# Taking Stock
# Fact sheet 5:  Household Consumption

### Introduction

Consumption of household goods is one of the key 'lifestyle aspirations' – having got a larger house than last year, the average consumer will then want to fit it out with the latest and best furnishings, appliances and electronic gear. These we term durable goods, for example cars, furniture and electrical goods, and including anything of significant material weight with an average lifetime in use of more than one year.

In this factsheet we also consider household consumables, typically small diverse items most of which have an average lifetime in the household of less than one year. These would include papers, clothes, books, shoes, cosmetics, chemicals, toys, and a boundless plethora of miscellaneous bits and pieces. Behind the definition lies a very topical question for such items – what is 'consumption' anyway?  In the case of food or clothes it is fairly clear. In the case of a visit to the theatre, or the purchase of shares, it is less tangible, and often more difficult to pin down in material terms.  What if the consumer buys their clothes at jumble sales, or makes their own Christmas cards, or reads only books from the library?  The analysis in this section does not claim to be full and complete, but it is at least a start in bringing to light the material metabolism of an affluent society, in this region of particular affluence, the South East of England.

### Key facts

#### Durables
The largest single item of household consumption is of the private car / other vehicle, and the trend towards larger SUVs is accelerating the growth in material impact. New cars are bought by 1 in 20 people on average every year, and the result is the annual consumption of just over 50 kg of new car per person, a total of 415,000 tonnes per year in the SE.

The tonnage of furniture is not far behind that of cars, although this contains a larger proportion of renewable materials. Householders in the South East consumed 400,000 tonnes of furniture, fittings and miscellaneous fixed items in 2000, equivalent to just under 50 kg per capita.

South East householders consumed an average 13 kg per person of household electrical appliances in 2000, including washing machines, computers, televisions, hi-fi units and so on (100,000 tonnes in the SE region). Washing machines made up 22,000 tonnes, with fridges and large TVs each 10,000 tonnes, and personal computers 6,000 tonnes.

Overall, the total material consumption (TMC) from household durables is 12.5 million tonnes or 6% of all consumption in the SE region.  Half of this is from purchases of cars. The main materials in a new car include, by weight, over 50% steel, 11% plastics and 11% aluminium products. Rubber for tyres is only 5% of the total. In household furniture, paper / pulp based products including chipboard are a third of the total materials, while wood, steel and plastics are each 8-10%. In household appliances, steel comprises 40% by weight, with over 26% in miscellaneous materials.

Durable items are highly manufactured and hence have large indirect material and energy impacts. The data available is only a sketch of a very complex set of supply chains, but on the basis of what is available the total ecological footprint of furniture and electrical equipment adds up to 0.152 gha/cap. Only 10% of the overall EF of cars is due to manufacture and maintenance, the vast majority being due to fuel use and emissions in use

For furniture the 'real land' footprint component is half the total, mainly due to use of wood in the products. By contrast for electrical goods, the 'real land' component is only 1% of the total, the vast majority being made up of the indirect 'energy land' component.
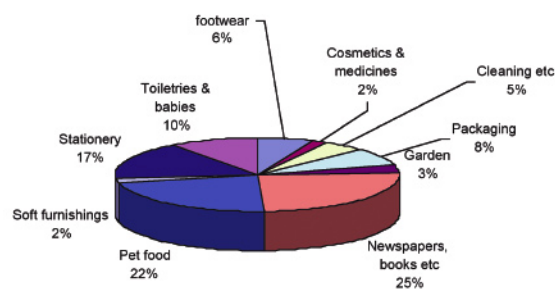
## Consumables

The South East regional direct material consumption (DMC) of household 'consumables' is over 1.75 million tonnes per year, or nearly a quarter of a tonne per person. The total material consumption (TMC), including indirect material flows, is six times greater at nearly 12 million tonnes per year.  This comprises 5% of the TMC from all activity in the SE region.

There are a few larger product types by weight: Newspapers are a about a fifth of the total, and other paper products over a third.  Toilet paper comes in at almost 7% of the total, at 14kg per person per year. Pet food is a quarter of a million tonnes per year, with a higher than average footprint due to the highly intensive meat content (bearing in mind that the average UK dog is better fed than the average human in the poorest 20% of the world).

The main materials in this hugely diverse range of products are dominated by paper based products in newspapers, books, cardboard boxes and chipboard products of every variety.  Soaps and other household chemicals make up 12% of the total, while textiles are 4% of the total by weight.  Although household consumables are a small proportion of total household consumption by weight, they form a major part of the household waste stream, at over 30%.

The total EF from all consumables is 0.37 gha (global hectares) per person per year, equivalent to 5% of the total EF from all activity. The product with the largest single footprint is pet food, with 22% of the total EF

Figure 1: Ecological Footprint proportions of different consumable items.

from consumables. Stationery, newspapers and books together comprise 40% of the total. The footprint of wood and pulp-based products such as paper, card and toilet tissue are two thirds 'real land' based. The EF of petfood is about even between 'real land' and indirect 'energy land'.

## Policy background

Future trends in consumer durables depend on 'saturation' and 'turnover', i.e. whether consumption slows down once all households have a particular item. This is difficult to predict as lifestyle and fashion becomes as strong an influence as functionality, and technological improvement is the main driver of new purchases. So, for instance, demand for televisions has moved from one per household towards one per room, and rapid improvements in computers make regular replacement likely.

Past trends show growth in consumption from 1% to 3% per year in various items. Imports of manufactured goods have increased by 6 times in 30 years (a growth rate of 7% per year). Exports of manufactured goods have increased by 4 times (5.5% per year). 93% of households in the SE have a freezer, but only 31% have a dishwasher, and ownership trends are likely to reach saturation at 100%, unlike televisions. Nearly half of households have 1 vehicle, and over a third have two, while only 1 in 6 have no car at all.

Saturation effects may slow down the growth of the total market and put greater emphasis on the turnover and replacement trends for the acquisition of new goods. These various factors can be seen in the recent trends in appliance ownership (only UK figures are available). These appear to point towards a moment at about 2020 when 100% of households will possess "all that they need", but we should bear in mind the television effect for some products and the ability of technology and marketing to create new 'needs'.

Figure 2: Trends in appliance ownership, UK
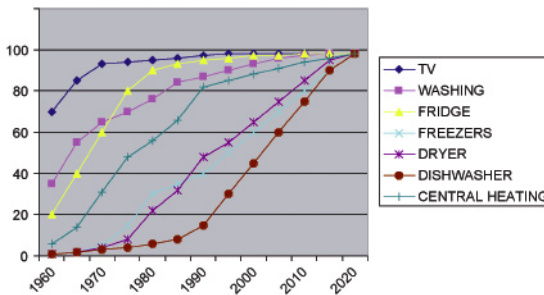


The demand for household consumables is driven by a combination of factors, which are often less predictable and apparently more volatile than with durable goods. There is less of a 'saturation' effect, i.e. there is no particular limit to the number of shoes or clothes people will buy. Throughput of consumables is generally driven by the factors of affluence: Beyond basic clothing and hygiene lie a complex mix of fashion, lifestyle, cultural habits, health concerns and so on, and in one kind of analysis, simple boredom in a post-industrial affluent society. All of this makes trend-based forecasting and modelling difficult.

Important factors include:

• Technology: The pace of innovation continues to drive or induce demand, as last year's styles or models fall behind in performance and quality. This includes energy efficiency in use for electrical products.
• Economics: The relative costs and values for many consumables are changing rapidly, to a point where the material content is very low compared to the supply chain and logistics content.
• Cultural pressures: Fashion and lifestyle are the drivers of the majority of consumption of textiles, and other accessories. These affect turnover of goods.
• Proportion of goods imported and where they come from.
• Household consumption relative to income, i.e how income growth affects consumption.
• Ecological footprint in manufacturing - an aggregate measure of the efficiency of production.
• The proportion of products re-used and recycled, rather than discarded as waste.
• 'Efficacy' factor: This is an innovative feature which aims to represent something of the perceived satisfaction, utility or welfare derived from the consumption of any particular class of items. For instance

it is clearly the case that the value of clothing depends not only on its function but on its aesthetic, cultural and symbolic appeal. Retail activity is now seen as much as 'therapy' as anything more substantial. The point here is that it may be possible to provide greater satisfaction with less material throughput, and the adjustment of this factor can reflect that.

## Possible future scenarios

In the full Taking Stock Project Report we consider four scenarios for each sector, ranging from high growth (Factor 0) through business as usual (Factor 1) to low growth (Factor 2) and finally a 'Factor Four' scenario which represents a more sustainable alternative involving more efficient use of resources and a reduced ecological footprint. The Factor Four scenarios are designed to achieve a 40% reduction in EF by 2020, and a 75% reduction by 2050, in line with the 'halving resource use – doubling efficiency' targets first set out in the book Factor Four published in 1997.

### High growth scenario (F-0)
The 'throw-away' economy continues to accelerate, with consumers driven by the mass media to work harder and buy more. While houses continue to get larger, there is never enough room to contain all the purchases, and most products become increasingly short life before they go into the waste stream. Clothes are bought for a few hours' wear then discarded, while books are downloaded, printed and then shredded in a day. Even where the paper goes back for recycling, the footprint of this intensive consumption pattern continues to rise at 2.5% per year, doubling every 30 years.

### Business as usual scenario (F-1)
Current trends continue with steady growth in purchases of furniture, cars and electrical goods, even when every person is the owner of all common products. The quality of such products continues to rise and technological improvement means that new items are needed at regular intervals. Intake of consumables also continues to rise, from increasingly global supply chains. There is some measure of corporate responsibility, and current levels of gross pollution and exploitation are reduced. However the continuing spread of affluence puts unremitting pressure on natural resources, which technological improvements such as paper-free newspapers can hardly stem.

### Low growth scenario (F-2)
Material consumption declines, but mostly for the wrong reasons – economic stagnation, social malaise and environmental disruption. The cost of energy and raw materials goes up, environmental regulations are discarded, and imports and exports decline due to international tension. Technological innovation slows down and incomes reduce, with the result that there is less reason to buy new goods.

### Factor Four scenario (F-4)
The win-win scenario sees the quality and efficiency of household durables and consumables rising rapidly. Equally important, the fixation of consumers on acquisition of new products begins to dwindle, as more people find satisfaction in non-material experiences. Much economic growth takes place in the social economy, where sharing, networking, re-use and recycling of goods is a major economic sector. Pet food is made on the spot from food waste, clothes are made loose fitting and long lasting, and there is an active recycling market which uses sophisticated databasing to match supply and demand. Newspapers use neighbourhood based wireless technology to virtually replace paper by digital displays. Imports reduce, efficiency increases in both manufacturing and use of products, and re-use and recycling increase rapidly.

Possible future scenarios

## Policy implications

Up to now there has been almost no interest in the issues relating to consumption from regional policy. At the national level, the government published in 2003 its strategy for ' Sustainable Consumption and Production' (SCP). This is more a review of possibilities than a fixed plan of action, but the main themes include:

• Taking a holistic approach that considers whole life-cycles of products and services, intervening to deal with problems as early as practicable in the resource/waste flow.
• Working with the grain of markets, and identifying and tackling market failures.
• Integrating SCP thinking and objectives in all policy development and implementation.
• Using a well-designed package of policy measures and following the principles of better regulation.

The question here is how much this is a regional agenda, and something that the regional organizations can promote. It has to be said that the obvious starting point – consuming less 'stuff' – is apparently opposite to mainstream economic policy and its goal of GDP growth. The challenge is to demonstrate to a wide range of players – producers, designers, distributors, purchasers and final consumers, the range of potential benefits in sustainable production and consumption. These might include:

• Economic benefits in new markets, improved shareholder value, reduced risk, more competitive operations, waste minimization.
• Environmental benefits at the local, regional and global scale
• Social benefits in terms of better distribution of resources, better links with international development, improved cohesion through social economy activity, and opportunities in training / skills development and intermediate labour markets.

In very practical terms, and against the mainstream in regional policy, there may be potential win-win opportunities:

• Promoting innovation in manufacturing technology, to increase productivity with less impact.
• Encouraging industrial clusters with integrated materials management systems to encourage recycling and remanufacturing.
• Innovation in materials and waste management, to create markets for re-use, recycling and other forms of recovery.
• Regional 'green' investment bank which promotes environmentally efficient production and distribution.
• Public sector sustainable purchasing consortia: The combined public sector spend in the SE region is in the order of £60 billion, of which 'consumables' are in the order of £6 billion. If this level of spending is mobilized and coordinated, then there are huge opportunities for building up supply chains in environmentally friendly goods, which then enable new markets from consumers.
• Promoting retail clusters and networks which encourage service economies i.e. leasing and hiring for a service level, rather than one-off material purchases.
• Promoting social economy groups and networks for sharing, re-use and recycling, where this is appropriate.

For further details of our findings on household consumption see the full Project Report at
www.takingstock.org.uk

### Project Partners



### Project Funders