Valuing Our Clothes:
the cost of UK fashion

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July 2017

Foreword

In 2012, WRAP published Valuing Our Clothes, a pioneering report looking at the environmental impact of the whole journey of clothing, from raw materials and manufacturing, to purchase, use and disposal.

The report set the scene for collaborative change through the Sustainable Clothing Action Plan 2020 (SCAP), an industry-wide commitment, convened by WRAP and supported by UK governments. Through SCAP, WRAP has worked with clothing designers, brands, manufacturers, retailers, and re-use and recycling organisations to drive more sustainable production and consumption, and to increase textiles re-use and recycling.

Now, five years on, WRAP has updated its evidence base. This new report, Valuing Our Clothes: the cost of UK fashion, looks at the progress that has been made since 2012 and identifies key opportunities for businesses to further reduce the environmental impacts of clothing.

It demonstrates the value of collaborative action, showing that SCAP signatories have outperformed the industry, cutting carbon, water, and waste from their businesses. It also outlines new social trends and changes in how we all care for and keep our clothes, showing that, as a nation, we now tend to keep our clothes longer, launder them at lower temperatures and tumble-dry and iron them less.

Despite these improvements, the carbon footprint of clothing in use in the UK has risen to 26.2 million tonnes CO_2e in 2016, up from 24 million tonnes in 2012 due to a combination of relatively low prices and increased population. By examining each stage of a garment's life from production to disposal, WRAP has identified key areas where further focus is required to build on the improvements achieved through SCAP.

Clothing manufacture and sales in the UK is still the fourth largest pressure on our natural resources after housing, transport and food. To address this huge challenge, we all need to learn to value our clothes more.

Steve Creed
Director Business Programmes, WRAP

> **By examining each stage of a garment's life from production to disposal, WRAP has identified key areas where further focus is required to build on the improvements achieved through SCAP.**

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Key findings

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Key findings

In 2012, WRAP released the pioneering 'Valuing Our Clothes' report. It examined the carbon, water, and waste footprints of clothing throughout its life cycle, for one year in the UK.

The report also shared findings from a major piece of consumer research, examining the way in which people buy, use, and dispose of their clothing. Valuing Our Clothes[1] identified a number of opportunities for businesses in the UK to reduce the environmental burden of the whole clothing supply chain. Following on from WRAP's report, the Sustainable Clothing Action Plan (SCAP) Commitment, a collaborative framework, and voluntary agreement of organisations across the supply chain, was launched with the aim of reducing their carbon, water, and waste impacts.

Five years later, WRAP has reviewed the evidence base and now presents the latest research on the environmental impacts of the clothing industry in the UK, and an update on the progress and achievements of SCAP so far. This new report highlights opportunities and actions that can be taken across the sector in order to meet the SCAP targets. It shows where impacts are making a real difference and highlights where more action is needed.

This new report highlights both opportunities and actions that can be taken across the sector

Our research has found that:

- SCAP signatories have made significant improvements, **reducing carbon by 10.6%, water by 13.5%, and waste across the product life cycle by 0.8%,** per tonne of clothing since 2012. This is the equivalent of **one and a half hot air balloons of carbon;** over **23 thousand baths full of water;** and the equivalent of **30 pairs of women's jeans** for every tonne of clothing sold;

- the amount of clothing in household residual waste in the UK has **reduced by 50,000 tonnes** since 2012;

- the **carbon footprint** has been reduced by **700,000 tonnes CO_2e** through people washing their clothes at **lower temperatures,** and ironing and tumble drying **less frequently,** and further savings are possible in this area;

- **big environmental savings** can be made by focusing on **'priority products';**

- **switching to sustainable cotton** continues to present one of the biggest opportunities for clothing retailers and brands; and further progress in this area could meet the SCAP target for water; and

- with rising global demand for clothing we urgently need to **secure new sources of materials** and **find new markets for used clothing.** Fibre to fibre recycling is a **key opportunity.**

wrap

Valuing Our Clothes:
setting the scene

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Fashion is a crucial part of the UK and European economies. Across the EU and UK, clothing is the eighth largest sector in terms of household spending[2]. However, it is ranked fourth in terms of its impact on the environment. Only housing, transport, and food have greater impacts.

These impacts occur at all stages of the clothing life cycle, from the production of the raw materials, and the creation of the garment, to how it is used and cared for, and finally discarded. Better ways of designing and producing clothing are on the increase[3], but there is a risk that these improvements could be undermined by a rise in the amount of clothes being bought. Any improved practices need to be part of a joined-up drive to design more durable clothing, and to make re-use and repair possible. Introducing these improvements requires support from designers, retailers, customers, and those involved in re-use and recycling.

The clothing industry is highly complex and understanding how it interacts can help identify opportunities for change.

Opportunities for industry to take action include:

- increasing the adoption of sustainable fibre to reduce the water footprint;
- using lower-impact processes in the production of garments;
- focusing on specific garments that will deliver the largest reductions in carbon, water and waste footprints; and
- informing and enabling customers to improve clothing care, repair, and re-use.

Any improved practices need to be part of a joined-up drive to design more durable clothing, and to make re-use and repair possible

Taking stock:
UK clothing consumption

PRIORITY
PRODUCT

Taking stock:
UK clothing consumption

In 2016, based mainly on Her Majesty's Revenue and Customs data, it is estimated that 1,130,000 tonnes of clothing was purchased in the UK.[4] This is an increase since 2012 - SCAP's baseline year - of almost 200,000 tonnes. SCAP launched at a time when overall levels of consumption were low, but the longer term trend has been for clothing purchases to increase, while their price has stayed low compared to other goods.

> **The longer term trend has been for clothing purchases to increase**

WRAP's consumer research has found that on average, clothing lasts for 3.3 years before it is discarded or passed on.[5] This is different from research in the first Valuing Our Clothes report when the lifetime of a garment was assumed to be an average of 2.2 years.[6]

The estimates in WRAP's consumer textiles research and those in the original Valuing Our Clothes report have been produced using different methods, as such they are not directly comparable.

The amount of clothing in active use in the UK in 2016 is calculated as 3.6 million tonnes (from 3.1 million in 2012).

Table 1: Q: For each of these items I want you to think about the last one you wore when answering. Firstly, how long ago did you acquire the item? Secondly, how much longer do you think you will continue to wear it?

Clothing (number of respondees)	Projected lifetime (years)
Coat (547)	4.58
Dress (528)	3.62
Jumper (551)	3.46
Jeans (546)	3.40
Blouse/shirt (528)	3.03
Trousers (549)	2.81
T-shirt (554)	2.78
Top (518)	2.74
Average	3.3025

Base: SCAP Sustainable Textiles Consumer Tracker Survey, 2015 Those answering Q16 (c.75% of sample, other 25% went to Q17), (bases in graph). Unweighted.

Table 2: Total clothing consumed in the UK for 2010, 2012, 2014, and 2016

Year	Clothing consumed (tonnes)
2010	1,030,000
2012	950,000
2014	1,080,000
2016	1,130,000

SECTION C

UK clothing:
impacts and footprints

UK clothing:
impacts and footprints

In order to pinpoint the areas of opportunity and action to improve the sustainability of clothing, this section sets out how and where carbon, water, and waste impacts occur in the life cycle of garments. These footprints are for the UK as a whole. The specific achievements of SCAP signatories are highlighted in more detail in Section E.

The increased quantity of clothing now being purchased in the UK means that there will be a higher environmental impact from its production. However, people are keeping their clothes just as long, if not longer, than they used to. Garments that last longer reduce production and processing impacts, but only if new purchases are avoided.

Table 3 shows a decrease in the carbon and water footprints of UK clothing per tonne. There is evidence for a number of changes in consumer behaviour and garment production that have led to this reduction.[7]

These include:

- more energy efficient washing and drying of clothes, which has reduced the carbon footprint;
- growing second hand sales and a growth in online exchange; and
- growing use of sustainable fibres by SCAP and non-SCAP signatories.

Garments that last longer reduce production and processing impacts, but only if new purchases are avoided

Table 3: Changes in the carbon, water, and process waste footprints (per tonne) of UK clothing in active use in 2012 and 2016

	2012/tonne	2016/tonne	% change/ tonne
Carbon (tonnes CO_2e)	25.3	23.2	-8.29%
Water (m³)	7,570	7,060	-6.68%
Waste (tonnes)	1.7	1.7	0.00%

The carbon footprint of clothing bought in the UK

Despite improvements in the carbon footprint per tonne, the total footprint of clothing in use in the UK, including global and territorial emissions, was 26.2 million tonnes CO_2e in 2016, up from 24 million tonnes in 2012. By looking at each stage of a garment's life[8] from production to disposal, we can see that:

- the highest contributor to the carbon footprint of clothing is the production of fibre through polymer extrusion[9] or agriculture;

- other fibre preparation and processing such as spinning to make yarn, fabric printing and dyeing, all add to the carbon footprint. In particular, the heat setting in chemical and mechanical finishing has a significant effect;

- once clothes are in use, impacts from washing are high, although washing temperatures have reduced overall, as has the frequency of tumble drying; and

- very low levels of carbon emissions are associated with transport and disposal of clothing via landfill and incineration.

Re-use and recycling offer some carbon savings because the lifetime of clothing that is re-used or recycled is extended. Where this displaces a sale of a new garment,[10] the effects on the environment from fibre extraction and processing are avoided.

By grouping together the processes in Figure 1 into life-cycle phases, Figure 2 shows the greatest emissions come from fibre production and these have increased since 2012.

The 'in-use phase', when the garment is with the consumer, is third in terms of impact. Changes in washing and clothing care, and customers keeping clothes in active use for longer, have seen a reduction in environmental impacts since 2012. Processing of fibre to make yarn, cloth and garments is slightly more significant than the in-use phase. Overall carbon emissions are higher than in 2012 due to the increase in the total amount of new clothing being bought.

Figure 1: Carbon footprint of clothing in the UK (t CO_2e) in 2016, by process
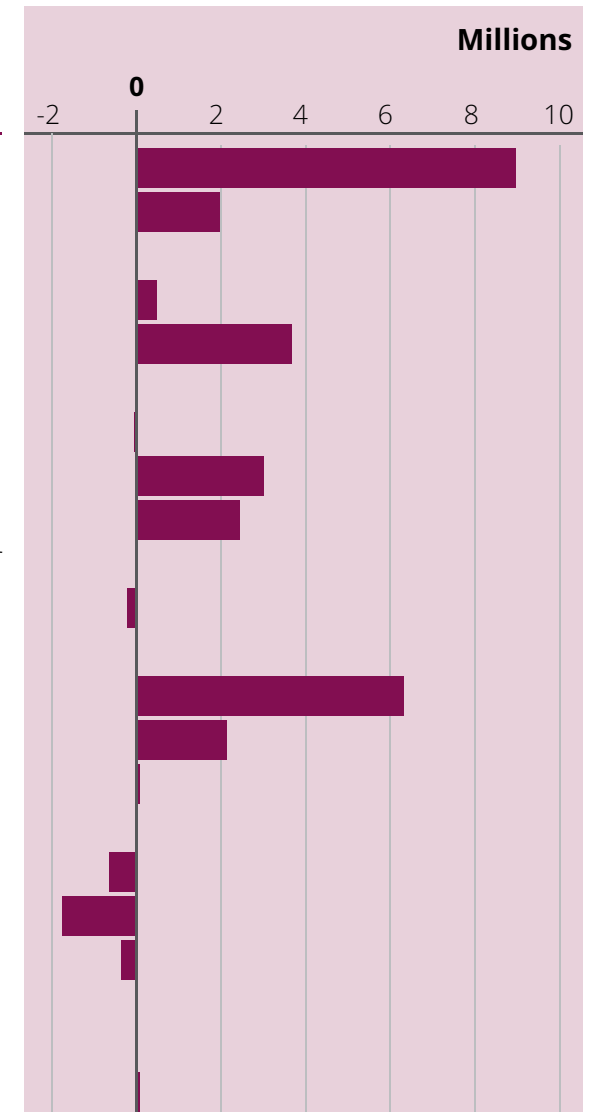
Figure 2: Carbon footprint of clothing in the UK (million t CO_2e) in 2012, and in 2016, by life cycle stage

Figure 3: Contribution of each life cycle stage to the carbon footprint of UK clothing in 2012 and 2016 (t CO_2e)and 2016 (t CO_2e)
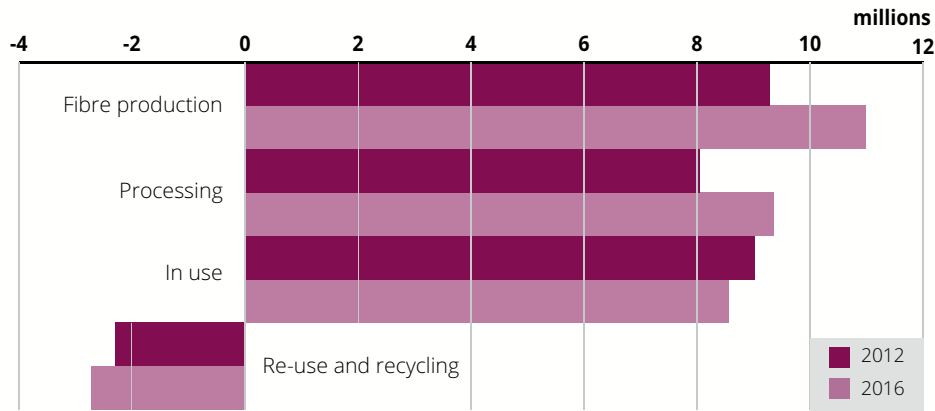
Comparing footprints between 2012 and 2016, the impacts from production and processing have increased, while those (the impacts) in-use phase have reduced. The reduction in the carbon footprint of the in-use phase since 2012 is due to a reduction in washing temperatures and people tumble drying less often.

Overall, despite improvements, carbon emissions are higher due to the increase in the total amount of new clothing being bought

The water footprint of clothing bought in the UK

The total water footprint of clothing in active use in the UK in 2016, including the water consumed overseas to make our clothes, was 8 billion m^3 of water. The greatest quantity of water is used during the growing and production of fibres, although water is also used during colouration, fabric finishing and domestic washing.

Water is used most intensively in agriculture, particularly in cotton growing. Cotton is used commonly throughout the UK clothing supply chain, but it places a burden on the locations in which it is grown. The high costs of producing cotton increase pressure to maximise the yields per hectare for the volume of water available. This in turn incentivises greater use of fertilisers and pesticides which further affects the water supply as the run-off pollutes local water sources.

The global average water footprint for 1 kilogram of cotton - equivalent to the weight of one man's shirt and a pair of jeans is 10,000 - 20,000 litres, depending on where it is grown.[11]

The greatest quantity of water is used during the growing and production of fibres

Figure 4: Water footprint of clothing in the UK (m^3) in 2012 and 2016, comparing life cycle stages
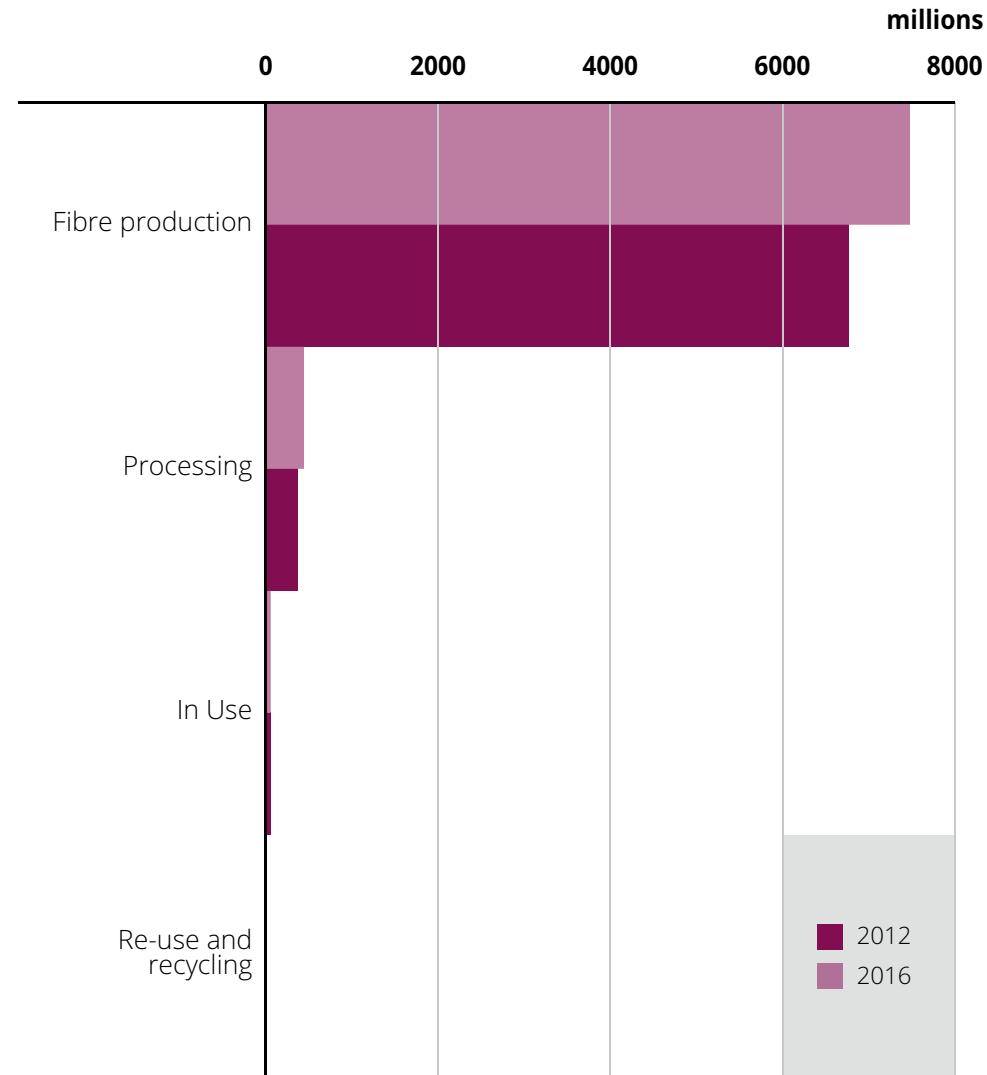
The main suppliers of cotton fibre for the UK clothing industry have changed since 2012.[12] Countries highlighted in purple in Table 4 have increased supply to the UK. The countries now supplying more of our cotton are also more likely to suffer severe water stress (i.e. a high ratio of water withdrawals to availability), and scarcity (i.e. the ratio of the water footprint to water availability, which can vary through the year), with the exception of Australia and Brazil, where risk ratings for the country as a whole are relatively low.

A number of countries have high water stress, including India, Pakistan, Turkey, and the United States; while China, Brazil and Australia have regions with high water stress (demonstrated in Figure 5).

The global average water footprint for 1 kilogram of cotton - equivalent to the weight of one man's shirt and a pair of jeans - is 10,000 - 20,000 litres, depending on where it is grown

Figure 5: Water risk atlas, 2015[13]
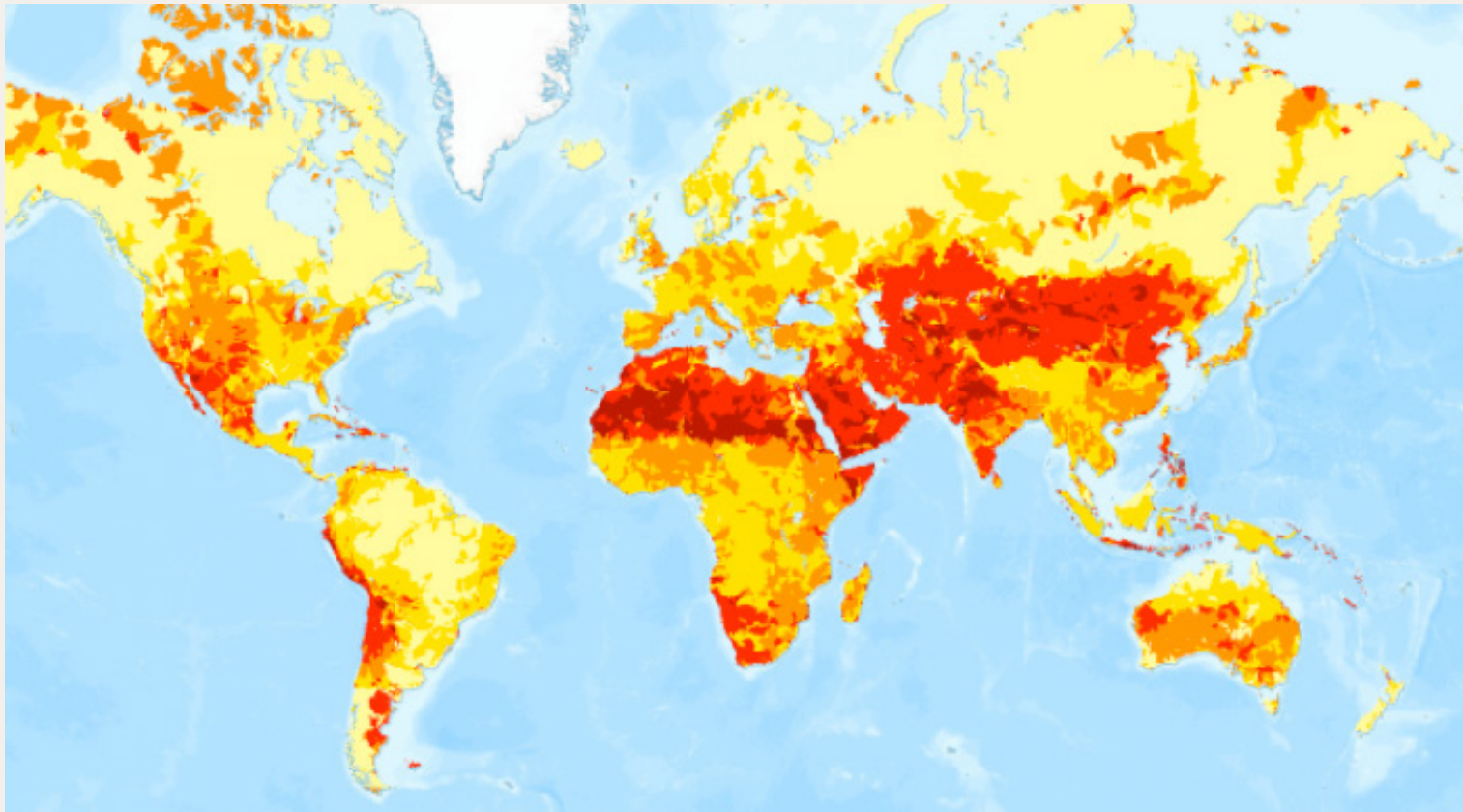
Overall Water Risk

Low risk (0-1)	Medium to high risk (2-3)
Low to medium risk (1-2)	High risk (3-4)
	Extremely high risk (4-5)

Table 4: Cotton fibre producing countries for the UK, water scarcity and severe water stress ratings

Country source	Severe water stress[14]	Water scarcity[15]
China	44.7%	30%
India	80.2%	52%
USA	31.3%	23%
Pakistan	76.3%	75%
Brazil	0.3%	3%
Turkey	61.7%	47%
Australia	8%	5%
Uzbekistan	87.1%	48%

... the activities of the cotton-growing, and textile-production industries, contribute to freshwater contamination, as well as using much of the available clean water

Figure 6: Aerial photographs of change in the Indus river basin in Pakistan at the start and end of the summer season[16]

| June 2009 | July 2009 | August 2009 | September 2009 | October 2009 | December 2009 |

| January 2010 | February 2010 | April 2010 | May 2010 | June 2010 |
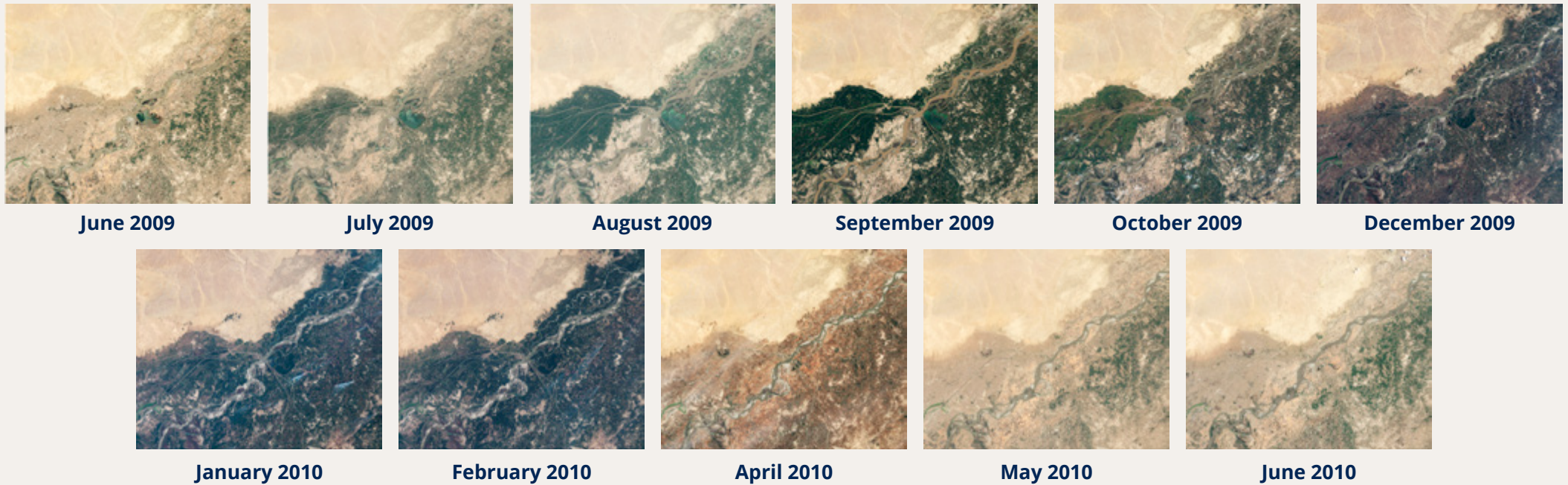
Although a relatively drought tolerant crop, cotton requires irrigation in semi-arid zones meaning it is still affected by droughts. With high demand already on river basin catchments such as the Indus River in Pakistan (Figure 6), the Murray-Darling Basin in Australia and on ground and surface water supplies in general, cotton production can be problematic.

The activities of the cotton-growing, and textile-production industries, contribute to freshwater contamination, as well as using much of the available clean water in areas suffering water stress.

Communities in locations with low incomes and poor living conditions are particularly vulnerable to the risks of water scarcity, and ill-equipped to adapt and respond to the challenges they face in a dry season.

Whilst growing the crops to produce natural fibres has a significant effect on water use, natural fibres also use a large amount of water during the next phase of clothing production. Cotton, wool, silk and flax account for the majority of the water footprint of textiles' fibre production as shown in Figure 7.

In 2016 alone, 7.6 billion m^3 of water was consumed during the production of raw materials to make clothing and 5.25 billion m^3 of this was consumed in the production of cotton for the UK.

Cotton production accounts for 69% of the water footprint of textiles' fibre production and 65% of the total water footprint.

Figure 7: Water footprint for the production phase of each fibre type for the UK (m^3) in 2016

Polyester 0%　Acrylic 0%
Polyamide 0%
Polyurethane/ polypropylene 0%
Flax/Linen 2%
Viscose 7%
Silk 14%
Cotton 69%
Wool 9%
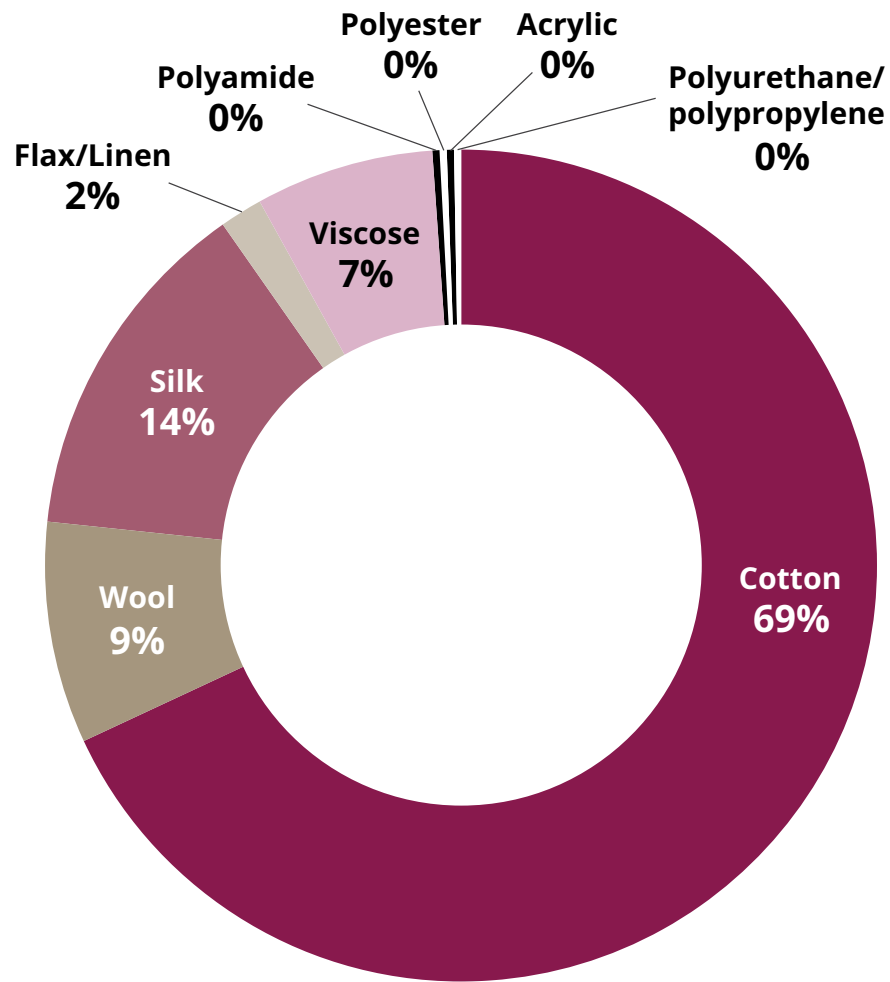
Numbers may not add up to 100% due to rounding.

Large quantities of water are used in the production of silk fibre. Kilogram for kilogram, silk has a higher water footprint than cotton[17]. Silk fibre production had a water footprint of over 1 billion m^3 of water to produce just over 11,000 tonnes of silk in 2016.

Cellulosic fibres also use a large quantity of water in their production. With viscose, this occurs when raw material is made into fibre ready for spinning into yarn. Fibre extrusion that makes viscose used 500 million m^3 of water in 2016. A further 80 million m^3 is used in the preparation of the fibres for spinning. This quite staggering quantity of water is required to produce just over 100,000 tonnes of the garments going to the UK market in

2016[18] (representing approximately 10% of the UK market). To give an idea of the scale, this is the equivalent to all the water flowing from the River Severn into the sea for two months.

The Global Leadership Award in Sustainable Apparel has reported that the clothing industry uses over 5 trillion litres of water as a whole and 20% of freshwater pollution comes from textile treatment and dyeing.[19]

Processing, including spinning, weaving, knitting, colouration and finishing, or setting of the dye, also adds to the water footprint of clothing. The water footprint of fibre and fabric processing for garments bought in 2016 in the UK was around 446 million m^3.

Figure 8: Water footprint for the total processing phase of each fibre type for the UK (m³) in 2016

Acrylic 3%
Polyamide 2%
Polyurethane/polypropylene 0%
Polyester 3%
Viscose 21%
Cotton 60%
Flax/Linen 1%
Silk 3%
Wool 6%
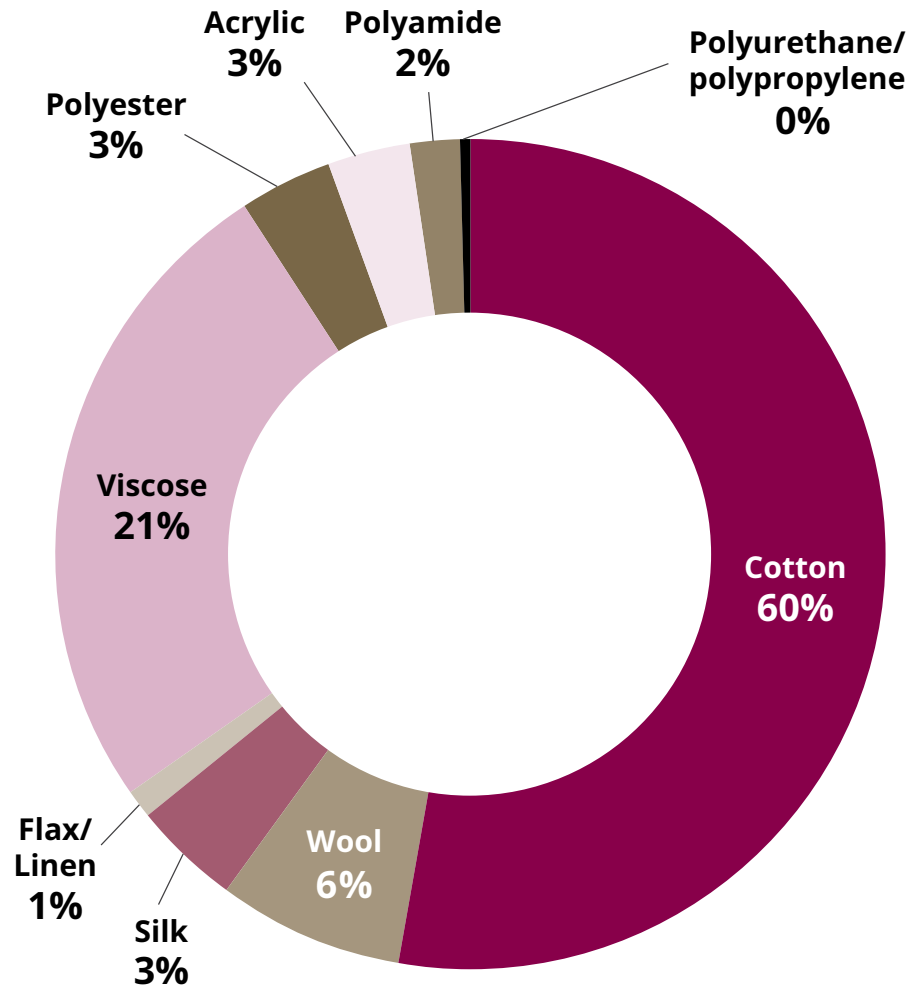
Numbers may not add up to 100% due to rounding.

The water used to make cotton is 60% of the total water footprint of fabric processing. This considerably outweighs its 43% share of the market[20]. There are also significant water impacts from colouration and finishing.

Viscose also uses a great deal of water, mostly in preparation of the fibre (pre-spinning). Synthetic fibres affect the water footprint mostly during dyeing and finishing because a high amount of dye and processing is needed for synthetic fibres.

The Global Leadership Award in Sustainable Apparel has reported that the global apparel industry uses over 5 trillion litres of water as a whole and 20% of freshwater pollution comes from textile treatment and dyeing

Process waste from clothing production

Not all waste occurs at the end of the life of a garment: it also occurs in the processing and production phases. In 2016, this process or 'supply chain' waste was estimated at over 800,000 tonnes[21].

Supply chain waste arises in the country where the fibres or fabrics are processed and the amount of supply chain waste varies by fabric and fibre type. Most of the garments sold in the UK are produced in Asia. Looking at individual steps, the majority of supply chain waste, around 440,000 tonnes, arises during preparation of fibres to make yarn and during garment production, and most notably in China and India.

The production of natural fibres produces large amounts of by-products some of which will arise as waste. For example, though it has a lower carbon and water footprint per tonne than cotton, during the preparation of scutched flax, a large amount of dust is produced (150 kilograms per tonne of material input), and the pre-spinning stage creates a further 50 kilograms of dust and fibre waste per tonne of input[22]. Flax is a relatively environmentally beneficial fibre, but care must be taken during preparation to manage the process. Carding and combing in fibre preparation to make yarn also creates waste. Other natural fibres, including cotton, silk and wool require similar preparation which all result in dust and fibre by-products

arising as waste. Wool must also be scoured to remove large quantities of grease and waste arising from preparation; and pre-spinning processes for this fibre is particularly high.[23]

Filament yarns for synthetic textile production also require preparation and spinning, and a certain amount of waste is produced during these processes, although less than for natural fibres. During colouration and finishing, synthetics produce more waste than natural fibres per kilogram of processed fibre.

In garment production, all fabrics are likely to create waste during cutting when a certain amount of material is lost as pieces must be cut from the cloth.

Having set out the significant environmental challenges created by our clothes, the next section of this document will focus on the actions needed from all involved in the clothing industry to make lasting change.

SECTION D
The SCAP agreement

SCAP timeline

2012

Valuing Our Clothes, the first evidence base on the environmental impact of clothing, is published

The Sustainable Clothing Action Plan 2020 Commitment launches

WRAP receives a 'Global Leadership Award in Sustainable Apparel' for its initiation of SCAP

2013

2014

The Love Your Clothes Campaign launches, aiming to change consumer behaviour towards clothing

SCAP membership increases to cover 50% of the retail market

2015

First SCAP conference is held

Textiles Market Situation Report published, examining the market for recovered materials

WRAP produced the Textiles Procurement Guide

2016

The SCAP agreement

The Sustainable Clothing Action Plan is a collaborative agreement working to reduce the use of resources in the clothing industry. It has over 75 signatories and supporters representing more than 58% of UK retail sales by volume. Signatories also include charities and textile collectors and recyclers.

Against a 2012 baseline, the following targets were agreed by SCAP for 2020

15% Carbon footprint reduction

15% Water footprint reduction

15% Waste to landfill reduction

3.5% reduction in waste arising over the whole product life cycle
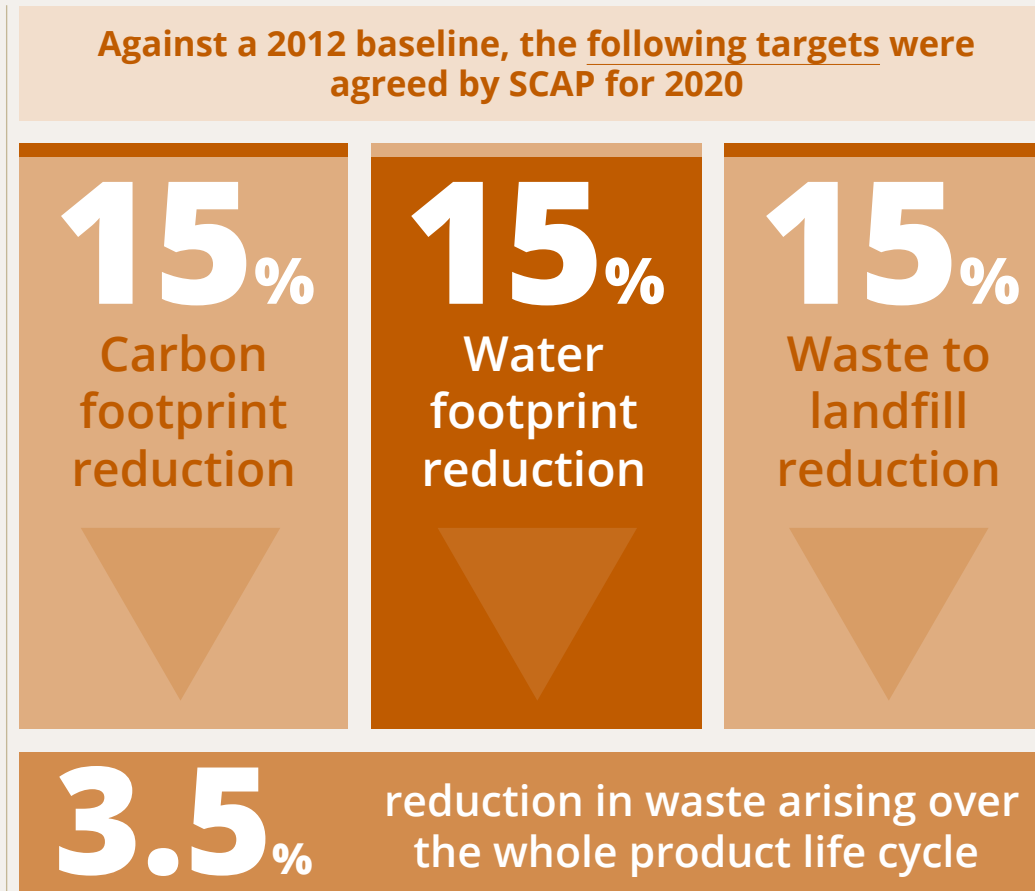
SCAP is helping the UK contribute towards achieving the United Nations' Sustainable Development Goals (SDGs), summarised in Figure 9. These global goals are a call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity.

In particular, SCAP contributes to:

- goal 6: clean water and sanitation;
- goal 12: responsible consumption and production;
- goal 13: climate action; and
- goal 17: revitalize the global partnership for sustainable development.

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Goal 6: Clean water and sanitation

Water scarcity and depletion, largely from the amounts used in crop irrigation, affects the availability of clean water. It is also affected by pollution from the preparation of fibres and dyeing fabrics and garments. Freshwater pollution from agriculture and industry is a significant problem for parts of the world where water quality is already affected by increasing seasonal variability, bad weather and water shortages.

- SCAP helps companies to reduce their demand for water by changing their choice of fibre and introducing different production methods.

Goal 12: Responsible consumption and production

We need to change the way we consume goods and resources in order to reduce our ecological footprint and achieve economic growth. Responsible consumption and production are both essential in achieving the improvements that SCAP will bring about.

- SCAP provides consumers with advice and tips on buying goods which are produced more sustainably and which will last longer.

Goal 13: Climate action

Climate change is causing long-lasting changes to our environment which threatens irreversible consequences. The carbon footprint of clothing, which contributes to climate change, is caused by the energy used in its production and consumption.

- SCAP identifies methods of making clothes that produce less carbon and use less energy. It helps businesses and customers switch to more energy efficient methods for producing and caring for clothes.

Goal 17: Revitalize the global partnership for sustainable development

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level.

- SCAP brings together organisations across the supply chain to reduce the way resources are used. It works collaboratively with industry, government and the third sector to re-invent how clothing is designed, re-think how we value clothing, and to re-define what is possible through re-use and recycling

SCAP helps contribute to achieving UN Sustainable Development Goals. In particular clean water and sanitation, responsible consumption and production, inclusive partnerships, and climate action.

Figure 9: The UN Sustainable Development Goals

SCAP helps contribute to achieving UN Sustainable Development Goals. In particular clean water and sanitation, responsible consumption and production, inclusive partnerships, and climate action

How do we measure up?
SCAP achievements 2012 – 2015

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How do we measure up?
SCAP achievements 2012 – 2015

SCAP signatories report on the carbon, water and waste footprints of their clothing every year as part of their commitment to the agreement. The SCAP footprint calculator is the tool that helps retailers and brands calculate the carbon, water and waste footprint for their whole portfolio of garments. It is also used by recyclers and collectors to measure the impacts of their activities.

The amount of clothing in household residual waste has reduced by 50,000 tonnes since 2012

The latest reporting shows that during 2012-15 the SCAP 2020 Commitment has achieved, per tonne of clothing:

- 10.6% reduction in carbon against a target of 15%;
- 13.5% reduction in water against a target of 15%; and
- 0.8% reduction in waste arising over the whole product life cycle against a target of 3.5%.

The amount of clothing in household residual waste has also decreased substantially:

- 14% reduction in household residual waste against a target of 15%

This is the reduction of clothing in all household residual waste (waste that goes to landfill and energy from waste). In 2012, there was 350,000 tonnes of clothing in household residual waste. This has now reduced to 300,000 tonnes.[24]

There has been progress on all four targets, with the water target and the clothing in household residual waste close to being achieved.

The results show that SCAP signatories' footprints have reduced both overall and per tonne of clothing.

10.6% reduction in **carbon**

13.5% reduction in **water**

14% reduction in **waste** to landfill

0.8% reduction in waste arising over the whole product life cycle

What our signatories say …

"SCAP has been crucial to our sustainability strategy because it has enabled us to communicate more effectively with our leadership team and develop fixed targets within our business."

asos

Tara Luckman, Fabric and Sustainability Manager, ASOS

Table 5: Footprints for carbon, water and waste from SCAP reporting brands and retailers. 2015 results against a 2012 baseline.

	2012/tonne	2016/tonne	% change/ tonne
Carbon (tonnes CO$_2$e)	24.9	22.2	-10.6%
Water (m^3)	7,280	6,300	-13.5%
Waste (tonnes)	1.6	1.6	-0.8%

Table 6: Footprints for carbon, water and waste from UK clothing consumption comparing 2012 and 2016

	2012/tonne	2016/tonne	% change/ tonne
Carbon (tonnes CO$_2$e)	25.3	23.2	-8.3%
Water (m^3)	7,570	7,060	-6.7%
Waste (tonnes)	1.7	1.7	-0.0%

The value of being a SCAP signatory is demonstrated in the reductions in carbon, water and waste footprints achieved, over and above those seen for the UK as a whole.

The carbon reduction from reduced washing temperatures and tumble drying are included in the SCAP results (Table 5) and for the UK as a whole (Table 6). These changes are discussed further in Section G. The water reduction is much stronger for the SCAP retailers.

One reason for the difference is that the fibre profile for SCAP retailers is different; they report a higher proportion of cotton overall and they are also reporting using a higher quantity of sustainable cotton. In fact, 20% of cotton reported by SCAP signatories for 2015 was from sustainable sources which have a lower water footprint.

SCAP signatories' footprints have reduced both overall and per tonne of clothing

SECTION F

Sustainable fibre choices:
key to reducing environmental impact

PRIORITY PRODUCT

Sustainable fibre choices:
key to reducing environmental impact

Significant actions have been taken by SCAP signatories since 2012 to introduce more sustainable fibres to their clothing ranges. This is an achievable and measurable action which can make a real difference to the overall environmental impact of our clothing.

While some retailers have shifted to the use of synthetic fibres, retailers in the UK continue to use more cotton than other fibres and for many, cotton garments make up more than half of garments sold.

Sustainable cotton has been a particular focus with the introduction of cotton certified by the Better Cotton Initiative (BCI), Organic Cotton, and Cotton Made in Africa. Several SCAP signatories have set ambitious targets for sustainable cotton including:

• Marks and Spencer is committed to 100% sustainable cotton by 2019;

• Tesco is committed to 100% sustainable cotton by 2020; and

• Sainsbury's is committed to 100% sustainable cotton by 2020.

The potential of switching to sustainable cotton offers opportunities particularly in improving the water footprint of UK clothing, but also with reducing carbon emissions.[25]

There is a long-term trend globally towards using polyester. In 2016 Greenpeace reported that in the global market polyester "is now used in 60% of our garments" and that the total quantity has more than doubled since 2000[26].

As use of polyester grows, there is an opportunity to grow use of recycled polyester to help minimise carbon emissions. The greatest potential is for closed loop recycling, by ensuring material is designed and captured for fibre-to-fibre recycling.

More sustainable fibres ... an achievable and measurable action which can make a real difference
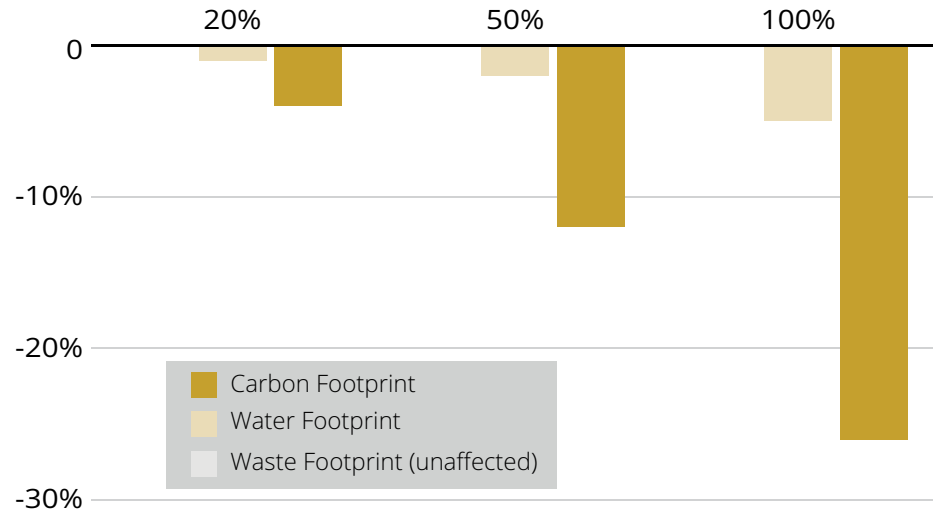
What our signatories say ...

"SCAP's analysis of our fibre mix and supply chain impacts gives us the clarity to set specific fibre substitution targets, enabling us to gain senior management buy-in for a broader sustainability strategy that targets key suppliers and reduces our environmental impact."

asos

Tara Luckman, Fabric and Sustainability Manager, ASOS

Figure 10: The introduction of sustainable fibres and potential reduction in total footprint of clothing reported to SCAP

Reduction in footprints from adoption of sustainable cotton

Carbon Footprint
Water Footprint
Waste Footprint (unaffected)

What our signatories say …

"We'll source 100% of cotton from sustainable sources by 2019 and by 2025 will aim to have increased the proportion of Fairtrade, organic and recycled sources to 25%"

Phil Townsend, Raw Materials Specialist, Marks and Spencer

In Figure 10, we show the benefits of switching to 20%, 50% and 100% sustainable cotton. The savings achieved through introducing more sustainable cotton are all achieved during fibre production; other life cycle stages are not affected.

Switching to more sustainable cotton offers the potential to meet the SCAP water footprint target, although to deliver this on its own, more than 50% of cotton in garments produced for the UK would have to be made this way.

New Actions for the Supply Chain

Switching to sustainable fibres is important, but will not be enough on its own to achieve all the SCAP targets (i.e. carbon and waste).

In 2016, more detailed information about a number of other actions were reviewed, with a focus on beneficial changes that can be made to fibres during manufacture. Colouration technologies which offer environmental savings by using fewer resources and causing less pollution, offer great potential.[27, 28] Spin-dyeing of synthetics and cold pad batch (CPB) – a method of continuous dyeing of woven and knitted cellulosic fabrics – are new improvement actions for SCAP, with environmental benefits that can be quantified and reported.

The introduction of new technology is also making progress, for example through trials for fibre-to-fibre recycling, through the EU LIFE funded project, the

European Clothing Action Plan (ECAP). These will eventually improve the amount of recycled fibres that can be used in garment production.

Carbon and water savings for specific fibres are possible, but when applied to all fibres reported to SCAP, the potential savings were not significant. Carbon savings for both spin-dyeing and cold pad batch are shown in Table 7 based on dyeing 10%, 20% or 50% of eligible material.

Switching to more sustainable cotton offers the potential to meet the SCAP water footprint target

Table 7: Introduction of new colouration technologies and potential reduction in total footprint of clothing reported to SCAP

% of clothing sales	10%	20%	50%
Carbon (t CO_2e)	-1%	-2%	-5%
Water (m³)	0%	1%	-1%
Waste (tonnes)	0%	0%	0%

The combination of spin-dyeing adopted for polyester and cold pad batch for dyeing cotton would contribute to the SCAP target (shown in Figure 8) for carbon, but is not enough on its own to achieve the target. Other improvements are still needed.

The combination of spin-dyeing and cold pad batch could contribute to the SCAP target for carbon and water as shown in Table 7. Other improvements are still needed however. Spin-dyeing is suitable for use with synthetic fibres and viscose but not for cotton, wool, and silk, for example; while cold pad batch can only be used for fibres with a cellulosic structure such as cotton and flax.

Dyeing technologies which offer environmental savings by using fewer resources and causing less pollution offer great potential

Valuing our customers:
behavioural research and campaigns

Valuing our customers:
behavioural research and campaigns

YOUR CLOTHES

This section provides insight into action that customers are already taking to improve the environmental impact of their clothing, and highlights opportunities where they could be supported and encouraged to do more.

Helping customers to care for and keep their clothes for longer, as well as exchanging them for re-use when no longer required, is essential if the active life of clothing is to be extended and the environmental benefits realised.

Love Your Clothes

As part of its commitment to manage and deliver the SCAP agreement effectively, WRAP, in conjunction with SCAP signatories, developed the consumer campaign Love Your Clothes which encourages sustainable behaviours towards clothing. Love Your Clothes builds upon previous WRAP experience to share messages that focus on the good feeling that making sustainable choices can bring.

Love Your Clothes encourages actions around the better purchase, care, repair, and disposal of clothing. It also offers tips and advice on up-cycling and maintaining your clothes. The ultimate aim is to reduce the environmental impact of clothing across the UK and influence a more circular approach to clothing globally.

Research for the campaign has also highlighted the need for effective messages for people on buying clothes that last and guidance on the best way to care for and repair clothing.
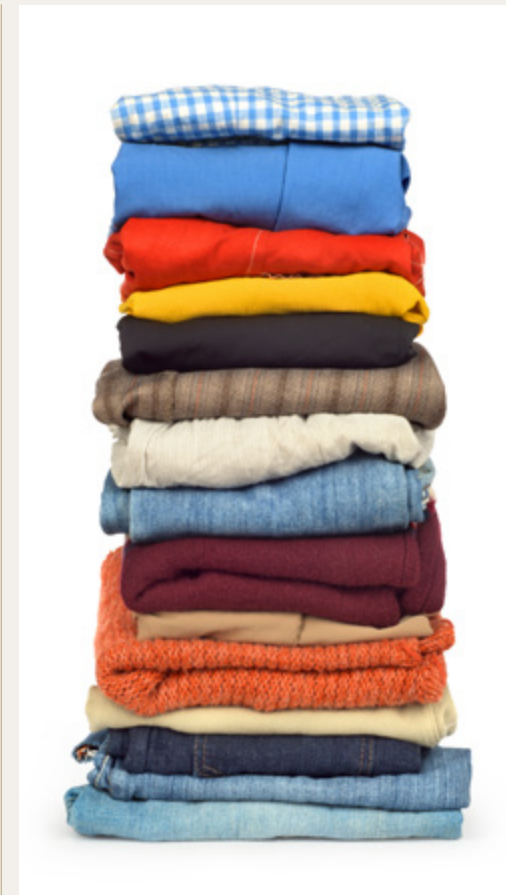
Customers have a big role to play in reducing the carbon, water and waste footprints of clothing. Consumer education around the optimum ways of buying, caring for, and disposing of clothes is key to supporting this

case study

Bristol Textile Recyclers

Bristol Textile Recyclers (BTR) works to divert 20 tonnes of textiles from landfill on a daily basis. It re-uses unwanted textiles from the local community - largely charity shops - sorts them, and then re-uses and recycles them both within the UK and abroad. BTR also works with UK textile dealers who buy pre-loved high street and vintage clothing from them on a weekly basis. There is often a surplus of this clothing and much of it ends up being exported. In 2015, BTR ran a campaign with WRAP's Love Your Clothes to raise awareness of their services and to maximise on the amount of clothing they could sell in the UK.

The idea was simple: open up the warehouse to fashion bloggers, up-cyclers, students and journalists, and challenge them to create outfits from the donated clothing. The event was a great success and BTR saw an opportunity to develop 'kilo sales' where the public could access quirky, vintage and retro clothes, shoes and accessories at wholesale prices.

The kilo sales attracted up to 200 people every month and BTR is keen to develop the event further by offering on-site alterations and adaptations to the clothing.

Aimee Campanella, Stock Acquisition Manager at BTR said …

"The Fashion Salvage event we did with Love Your Clothes really proved to us that the idea was viable. It works for us on two levels. First it's all about transparency, inviting the public into our warehouse factory so that they can find out what happens to their unwanted clothes. Secondly, the customers get a great deal on vintage clothes and we get the best value from our stock."

Purchasing

WRAP's consumer research, which supports SCAP and the Love Your Clothes campaign, looked at what people do across the lifetime of clothing; from purchase to laundering, care and disposal,[29] see Figure 11.

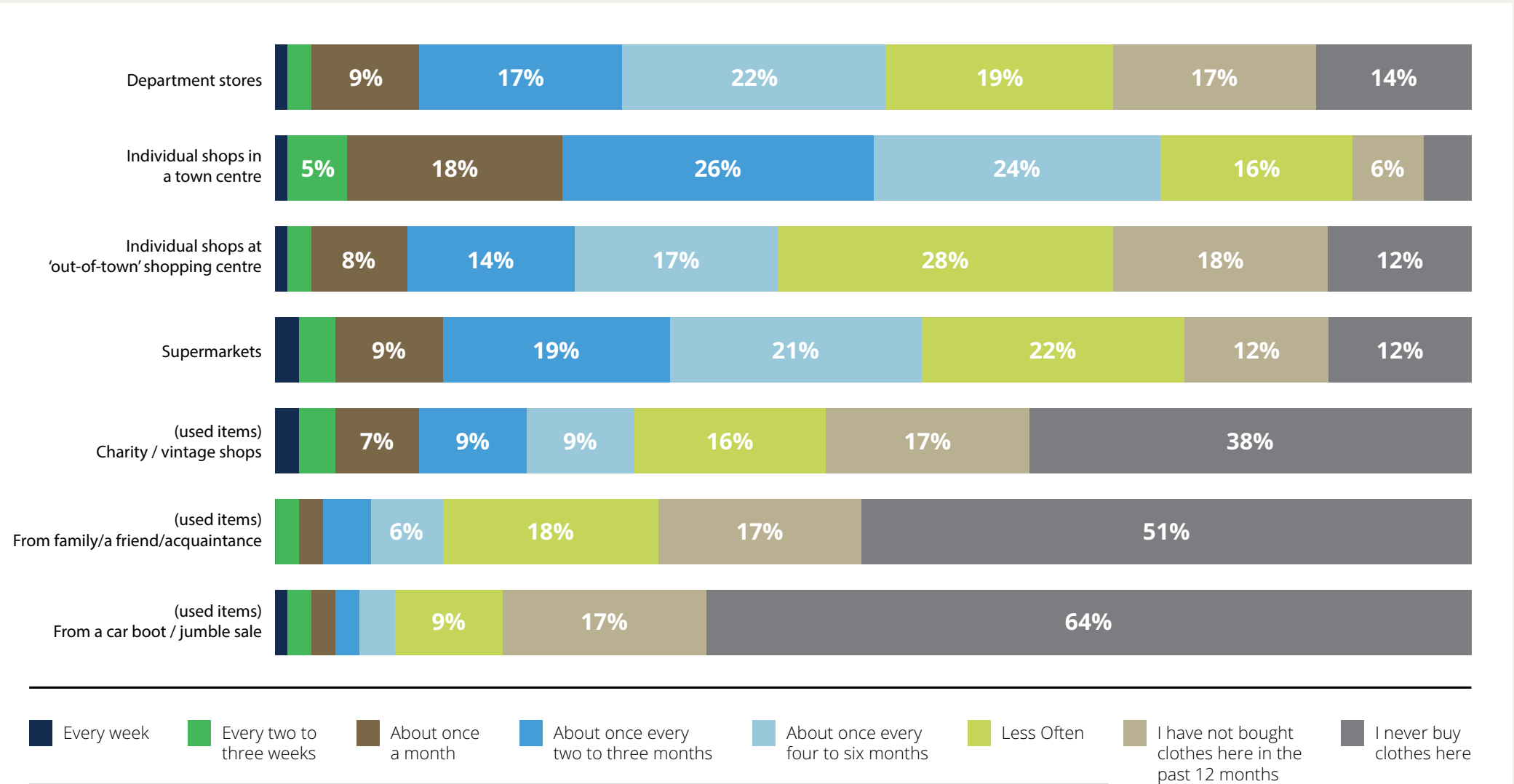Most people still prefer to aquire clothes face-to-face, either in a shop or from a friend and:

- 84% have acquired clothes face-to-face in the past year;
- 65% have bought clothes online or from a catalogue;
- 53%, have done both; and
- 5% have bought nothing.

Individual shops in a town centre are the most popular shopping destination when average visits are calculated, although shopping trips do not always lead to purchases. Although smaller in scale, there are still measurable numbers of people who are part of an increasing trend to buy or acquire second hand clothes via a number of routes.

Figure 11 : Q: How often, if at all, have you acquired clothes from each of the following?

Department stores: 9% / 17% / 22% / 19% / 17% / 14%

Individual shops in a town centre: 5% / 18% / 26% / 24% / 16% / 6%

Individual shops at 'out-of-town' shopping centre: 8% / 14% / 17% / 28% / 18% / 12%

Supermarkets: 9% / 19% / 21% / 22% / 12% / 12%

(used items) Charity / vintage shops: 7% / 9% / 9% / 16% / 17% / 38%

(used items) From family/a friend/acquaintance: 6% / 18% / 17% / 51%

(used items) From a car boot / jumble sale: 9% / 17% / 64%

Legend:
- Every week
- Every two to three weeks
- About once a month
- About once every two to three months
- About once every four to six months
- Less Often
- I have not bought clothes here in the past 12 months
- I never buy clothes here

Base: SCAP Sustainable Textiles Consumer Tracker Survey, 2016 Those who have bought face to face in last year (1,729).

Washing and care

Most UK households own an iron (90%), a washing machine (89%) and some form of tumble dryer (59% for tumble dryers and washer dryers combined). The most frequent washers do four or more loads per-week, per-person in the household.

Clothes washing and care accounts for a third of the total carbon footprint of clothing, although the carbon footprint from the use phase of clothing is decreasing. Washing and care has less impact on the overall water footprint which occurs largely during fabric production. Compared to the quantity used in fibre production, the quantity of polluted water arising from washing clothes is very little.

The consumer research has found that:[30]

- tumble drying has reduced from 32% of total washes to 26%;
- ironing frequency has reduced from 43% to 38%; and
- washing temperatures have decreased as people are more likely to wash at 30˚C than they were.

> **Continuing to provide information to consumers of the benefits of washing at lower temperatures and tumble drying less provides an opportunity to further reduce the carbon footprint**

Figure 12: The effect of changing consumer habits in turn, and then combined, on the total carbon footprint of all clothing (CO_2e) consumed in the UK in 2016
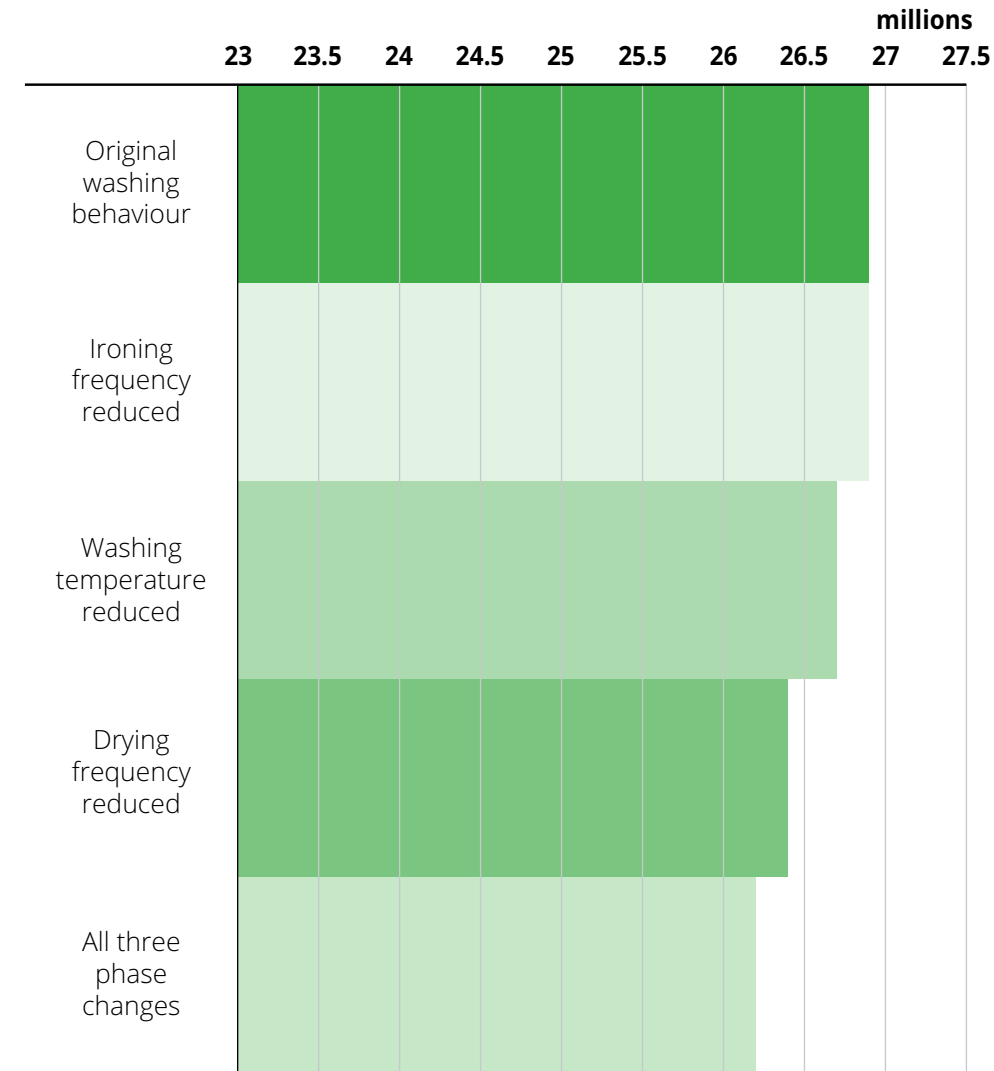
The SCAP footprint calculator was updated in 2016 to include the lower washing temperatures and less ironing and tumble drying. These simple changes reduce the carbon footprint in total by 700,000 tonnes CO_2e (3%) and suggest that consumers are able and willing to change clothing care habits. Continuing to provide information to consumers of the benefits of washing at lower temperatures and tumble drying less provides an opportunity to further reduce the carbon footprint.

Ironing has less impact on the carbon footprint than changing washing temperatures and tumble drying frequency because it uses less energy.

> Reducing washing temperatures, tumble drying and ironing has already reduced the carbon footprint of clothing by
>
> **700,000 TONNES**
>
> and could provide further reductions.

case study

P&G Ariel

Between May and July 2016, the Know Your Care Labels campaign was carried out by the P&G brand Ariel, in collaboration with Love Your Clothes. The aim was to highlight the amount of clothing that is no longer in use, due to the lack of consumer knowledge about care symbols on clothing labels. In order to effectively communicate the issue to consumers and provide an engaging method for changing behaviour, Love Your Clothes built a PR campaign to increase public awareness about the importance of following care labels.

The campaign included:

- Conducting a piece of consumer research on 2,000 people in the UK. The results were used to create a press release which was sent to national print, broadcast and online media.

- A 'Know Your Care Labels' quiz and dedicated webpage was created for the Love Your Clothes website. The quiz was designed to test public knowledge of care labels.

- Downloadable posters and guides listing all of the care symbols that appear on UK clothing.

- Tracking of engagement with the campaign by encouraging participation in the quiz, and sharing of scores on Twitter and Facebook - to enter a prize draw to win a Samsung washing machine. The competition was heavily promoted with spend on social advertising, and was featured in the Primary Times magazine and on their website.

Results

- Media coverage secured in The Mirror, mirror.co.uk, The Observer, Guardian online, and ITV's Loose Women. This resulted in a potential reach of 9.6 million.

- An increase of 8,000 visitors to the Love Your Clothes website.

- 380 new Twitter followers during campaign period, 202 mentions, 697 retweets.

- 160 new fans on Facebook, 4,660 Likes, 29 people talking about the campaign.

Scott Popham, Senior Communications Manager, Fabric & Home Care - Northern Europe, Procter & Gamble said ...

"The Know Your Care Labels campaign with Love Your Clothes was a fantastic opportunity to highlight the importance of caring for clothes during the laundry process in a really engaging way. We were delighted to support a project to educate consumers and drive habit change. This step towards helping people to keep their clothes in the best condition for as long as possible, is a small step on the journey to help reduce the amount of clothing to landfills."

Repairs and alterations

Repairing garments that are worn out, have developed faults, or which no longer fit, is an opportunity to extend the life of clothes. Repair is carried out at home, or by a clothing repair and alterations specialist (sometimes as part of the service available from a dry cleaning company).

Some simple activities that may be considered repair are easily carried out by people themselves. Sewing on a button, for example, or removing a stain are things that most people feel confident doing. Several other activities such as taking up a hem and darning or patching a hole, are carried out by only about a third of people. There are also a number of activities are that are beyond the ability of most people such as replacing a zip, remaking a garment (up-cycling), replacing a pocket, or adjusting the size of a garment for a better fit.

Figure 13 shows results from WRAP research which asked people about their confidence in undertaking repairs.

There are opportunities for businesses to provide repair services if consumers are not able to carry out their own repairs. In most cases this means doing the repairs or alterations for the customer. However, repair cafes[31], repair surgeries, workshops, and online sewing tutorials[32] (including Love Your Clothes) are gaining popularity. These are all places where people can get some help and learn new skills.

Research found that the UK clothing repair market[33] has an annual turnover between £116 million and £312 million. These business opportunities are discussed in more detail in Section H 'More tailored solutions: meeting SCAP targets by 2020'.

Patagonia example

Patagonia believes in offering its customers the chance to have their items repaired to extend product life. In 2016, its repair department mended over 45,000 garments. Taking this one step further, Patagonia is also empowering the consumer to repair clothing themselves by launching a new repair programme in collaboration with iFixit. Customers can download free easy-to-follow online repair guides for Patagonia clothing and are also offered an Expedition Sewing Kit for on the spot emergency repairs.
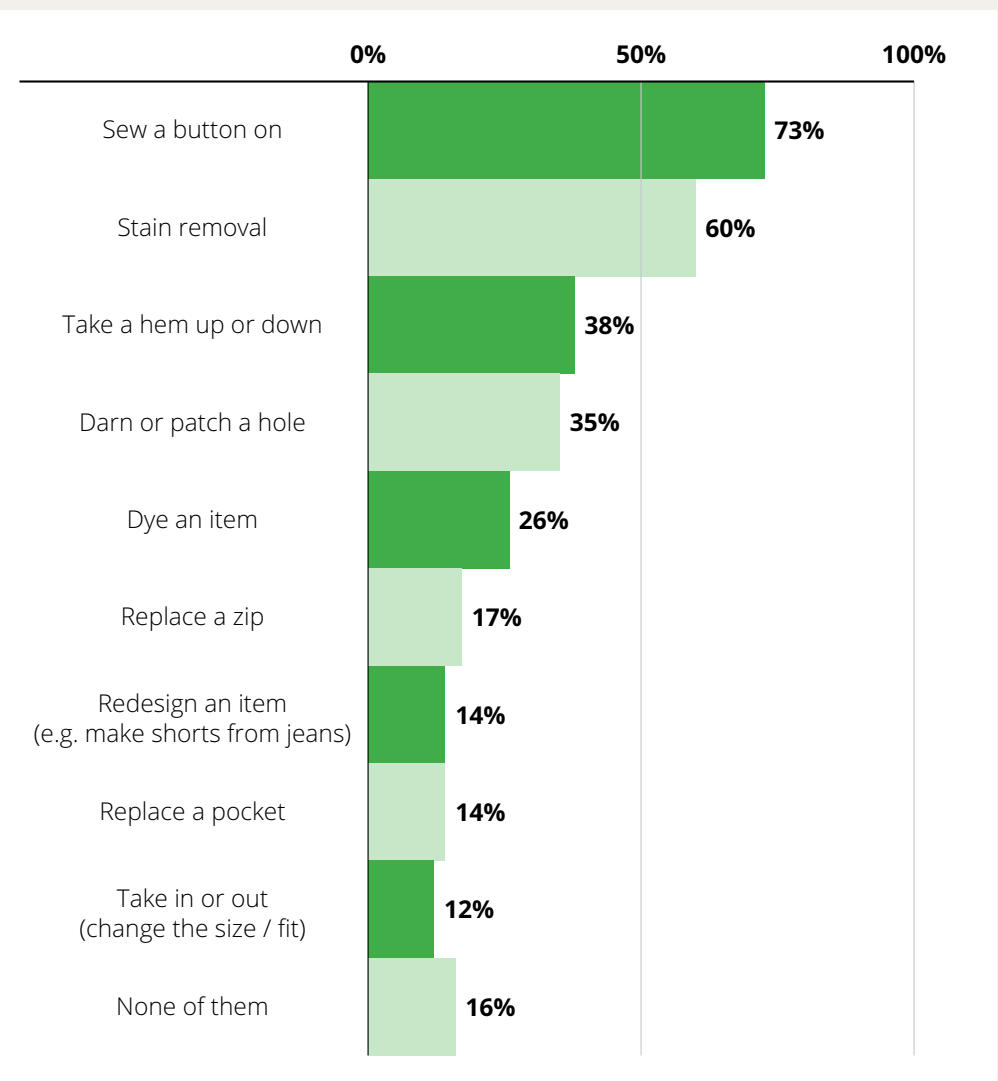

Figure 13: Shows the % of people that felt confident to perform repairs and alterations'

Base: Graph and box weighted to UK proportions - All (2,058) WRAP Textiles Tracker Survey 2016 wave 2

Clothing re-use and disposal

Consumer behaviour can make a difference when clothing life is extended through repair and re-use. Re-using clothes by selling them via online trading sites, donating them to charity shops, or passing them on to friends all have the environmental benefit of extending the life of the garments.

A second hand sale returns some value to the original owner or provides a charity retailer with revenue, which is better than storing it and no longer using it.

Provided that the purchase of a second hand garment displaces that of a new item, then significant environmental savings are made from avoiding production, processing, and disposal. Value is also retained in the economy through this circular way of doing business. These savings are the reason why extending product lifetimes is the first preference when it comes to actions to improve clothing's sustainability.

Figure 11 (p34) sets out how frequently, and from where, most clothing is acquired. Providing re-use or resale opportunities at the places where most new sales take place can make it easy for customers to extend the life of their own unwanted garments.
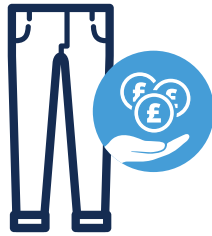
An increase of 10% in **second hand sales** could save:

3% CARBON   **4% WATER**   **1% WASTE**

PER TONNE OF CLOTHING

Figure 14: Re-use can increase the lifetime of clothing so that garments can have multiple lives before being recycled.[34]
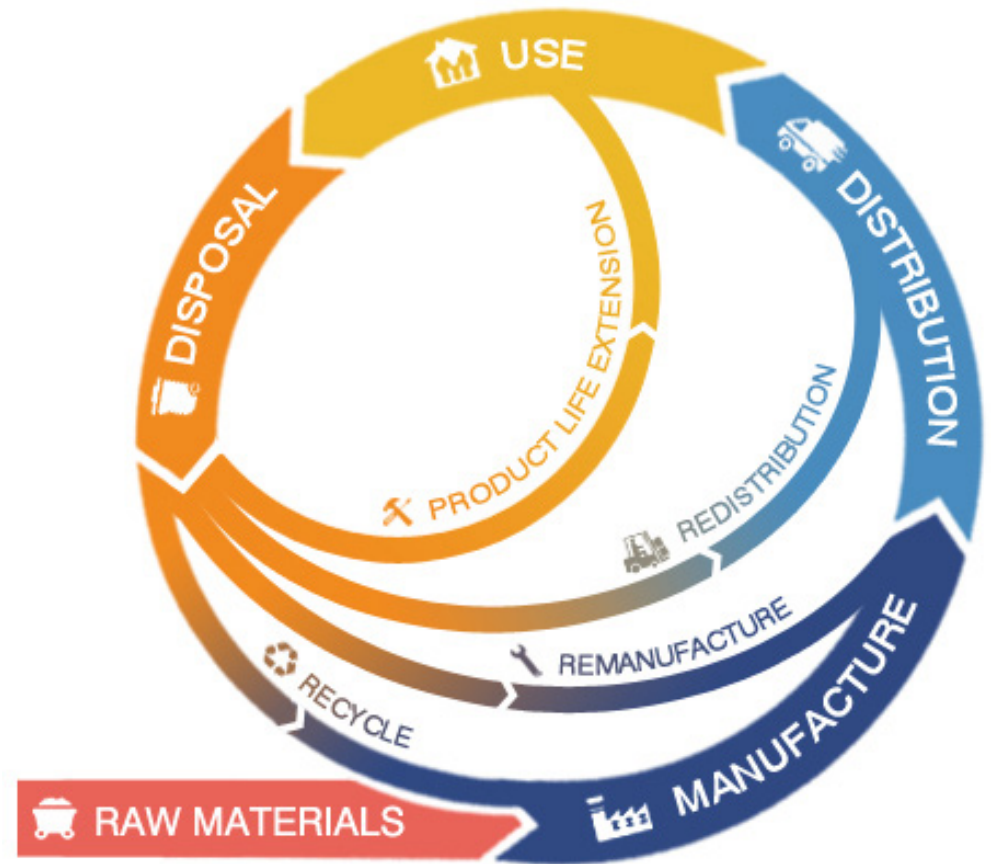
case study

Welsh Government – setting up a clothing collection drive

As part of Love Your Clothes Cardiff (a week-long city-wide engagement campaign with a focus on consumer behaviour change), Welsh Government staff across Wales were encouraged to donate their unwanted clothes to help contribute towards collecting four tonnes for local charities. This would equate to 21 tonnes of CO_2e saved, 6,399 m³ of water saved, and two tonnes of process waste avoided.

Six of the largest Welsh Government offices took part in the campaign, reaching more than 4,000 members of staff, with the goal of collecting one tonne of clothing. A dedicated room was used in each office for staff to drop off their donations, and each office was assigned a SCAP signatory who operated locally to collect the clothes to sell on in their retail outlets. These included YMCA Cardiff, British Heart Foundation, and

The Salvation Army. The campaign was launched by the Cabinet Secretary for Environment and Rural Affairs, Lesley Griffiths AM, via a video message to all staff, sent out via the staff newsletter and featured on the Intranet. Bilingual promotional materials including Love Your Clothes videos, infographics, and statistical information were provided to the internal communications team to distribute to staff as part of the overall communications plan, supported by posters in lift spaces and on office noticeboards and video screens. An information stand in the Cathays Park office was set up for two days to promote the campaign and to distribute re-usable bags for staff to bring back their donated clothes to the office. The initiative ran throughout the month of October 2016. The result was 2,248kg of unwanted clothing being donated to local charities from this office alone – a figure which was more than double the target.

Llywodraeth Cymru
Welsh Government
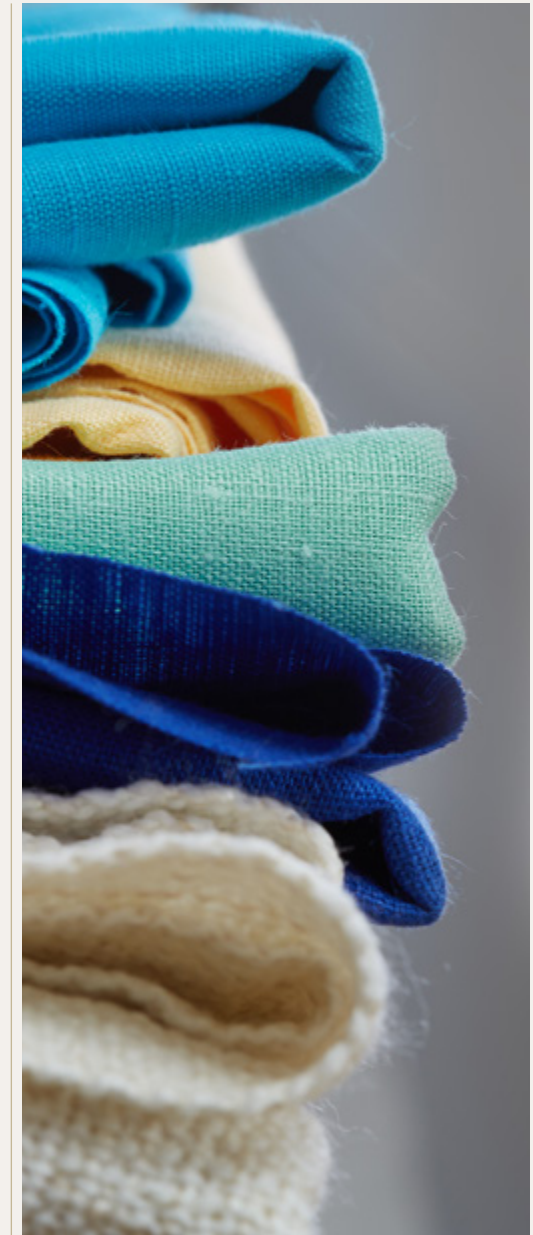
Sarah Bonwick, Team Leader for Strategic Initiatives for the Welsh Government said...

"This was a real team effort with location managers across the estate bringing the campaign to life in our regional offices. The clothing collected will generate much needed income for the charities who we partnered with, and we were pleased to far surpass our original target"
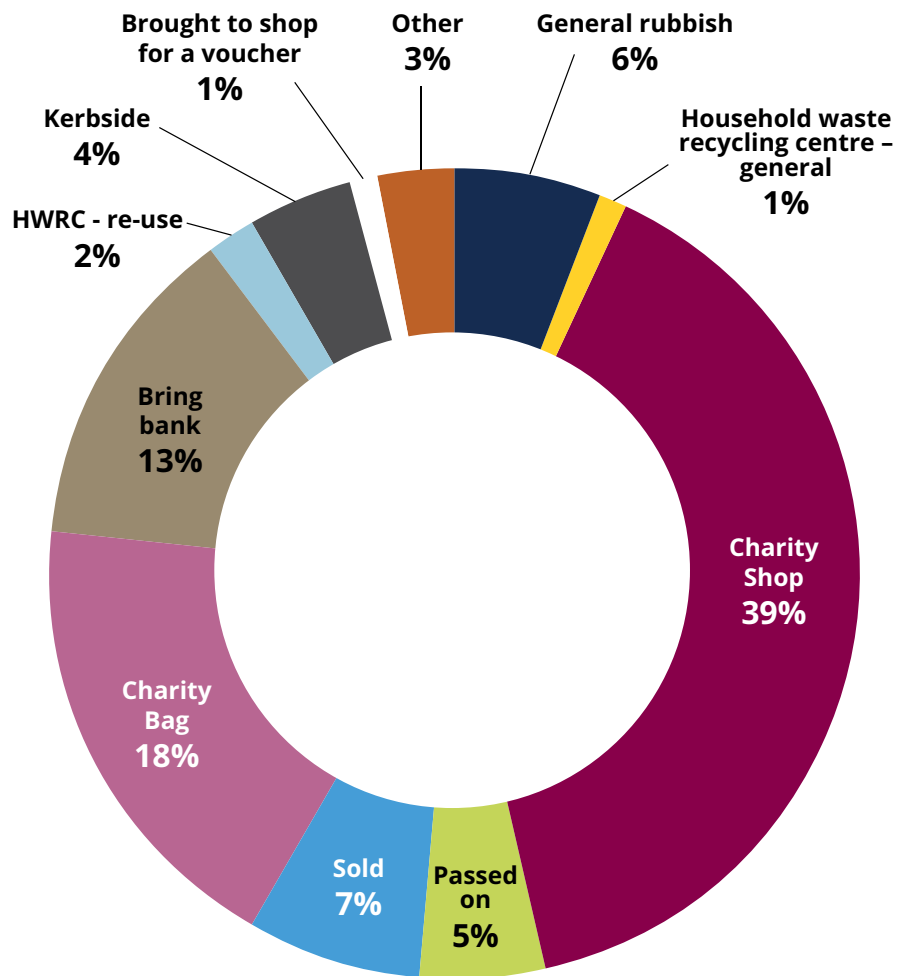
Figure 15: Disposal routes for garments, on average, reported by respondents to a survey question

Base: SCAP Sustainable Textiles Tracker Survey 2016, The items respondents disposed of last year, within each category (16,895)

A variety of options for re-using clothes are available in the UK. Figure 15 shows the most commonly used options and also shows that many consumers already embrace re-use and recycling options for clothing. The largest amount is taken to charity shops (39%), while charity bags (18%) and bring banks (13%) remain important. Re-sale is another popular route for used clothing and 7% of unwanted second hand clothes were sold. Unfortunately, 6% of the time, clothes are still disposed of in general rubbish collections where their value is lost.

Providing re-use or resale opportunities at the places where most new sales take place can make it easy for customers to extend the life of their own unwanted garments

CONTENTS   KEY
FINDINGS   SETTING
THE SCENE (A)   TAKING
STOCK (B)   IMPACTS AND
FOOTPRINTS (C)   THE SCAP
AGREEMENT (D)   SCAP
ACHIEVEMENTS (E)   SUSTAINABLE
FIBRE CHOICES (F)   VALUING OUR
CUSTOMERS (G)   MEETING
SCAP TARGETS (H)   CONCLUSIONS   ENDNOTES

To make use of this enthusiasm and increase second hand sales retailers could:

- set up take-back schemes and re-sell garments through their own stores;
- work in partnership with charity retailers to facilitate take-back and sales of second hand garments, especially those with their label on; and
- use their own websites to offer potential to increase sales.

A number of ways to increase take-back and second hand items exist, but the number of new garments that they are expected to displace is limited and so the savings potential is low. In addition to this, take-back schemes require a significant investment from retailers as well as an emotional commitment from consumers to the brand, and to buying second hand. For this reason the scope to increase second hand sales was modelled to replace just 2%, 5% and 10% of new clothing sales.

In Table 8 an increase in sales of second hand clothes brought about by retailers is modelled so that clothing lasts another 1.6 years (approximately half the length of a garment's first life is taken to be a reasonable duration for a second life).

Table 8: Potential reduction in total footprints of clothing reported to SCAP in 2015 if second hand clothing has an active life 50% longer, applied to 2%, 5% and 10% of clothing

Second hand sales	% reduction when applied to		
	2% of clothing	5% of clothing	10% of clothing
Carbon (MtCO$_2$e)	-1%	-1%	-3%
Water (m³)	-1%	-2%	-4%
Waste (tonnes)	0%	-1%	-1%

CONTENTS

KEY
FINDINGS

SETTING
THE SCENE (A)

TAKING
STOCK (B)

IMPACTS AND
FOOTPRINTS (C)

THE SCAP
AGREEMENT (D)

SCAP
ACHIEVEMENTS (E)

SUSTAINABLE
FIBRE CHOICES (F)

**VALUING OUR
CUSTOMERS (G)**

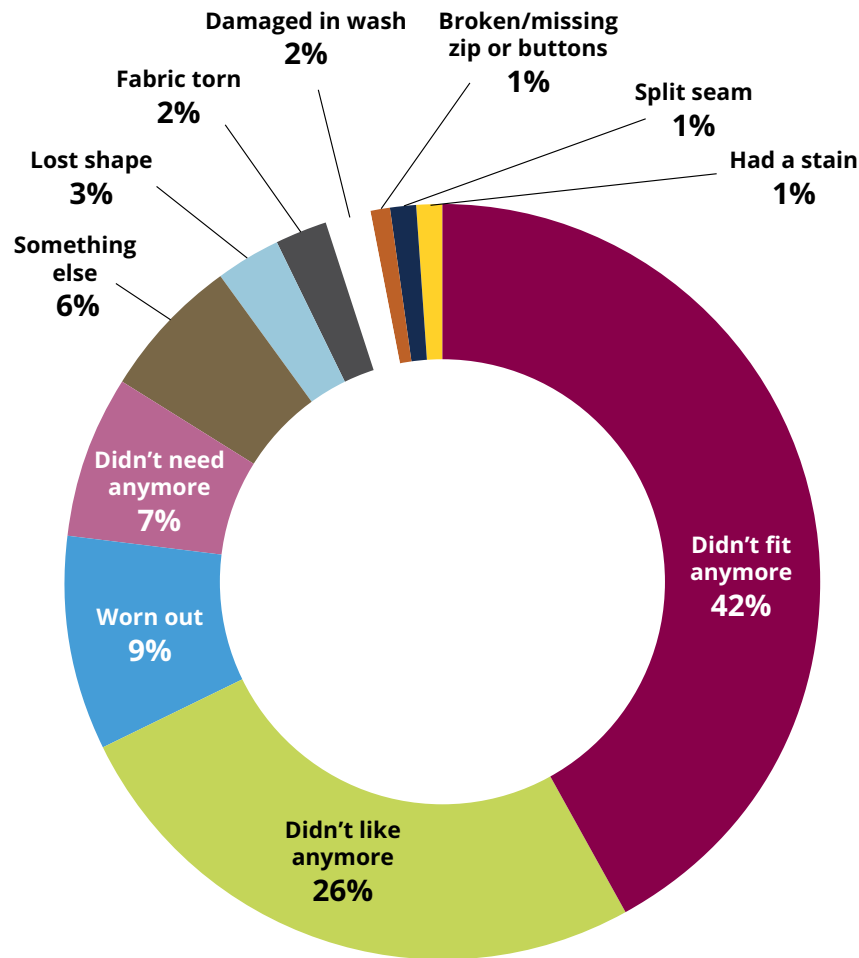MEETING
SCAP TARGETS (H)

CONCLUSIONS

ENDNOTES

Figure 16: Reasons for choice of disposal routes for garments, on average, reported in a survey[xxi]

Base: SCAP Sustainable Textiles Tracker Survey 2016, The items respondents disposed of last year, within each category (16,895)

It is estimated that over 100,000 tonnes of clothing is re-used through informal routes between family and friends. This is through direct sales and free exchange including the growing use of online exchange websites such as Freegle, Freecycle, Ebay and Gumtree; as well as parent and baby or toddler groups who often informally exchange clothing.[35]

Clothing no longer wanted or needed by its original owner may go to a number of different routes including re-use, recycling, incineration, and landfill. WRAP's consumer research also asked why people disposed of clothing.[36] The majority of responses were that items were disposed of because the clothing didn't fit, wasn't liked or wasn't needed any more (75%), as demonstrated in Figure 16.

The recycling and re-use options offer some carbon benefits but most recycling options currently result in a lower grade material being produced, for example, when clothing is turned into insulation or rags. As lower grade routes do not replace the sales of new clothing, savings in terms of water, waste and carbon are minimal.
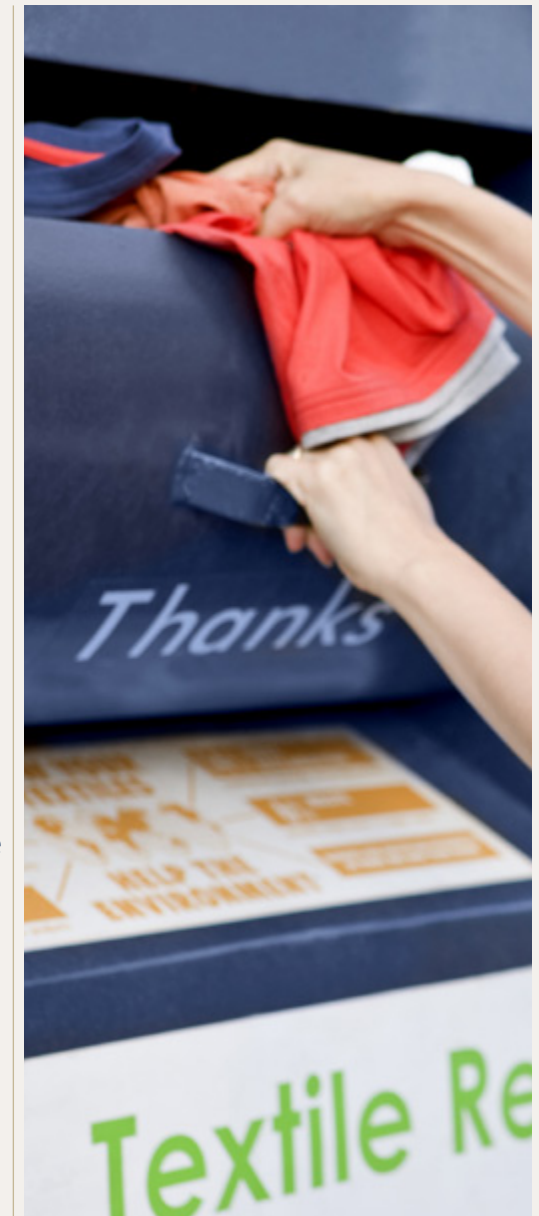
WRAP's Textiles Market Situation Report[37] looks at the key issues relating to textile recycling in the UK and estimates that 650,000 tonnes of clothing were collected for re-use and recycling in 2014. SCAP signatories and retailers work to reduce waste by providing textile banks and working with charity partners such as CRUK and Oxfam, to provide take-back schemes and effective re-use and recycling of their clothing.

However, export markets face a number of challenges. WRAP's analysis suggests that export volumes of used textiles peaked in 2014 and have been in decline since, falling by 3% in 2015 and a further 1% in 2016 despite an increase in the value of exports.

Whilst there continues to be demand for used clothing across the world, many countries have imposed restrictions on the imports of used textiles. Current discussions are focussed on two key export markets: the East African Community (a trade bloc comprising Burundi, Kenya, Rwanda, Tanzania, and Uganda) and Ukraine. The East African Community intends to ban imports of second hand clothes by 2019 and whilst the EU-Ukraine Deep and Comprehensive Free Trade Area will immediately cut duties across textiles, it contains special conditions which will apply for five years to second hand clothing. The impact of these conditions is not yet clear.

In order to maintain re-use and recycling, there is therefore a need to identify new, higher value markets for used clothing, including opportunities to increase effective and viable mechanical and chemical recycling of clothes.

650,000 tonnes of clothing were collected for re-use and recycling in 2014

More tailored solutions:
meeting SCAP
targets by 2020

More tailored solutions:
meeting SCAP targets by 2020

In addition to the continued implementation of the actions identified in Sections G and H, there are a range of further opportunities which will help to meet the SCAP targets.

"For us it's not a contradiction. We want people to buy better quality, durable goods, and at the end of their lives, recycle them."

Patagonia

Priority products

To help meet the SCAP 2020 targets, there is an opportunity for brands and retailers to focus on 'priority garments' which are sold in higher quantities and create higher environmental burden by the way they are produced. Clarifying the effects of different garment types provides a target list on which SCAP signatories can focus attention. On page 46 is an analysis of garments which were sold most frequently[38] in the UK in 2015, including their weights and fibre composition. Garment types were mapped to average weight data and average fibre composition data[39] to establish, by weight, the quantities of fibres sold, and to break this information down according to garment type. This analysis made it possible to estimate environmental impacts for each garment type.

Figure 18 presents the results. Longer bars indicate higher impact for that type of garment.

Figure 17: The priority products identified are:

women's dresses
greatest potential savings for carbon and supply chain waste;

women's jumpers
carbon savings

men's t-shirts
supply chain waste

women's jeans
big potential water savings.

The total list of garments analysed was much longer. The importance of these priority products is due to their high sales volumes; while fibre composition results affect the types of savings best likely to be achieved through focus on a particular garment type. Priority products for individual retailers will vary since average garment volumes, weights, and fibre composition were used.

To help meet the SCAP 2020 targets, there is an opportunity for brands and retailers to focus on priority garments

Figure 18: Priority products and carbon, water and waste footprints

Carbon tonnes of CO$_2$e

thousands

Scale: 0, 300, 600, 900, 1200

- Women's Dresses
- Women's Jumpers
- Women's Jeans
- Men's T-shirts
- Men's Jumpers
- Women's Coats/Raincoats
- Women's Casual Blouses/Shirts

Water m^3

millions

Scale: 0, 100, 200, 300, 400

- Women's Jeans
- Men's T-shirts
- Women's Casual Blouses/Shirts
- Women's Jumpers
- Men's Jumpers
- Women's Dresses
- Women's Coats/Raincoats

Waste tonnes

thousands

Scale: 0, 20, 40, 60, 80

- Women's Dresses
- Women's Jeans
- Women's Jumpers
- Men's T-shirts
- Women's Coats/Raincoats
- Men's Jumpers
- Women's casual Blouses/shirts

Design for durability

Designing clothes so that they last longer, so that they are 'durable', is key to reducing environmental impacts. WRAP's Sustainable Clothing Guide highlights a number of practices and strategies for introducing more durable design and tables 9 and 10 show the potential savings which can be made if clothing is designed in this way. To realise the savings, however, people must actually keep and wear their clothes for longer and businesses therefore may need to consider their business models.

If people do not wish to own increasing amounts of clothing, durability is not just an opportunity for reducing environmental impact, but also one of the business models which could assist retailers in maximising their customers' loyalty

Extending the active life of 50% of UK clothing by 9 months would save:

8% CARBON   **10% WATER**   **4% WASTE**

PER TONNE OF CLOTHING

Table 9: Durability and extending the active life of clothes: the potential reduction in total footprint of clothing reported to SCAP in 2015 if clothing has an active life of another three months

	% reduction from extending life	
	20% of clothing +3 Months	**50% of clothing +3 months**
Carbon (MtCO$_2$e)	**-2%**	**-4%**
Water (m^3)	**-2%**	**-5%**
Waste (tonnes)	**-1%**	**-2%**

Table 10: Durability and extending the active life of clothes: the potential reduction in total footprint of clothing reported to SCAP in 2015 if clothing has an active life of another nine months

	% reduction from extending life	
	20% of clothing +9 Months	**50% of clothing +9 months**
Carbon (MtCO$_2$e)	**-3%**	**-8%**
Water (m^3)	**-4%**	**-10%**
Waste (tonnes)	**-1%**	**-4%**

If people do not wish to own increasing amounts of clothing, durability is not just an opportunity for reducing environmental impact, but also one which could assist retailers in developing business models that help increase customer loyalty. Some garment types offer greater potential for durability, for example, jeans, jumpers and coats are all high up in the list of priority products, and so there is the opportunity to target design for durability with these garments.

These scenarios for extending clothing lifetimes are ambitious. However, if design improvements can help people to make their clothes last for another nine months across half of the clothing consumed in the UK, then significant improvements against all three targets could be achieved. The waste reduction target of 3.5% would be achieved as would more than half of the carbon and water savings needed to meet the SCAP 2020 targets.

What our signatories say ...

"Looking at durability as a commercial issue has enabled us to engage teams across the company and to make significant and measurable changes to our systems. As a result, this will ensure we offer longer lasting products to our customers"

WHISTLES

Roz Adams, Technical and Product Compliance Manager, Whistles

case study

Alexandra Wood Bespoke Tailoring

Alexandra Wood Bespoke Tailoring creates custom made suits for men to enhance their image and provide a luxury service from design to use and beyond. Managing Director, Alexandra Wood, was conscious that customers had no option for sourcing high quality tailored suits for events such as a business event or a wedding.

As an example, grooms often buy a suit for their wedding day, they then need to hire outfits for the wedding party. Typically, there were few options to hire high quality tailored suits. Alexandra Wood, with the support of the REBus project, set out to create a hire wear range which was not available anywhere else, and offered customers the chance to hire luxurious, Savile Row suits.

Results

- Alexandra has launched the new hire service in-store and online, as well as taking on four assistants to help with co-ordination.
- The wedding press has embraced the idea with positive editorial coverage.
- There is now also a bespoke tailored service for women, also incorporating an alteration or relining service to bring items back to life.

### Alexandra Wood, Managing Director, Alexandra Wood Tailoring said …

"Explore different avenues, and just do it! I would have never have thought I would have opened another store, an online channel and been recognised through awards and ITV."

Resource Efficient Business Models

New business models that deliver a more circular way of production and consumption, or move towards purchasing services rather than goods, are gaining wider acceptance. Reports from the Aldersgate Group,[40] WRAP[41, 42] and the Ellen MacArthur Foundation,[43] amongst others, have highlighted the opportunities in adopting these models. There are large economic benefits if strategic sectors pursue new business models aggressively in order to bring about a more sustainable way of working.

Hire and repair services are resource efficient business models which offer growth opportunities, particularly if they are able to move into the mainstream market.

REBus, an EU Life funded project[44] developing innovative and resource efficient business models, has trialled suit hire by Alexandra Wood Bespoke Tailoring, and high-end clothing hire via Rentez-Vous, to pilot the potential of increasing consumers' access to hiring luxury clothes or occasion wear.[45]
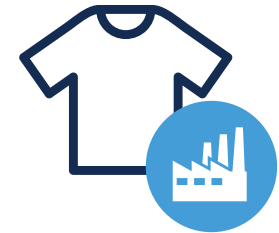
If 5-10% of clothing sales are via **hire and repair** models to extend their active life, the savings could be:

30 – 60 MILLION M³ OF WATER

80,000 – 160,000 TONNES OF CO₂e

There are large economic benefits if strategic sectors pursue new business models aggressively in order to bring about a more sustainable way of working

Table 11: Potential reduction in total footprints of clothing reported to SCAP in 2015 if clothing has an active life 50% longer through hire and repair replacing new sales, applied to 5% and 10% of clothing

	% reduction from extending life	
	5% of clothing	**10% of clothing**
Carbon (MtCO$_2$e)	-1%	-3%
Water (m³)	-2%	-4%
Waste (tonnes)	-1%	-1%

The savings from new business models are based on scenarios where 5% and 10% of clothing sales are via hire and repair business models to extend their active life. The active life of clothing is extended to 4.5 years from 3.3 years in both scenarios. Under the two scenarios, significant amounts of water – 30 to 60 million m³ – could be saved and 80,000 to 160,000 tonnes of CO$_2$e avoided through the life cycle of clothing.

There is also a need to address the barriers to recycling of clothing. Whilst many organisations have begun to address technical issues, further work is required to close the loop in making clothing recyclable and putting the measures in place to enable it to be recycled at the end of life.

Hire and repair services are resource efficient business models which offer growth opportunities, particularly if they are able to move into the mainstream market

Conclusions

Conclusions

This update to Valuing Our Clothes shows that SCAP has made good progress since 2012:

10.6% reduction in carbon against a target of 15%	**13.5% reduction in water against a target of 15%**	**0.8% reduction in waste arising across the whole product life cycle against a target of 3.5%**	**14% reduction in household residual waste against a target of 15%**

Retailer signatories account for more than 58% of the UK clothing retail market by volume, and actions taken by those signatories are making a real difference to the sustainability of UK clothing.

The following actions should be pursued to ensure that the SCAP targets are met by 2020:

Extending the life of clothes offers the greatest overall potential across carbon, water, and waste targets. This can be achieved by designing clothes to be more durable, and by encouraging re-use through sales of second hand clothing.

Helping households to better care for clothes is one of the biggest opportunities to reduce the carbon footprint of clothing and WRAP, with support from SCAP signatories and supporters, is doing this through Love Your Clothes.

As they are sold in high volumes, women's jeans should be a focus for further work to improve their sustainability, particularly the amount of water used during production.

Women's dresses and jumpers and men's t-shirts are also high volume products and should be included in work to tackle carbon and supply chain waste.

Switching to sustainable cotton offers the potential to meet the SCAP target for reducing the water footprint.

Exploring new business models offers real opportunities to reduce resource use. These include hire and repair services, as well as charity and online retail sales of second hand clothes. Several examples so far have trialled new business models on a fairly small scale, particularly for clothing hire.

Building momentum in implementing closed loop recycling of clothing. This will require action from participants across the clothing life cycle.

Building understanding of where supply chain waste arises; identifying where the opportunities are; and forging partnerships with business to work towards common goals.

Making use of, and extending the work of SCAP, relies on providing learnings from what has, and what has not worked, and on sharing information throughout the whole supply chain. There has been good progress since 2012, and there is more that can be done to ensure that the SCAP targets are met.

In doing so, SCAP signatories can continue to demonstrate that the needs of the industry and consumers can be met, whilst at the same time, taking the lead in reducing the environmental impact of clothing.

Endnotes

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