry (cloths and fillings) has increased. The proportion of waste has also been on the rise.

Trasborg sorting data, divided in six main groups





In Denmark, this development is partly due to the fact that new markets have been created for resale of the best qualities facilitated by for example C2C platforms and new business models. But it is partly also because the quality of a significant part of the textiles which are sold on the Danish market, in itself has been declining. Further, it is also due to the fact that it, in many places, is unclear to the citizens which textiles (reusable textiles vs. textile waste) they can drop off in which containers. Thus, the quantities of worthless clothing and downright waste that end up in the collection containers, increase every year.

In addition to these national developments, international trends are also contributing to increased pressure on the reuse markets. Many of the "traditional" recipient countries for the used Danish textiles are experiencing economic progress, which means that consumers in these countries have better opportunities for e.g. buying new textile products rather than reused ones. In addition, in some countries, new textiles are now even cheaper than reused ones, making it even more difficult to find markets for the Danish reused textiles. Finally, it is anticipated that the markets for both reused textiles and textile waste will come under further and unprecedented pressure after 2025, as the coming legal requirement for separate collection of textiles in all EU countries will undoubtedly result in a massive increase in collected volumes of used textile.

The consequences have been, that the price of reused clothing is generally falling and that Danish exporters are finding it harder to find buyers for the collected textiles (especially the lower grades). Further, the recipient countries, which in general must be assumed to have waste management solutions that are environmentally inferior compared to the Danish ones, are increasingly forced to dispose of the material in inappropriate ways, such as via burning or uncontrolled landfilling.

Markets for recycling are currently underdeveloped

If/when reuse is no longer an option, and the textiles are considered as waste, one must explore the possibilities for recycling. Efficient recycling partly depends on the condition of the material and partly on whether there is a market that demands the recycled material. But the potential also depends on the extent to which appropriate recycling technologies, that can handle the large amounts of mixed materials in various fibre types, compositions, colours and finishes, are available.

In the beginning of 2020, the status of textile recycling is that the "good solutions", which are acceptable with respect to both environmental and working environmental standards, are still lacking on a large scale. These years, all over the world, we see massive investments in research and development, which we expect will result in solutions that can separate and/or recycle used, mixed textiles, with the ultimate aim of producing new textiles. But these kinds of solutions are still not available on an efficient and scalable level.

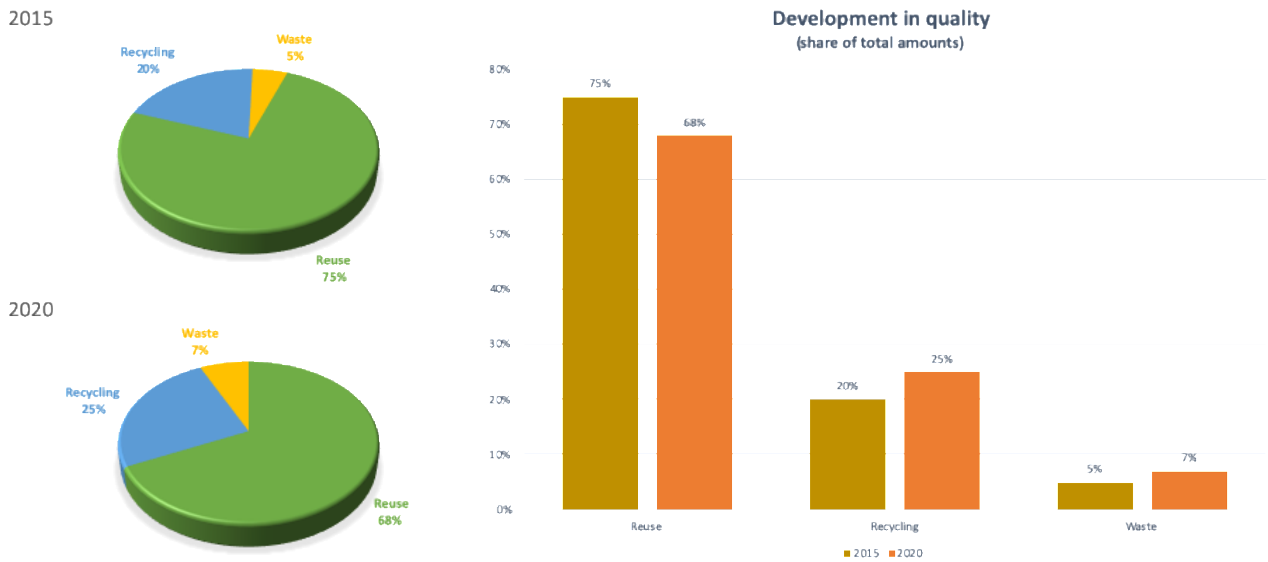
At present, the alternative is therefore various mechanical methods that can separate specific types of textiles into fibres, with which one can then produce selected mono-material products or non-woven products such as stuffing in mattresses and car seats, furniture sheets and blankets. Selected European players offer this technology, but markets do not currently match the volumes. Alternative solutions that take place, for example at a technologically low level in other parts of the world, including India and Pakistan, can be extremely problematic in terms of living up to sufficient environmental and working environmental standards.

Markets for used textiles and textile waste are under change

Based on these challenges within both reuse and recycling, it has become more difficult over the past 5-10 years to secure the environmentally (and economically) best possible treatment for used textiles. This is reflected in the market price of the used textiles which is declining – for some categories even negative.

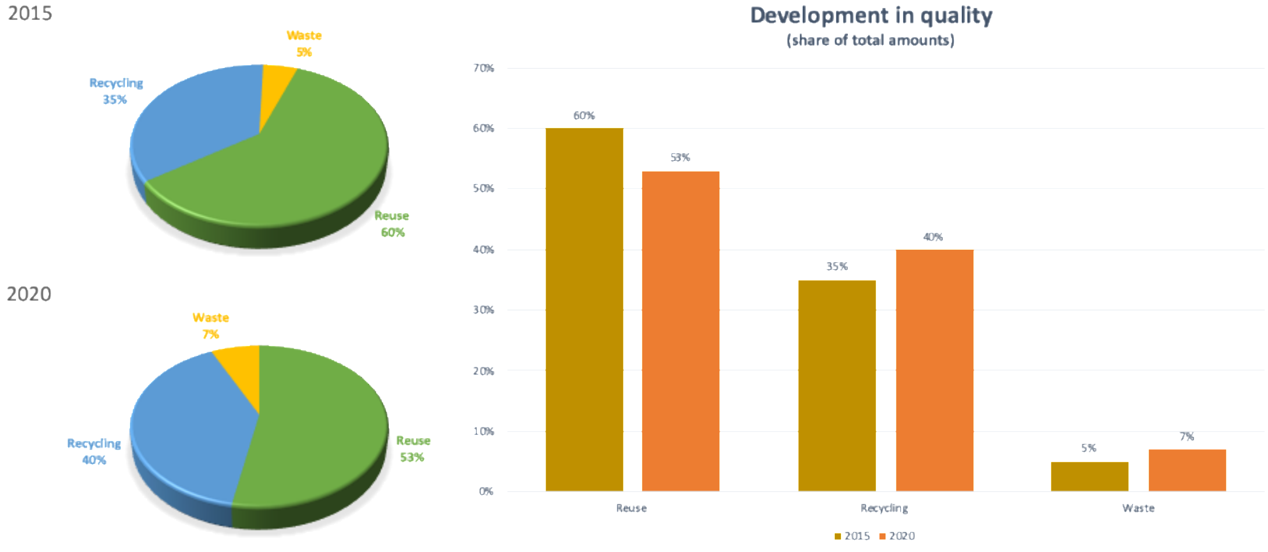
Traditionally, the categories "cream", A-quality, B-quality and shoes have been considered suitable for direct reuse, while the industry-quality is suitable for recycling. In this case, the picture can be presented as in the figure below, where it becomes clear, that the proportion of textiles for reuse has been declining, while the proportion of waste for both recycling as well as for incineration or landfilling has been increasing.

Trasborg sorting data, divided in different treatment options



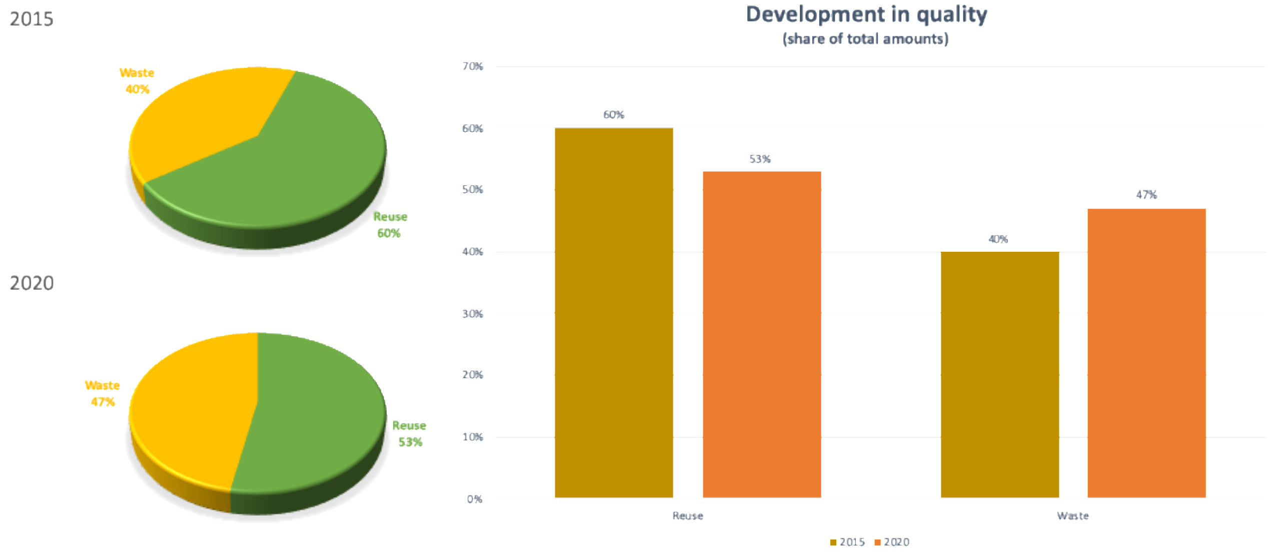
However, if one delves a bit further into the markets that receive the different categories, one can also argue that the B-quality should be considered as textile waste for recycling, since it is mainly exported to India and Pakistan, where the primary treatment option is shredding and decolorisation. In this case, the proportion of actual reuse becomes even smaller, while the proportion of textile waste for recycling fills up considerably more, as is illustrated in the figure on the following page.

Trasborg sorting data – alternative view (I)



However, based on the current status of the recycling markets that are still at the development stage, some could also argue that the B-quality as well as the industry-quality are in fact waste. In that case, one could also choose to present the same data as it is done in the following figure.

Trasborg sorting data – alternative view (II)



In which way the quantities are to be considered and evaluated, depends on the eyes of the beholder. But for an experienced reuse player like Trasborg we first and foremost see that the markets for used textiles and textile waste are changing rapidly and that more dialogue and closer cooperation along the entire value chain is needed, if we are to achieve sustainable solutions for the large quantities of textiles that we are facing here in Denmark, as well as in the rest of the world.

References

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