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# A FRAMEWORK FOR PRO- ENVIRONMENTAL BEHAVIOURS

## ANNEXES

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This report has been prepared by a new environmental behaviours unit established in Defra. The roles of the unit are to assemble, analyse and translate evidence related to pro-environmental behaviours and to work within Defra and with external stakeholders to improve the design and implementation of policy interventions aimed at helping individuals and communities live more environmentally sustainable lifestyles.

This document is available on the Defra website.

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## ANNEX A - Long list of behaviours

### Key:

Green highlighted behaviour = aimed at carbon (and other ghg) reductions

Blue highlighted behaviour = aimed at carbon as secondary target

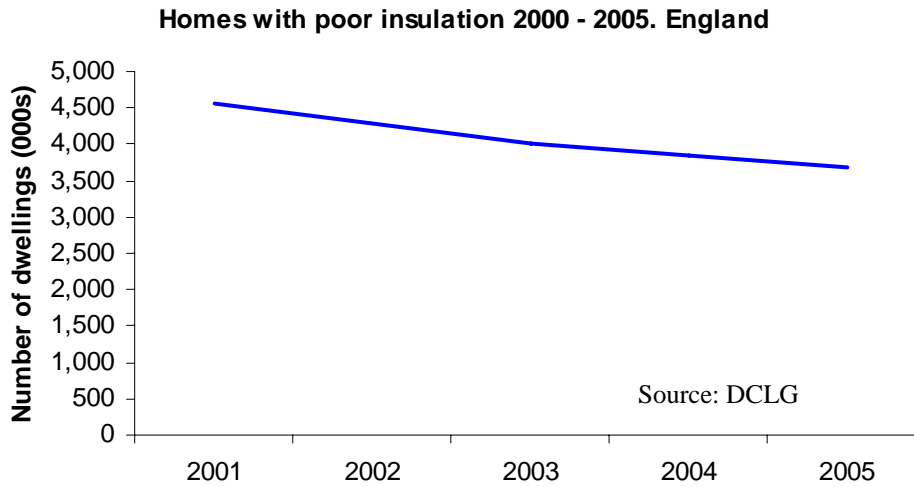
Yellow highlighted behaviour = have little or no clear impact on carbon reductions but would deliver other natural resources or ecosystems benefits.

Consumption cluster	Behaviour group	Behaviour goal	Behaviour type	Primary I impact
Homes	Energy efficiency/usage in home	Install insulation products	One-off purchasing decision	Lower energy demand for heating
Homes	Energy efficiency/usage in home	Purchase of (& build) energy efficient homes (new)	One-off purchasing decision	Lower energy demand per household
Homes	Energy efficiency/usage in home	Purchase of energy efficient homes – existing	One-off purchasing decision	Lower energy demand per household
Homes	Energy efficiency/usage in home	Better energy management and usage	Habitual everyday lifestyle	Lower energy demand per household
Homes	Energy efficiency/usage in home	Install more efficient heating system	One-off purchasing decision	Lower demand for heating
Homes	Energy efficiency/usage in home	Install domestic micro-generation through renewables	One-off purchasing decision	Lower energy demand (for non-renewables)
Homes	Energy efficiency/usage in home	Change energy tariff	One-off purchasing decision	Lower energy demand (for non-renewables, at household level)
Homes	Waste and recycling	Purchase products with a longer life-span	Habitual purchasing decisions	Less waste – reduced material use
Homes	Waste and recycling	Re-use, repair, re-sale	Regular everyday lifestyle	Reduce waste
Homes	Waste and recycling	Increase recycling (and segregation)	Regular everyday lifestyle	Reduce waste (to landfill)
Homes	Waste and recycling	Buy products with less unnecessary packaging	Habitual purchasing decisions	Reduce waste
Food	Waste and recycling	Waste less	Habitual everyday lifestyle	Reduce waste
Food	Waste and recycling	Increase home composting	Habitual everyday lifestyle	Reduce waste
Homes	Water efficiency/usage in home	Buy water efficient products	Occasional purchasing decisions	Lower water demand
Homes	Water efficiency/usage in home	More responsible water usage	Habitual everyday lifestyle	Lower water demand

## ANNEX A - Long list of behaviours

Consumption cluster	Behaviour group	Behaviour goal	Behaviour type	Primary I impact
Transport	Personal transport	Buy/use more energy efficient (low carbon) vehicles	Occasional purchasing decision/habitual everyday lifestyle	Lower CO2 emissions per km driven
Transport	Personal transport	Drive more economically	Habitual everyday lifestyle	Lower CO2 emissions per passenger km
Transport	Personal transport	Use car less – seek alternatives for short trips (<3 miles)	Habitual everyday lifestyle	Lower CO2 emissions per passenger km
Transport	Personal transport	Travel less/combine travel/car share	Habitual everyday lifestyle	CO2 emissions avoided
Tourism	Personal transport	Reduce non-essential flying (short haul)	Occasional lifestyle decision	CO2 emissions avoided, lower CO2 emissions per passenger km (or off-set)
Homes	Purchase of eco-friendly products	Buy energy efficient products	Occasional purchasing decisions	Lower energy demand per appliance
Tourism	Purchase of eco-friendly products	Avoid commodities with significant impacts on international biodiversity	Occasional purchasing decisions	Reduced import of products affecting biodiversity
Homes	Purchase of eco-friendly products	Responsible use/disposal of household products	Regular everyday lifestyle	Less pressure on water quality
Food	Purchase of eco-friendly products	Eat food locally in season	Habitual purchasing decisions/everyday lifestyle	Lower impact food production
Food	Purchase of eco-friendly products	Adopt diet with lower GHG/env impacts	Habitual everyday lifestyle	Lower energy use
Food	Purchase of eco-friendly products	Increase purchase of organic or certified/assured food and drink (include fair trade)	Habitual purchasing decisions	Environmental/social benefits
Food	Purchase of eco-friendly products	Buy more certified/assured fish and fish products (instead of non-certified)	Habitual purchasing decisions	Reduced pressure on fish stocks
Homes	Purchase of eco-friendly products	Purchase timber products from legal and sustainable sources	Occasional purchasing decisions	Less habitat destruction
Homes	Purchase of eco-friendly products	Buy plants and create habitats that encourage wildlife in the garden	Occasional purchasing decisions/regular everyday lifestyle	Increased local biodiversity
Homes	Purchase of eco-friendly products	Avoid commodities from unsustainable sources with significant impacts on national and international biodiversity e.g. from loss of habitats	Occasional purchasing decisions	Sustainable use of ecosystem goods and services

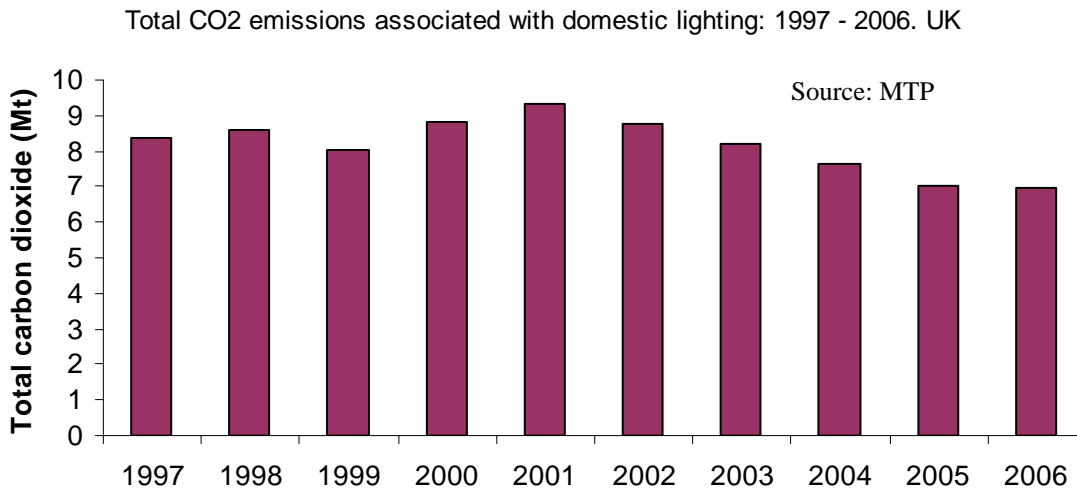
**1. Insulation**



The number of homes failing the thermal comfort criterion for reasons of poor insulation has dropped from 4,550,000 in 2001 to 3,690,000 in 2005, in England.

In the UK there are estimated to be around 8 million homes without adequate insulation.

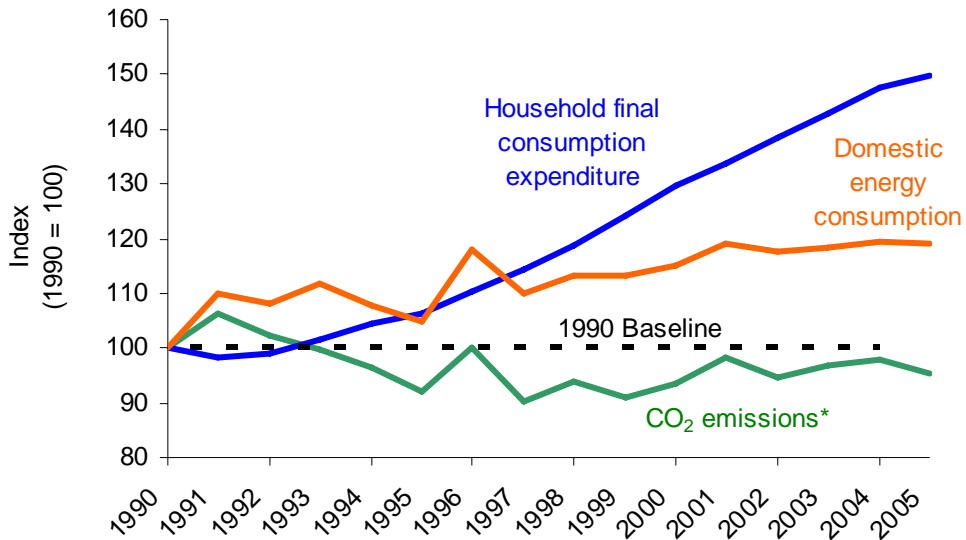
**2. Efficient products**



Total carbon dioxide emissions from domestic lighting rose between 1997 and 2001 but have since fallen by 25 per cent and in 2006 were 17 per cent lower than 1997 levels. There has been a downward trend since 2001 which is attributed to increased use of energy efficient light bulbs in the home

### 3. Energy in the home

Domestic CO<sub>2</sub> emissions, domestic energy consumption and household spending: 1990 to 2005. UK



Source: AEA Energy and Environment, BERR, ONS

Household energy consumption increased by 15 per cent between 1990 and 2005, but the associated domestic carbon dioxide (CO<sub>2</sub>) emissions have decreased by 5 per cent over the same period. This is largely the result of electricity generators switching from coal to gas or nuclear fuels.

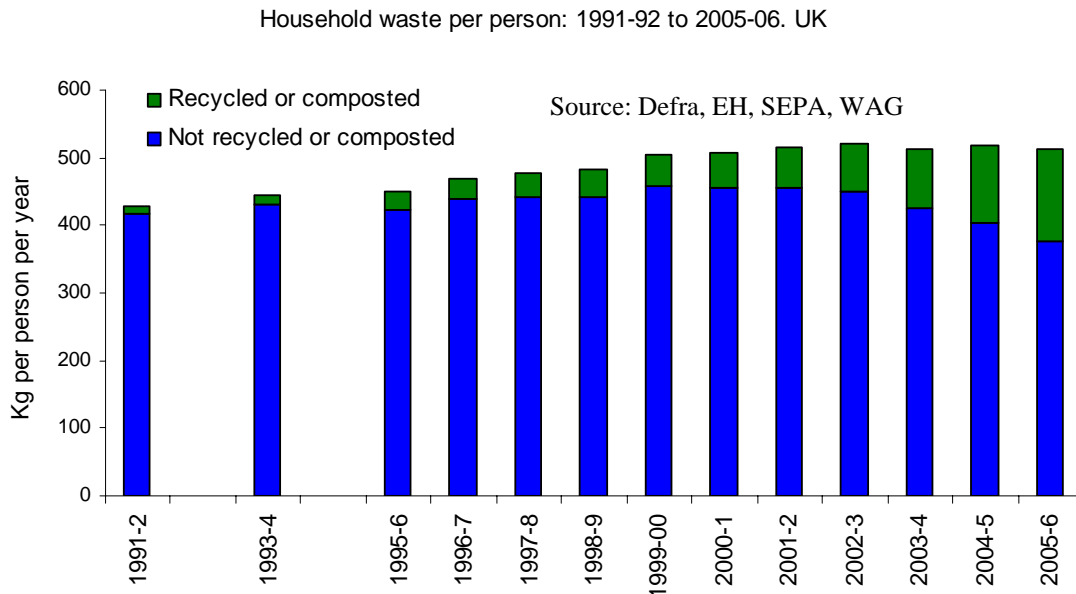
Following a drop in domestic CO<sub>2</sub> emissions in the late 1990s, there has been little change in emissions between 1999 and 2005.

There are links between energy use and household spending (through the purchase of domestic appliances and direct spending on electricity and gas). Household spending (household final consumption expenditure) increased by 50 per cent between 1990 and 2005.

### 4. Microgen

No data available

**5. Recycling**



Between 1999-00 and 2005-6 household waste per person increased by only 1.2 per cent, with each person generating half a tonne a year on average.

The amount of waste recycled or composted has increased, and accounted for 27 per cent of household waste in 2005-6.

There has been a year on year decrease in the amount of non-recycled waste per person over the last four years. It is now at the lowest level since estimates were first made in 1983-4 - most of this goes to landfill.

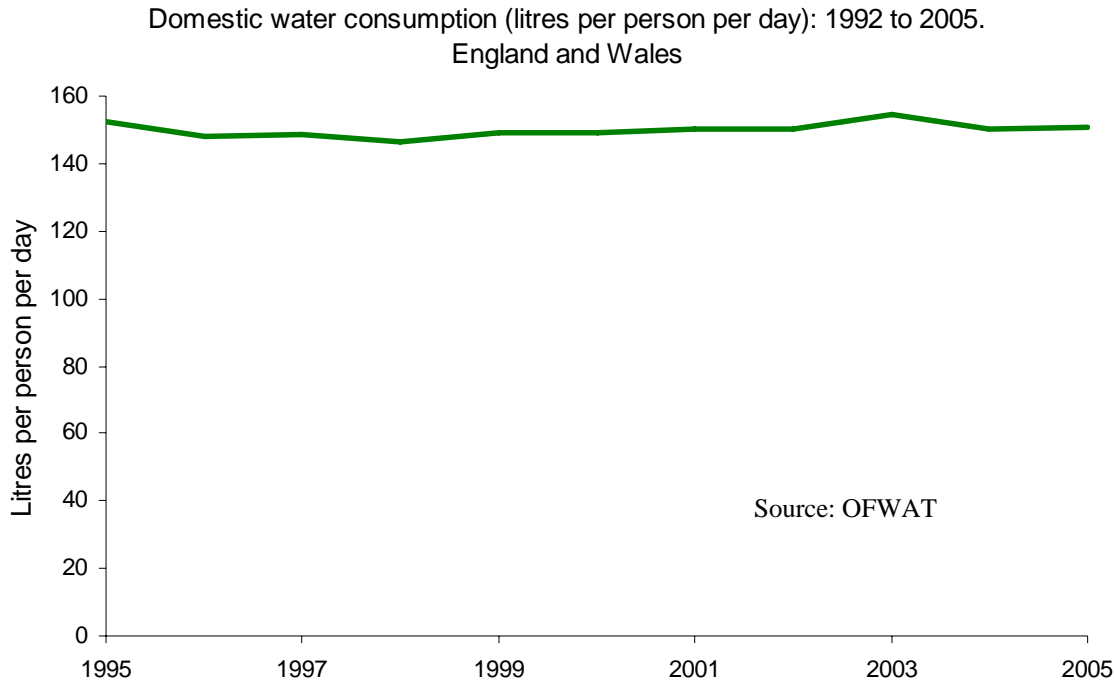
**6. Food waste**



The majority of food waste (52 per cent) is municipal while a further 30 per cent and 19 per cent come from commercial and industrial sources. Most of municipal food waste comes from households.

Total CO<sub>2</sub> emissions embedded in food waste are estimated to be 30mt CO<sub>2</sub>, at least half of food wasted was edible meaning some of these emissions could have been avoided.

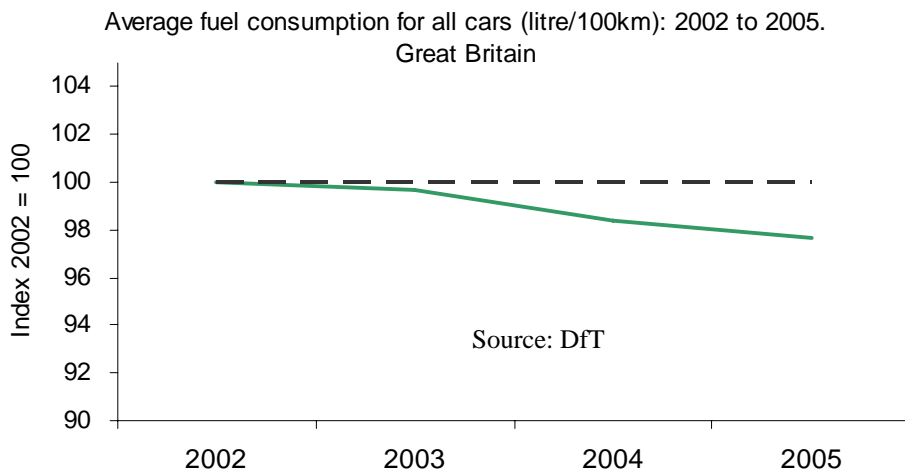
### 7. Water in the home



Household water consumption accounts for around two-thirds of water in the public supply (excluding leaks).

Households consumed an average of 151 litres per person each day in 2005. Annual changes in consumption rates are largely related to summer weather, and 2003 was particularly warm and dry. It is believed that there has been no clear underlying increase in per person consumption rates. (Data prior to 1995 are less reliable owing to early data collection systems and have been excluded).

### 8. Purchase efficient cars

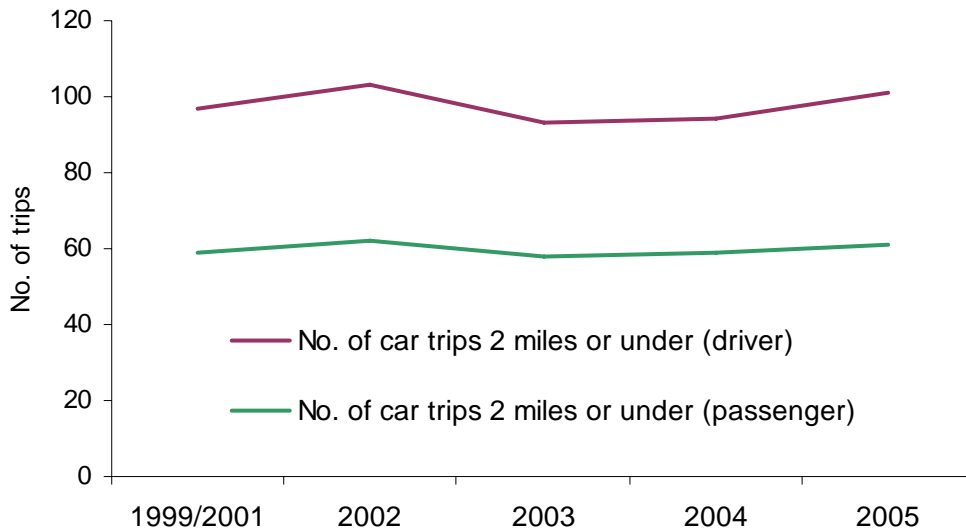


Average fuel consumption for cars has fallen by almost 2.5 per cent between 2002 and 2005.



**9a. Car trips**

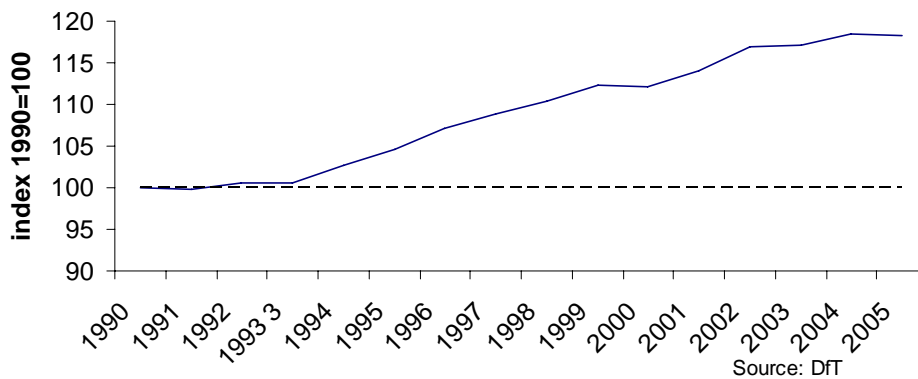
Number of trips per person per year: 2002 to 2005. Great Britain



Source:  
DfT

The number of car trips under 2 miles for both driver and passenger changed by very little between 1999/2001 to 2005. Between 2002 and 2003 driver and passenger trip numbers fell by 10 per cent and 6 per cent respectively before rising again. In 2005 the total number of car trips under 2 miles per person per year were 101 as a driver and 61 as a passenger

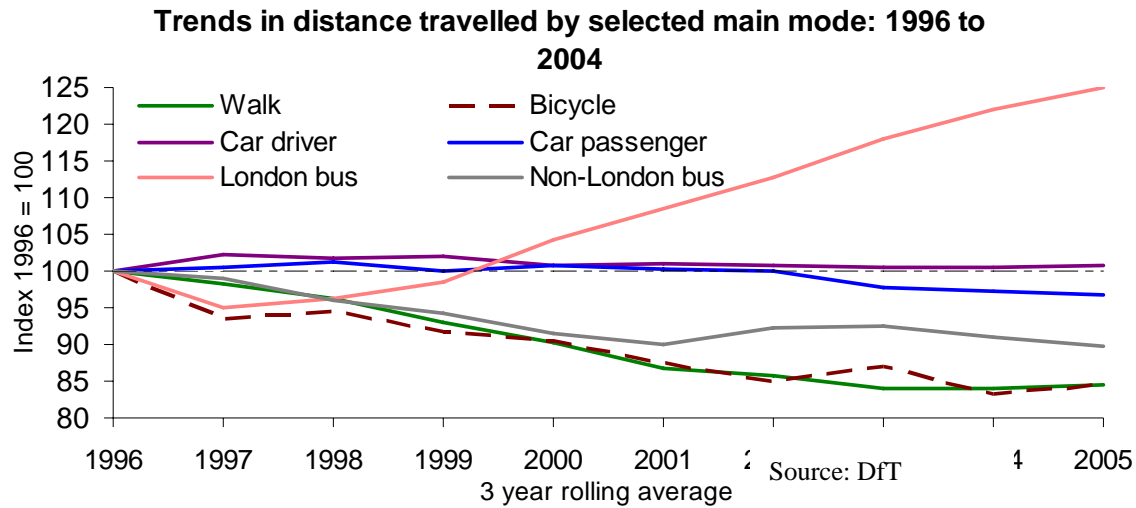
**Car and taxi km, GB: 1990 - 2005**



Source: DfT

The total km covered by cars and taxis has risen by 18 per cent from 1990 to 2005, an increase of approximately 1.2 per cent per year. In 2005 cars and taxis covered nearly 400 billion km.

**9b. All personal travel**



The average distance people travel annually has increased by about 60 per cent in the last 30 years from around 4,500 miles to about 7,200 miles. This is the combined effect of an increase in average trip lengths of nearly 50 per cent and an increase in the number of trips made per person per year of 9 per cent. Trip lengths increased from the early 1970s to the late 1990s before levelling off whereas most of the increase in the number of trips made occurred in the 1970s.

Between 1995/97 and 2005 the number of trips per person per year fell by 4 per cent, yet the average distance travelled increased by 3 per cent. This reflects an increase of 7 per cent in average trip length over the same period.

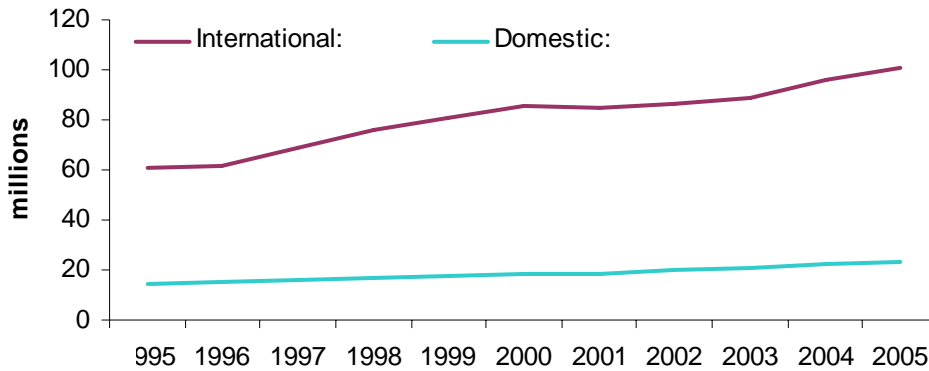
In 2005, car travel accounted for four-fifths of the total distance travelled; this has remained fairly stable since 1995/1997.

Trips by London bus have increased by 25 per cent since 1996 while trips by Non-London bus fell by around 10 per cent over the same period.

The distance travelled by bicycle fell by 16 per cent between 1995/97 and 2005 although, due to the relatively small number of cyclists in the sample, figures on travel by bicycle are more volatile than figures for more common modes.

**10. Short haul flights**

**Passengers uplifted by UK airlines from UK airports: 1995 - 2005**

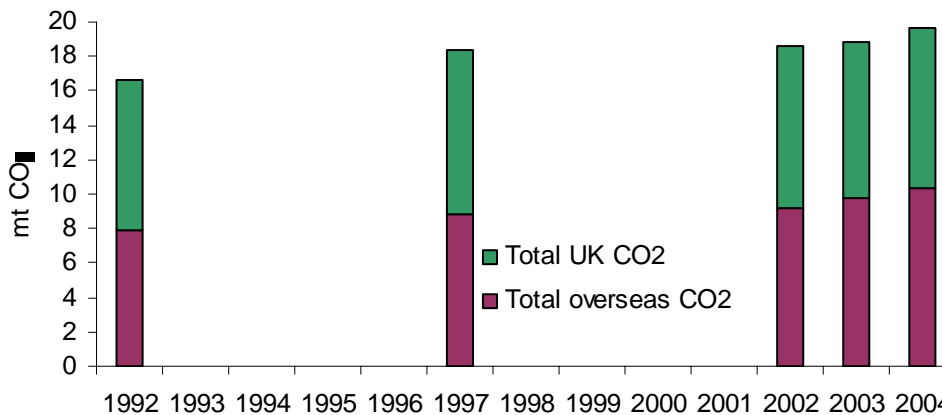


Source: DfT

Between 1995 and 2005 the number of passengers uplifted from UK airports on UK airlines to international destinations increased by 66 per cent from 61 million to 101 million. In the same period the number of passengers uplifted by UK airlines on domestic flights increased by 62 per cent from 14 million to 23 million.

**11. Eat more seasonal and local food**

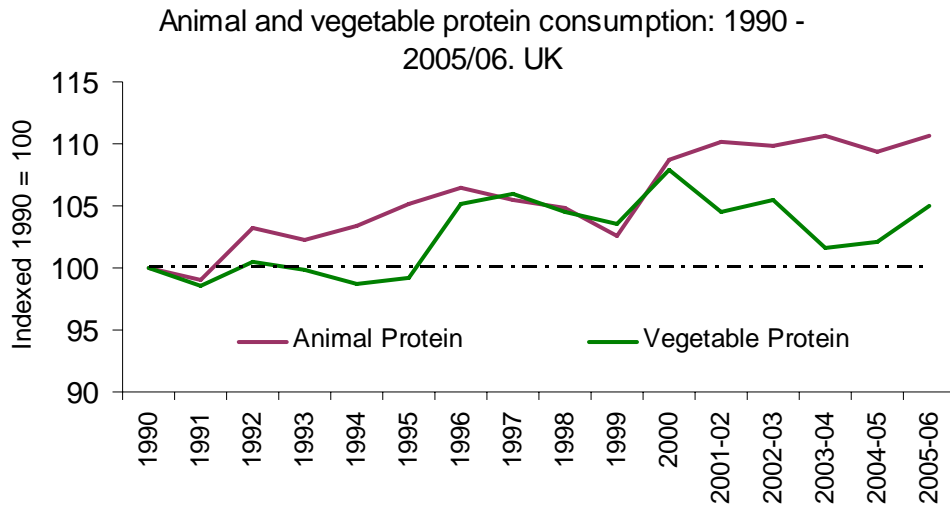
**CO<sub>2</sub> emissions from food transport: 1992 - 2004**



Source: Defra

Since 1992 overseas CO<sub>2</sub> emissions from food transported to the UK have increased by 31 percent while in the same period CO<sub>2</sub> emissions from food transported within the UK has only risen by 6 per cent. In 2004, 53 per cent of CO<sub>2</sub> emission from UK food transport were emitted overseas. Food transport produced almost 20 million tonnes of carbon dioxide in 2002, of which 9 million tonnes were emitted in the UK (almost all from road transport). Transport of food by air has the highest CO<sub>2</sub> emissions per tonne, and is the fastest growing mode. Although air freight of food accounts for only 1% of food tonne kilometres and 0.1% of vehicle kilometres, it produces 13% of the food transport CO<sub>2</sub> emissions.

**12. Lower impact food**



Source: Defra, ONS

Animal protein consumption, per person per day, has increased by 11 per cent between 1990 and 2005-06. Vegetable protein has shown much more variability over the same period but by 2005-06 had risen 5 per cent above 1990 levels. In 2005-06 60 per cent of protein in the diet came from animal protein and 40 per cent from vegetable protein.

Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
1. Install Insulation products (Cavity Wall insulation as example)	<b>750 KG/HH/pa</b> Assumes average gas heated semi-detached house with 3 bedrooms. Other types of insulation commonly used in the home will increase this figure (e.g. Hot water tank jacket saves <b>160 KG/HH</b> ) (Energy Saving Trust)	70% of population who know that they have cavity walls, know they have some cavity wall insulation. <sup>1</sup> (Qs C1 and C2, Defra Attitudes and Behaviour Survey, 2007)  Note: Domestic Energy Fact File has lower figure of about 40% for 2004.	65% of population (estimate)	Estimate based on Q F8 H Defra Attitudes and Behaviour Survey 2007 and Public Understanding of Sustainable Energy Use in the Home (Brook Lyndhurst, 2007)	30% of population (estimate) Depends on having cavity walls, affordability and tenure.	Estimate based on Qs C1, C2, A8, A10 and F8H in the Defra Attitudes and Behaviour Survey, 2007 and Public Understanding of Sustainable Energy Use in the Home (Brook Lyndhurst, 2007)
2. Better energy management and usage	<b>530 KG/HH/pa</b> Heating controls upgrade. Includes a programmer, a room thermostat, a cylinder thermostat (if you have a hot water	58% of population say they are already cutting down on the gas and electricity they use. (Q G2, 3, Defra	80% of population	Q G2, 3, Defra Attitudes and Behaviour Survey, 2007.	100% of population	Assumes no barriers as no cost implications, external constraints or inclusion issues.

<sup>1</sup> There are other ways of looking at this, for example:

Base: All people who know that they have some or all cavity walls and including those who do not know whether they have insulation for their cavity walls. 60% say they have some or all cavity wall insulation.

Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
	cylinder) and thermostatic radiator valves. (Energy Saving Trust)	Attitudes and Behaviour Survey, 2007)				
3. Install domestic microgeneration through renewables	<b>350 KG/HH/pa</b> Assumes installation of solar water heating system. (Energy Saving Trust)	<1% of population (Q C18, Defra Attitudes and Behaviour Survey, 2007)	30% of population (estimate)	Q C18, Defra Attitudes and Behaviour Survey, 2007; Public Understanding of Sustainable Energy Use in the Home (Brook Lyndhurst, 2007). (Estimate based on understanding of segment willingness through public understanding research and which segments the Defra survey showed include people currently with, or seriously considering,	7% of population	Q C18, Defra Attitudes and Behaviour Survey, 2007 (The average of the percentages saying they are seriously considering fitting either solar panels, solar heating or wind turbine.)

Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
				microgeneration.)		
4. Increase recycling and segregation	<b>540 KG/HH/pa</b> Assumes people double their recycling effort (average local authority recycling rate raised to best) <i>and</i> buy 10% of clothes second hand. (Defra; WRAP)	71% of population People recycle more than they throw away (Q G2, 5, Defra Attitudes and Behaviour Survey, 2007)	86% of population	Q G2, 5, Defra Attitudes and Behaviour Survey, 2007.	94% of population	Q E1, Defra Attitudes and Behaviour Survey, 2007.
5. Waste less (food)	<b>600 KG/HH/pa</b> Assumes 30% of food is thrown away over half of which is edible (WRAP, 2006)	64% of population (Q G2, 6, Defra Attitudes and Behaviour Survey, 2007)	80% of population	Q G2, 6, Defra Attitudes and Behaviour Survey, 2007	100% of population	Assumes no barriers as no cost implications, external constraints or inclusion issues.
6. More responsible water usage	<b>140 /KG/HH/pa</b> Assumes people install a 'low flow' shower, take a shower rather than a bath, turn off taps, don't water garden with hosepipe, put a hippo in the cistern, install a water butt, fix dripping taps, recycle	52% of population (Q G2, 4, Defra Attitudes and Behaviour Survey, 2007)	79% of population	Q G2, 4, Defra Attitudes and Behaviour Survey, 2007	100% of population	Assumes no barriers as no cost implications, external constraints or inclusion issues.

Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
	their bath water once a month. (Environment Agency, World Land Trust)					
7. Buy/use more efficient (low carbon) vehicles	<b>780 KG/HH/pa</b> Assumes a 24% reduction when switching to the most fuel efficient model in class. (DfT)	27% of population of those who have a car (Q G3, Defra Attitudes and Behaviour Survey, 2007)	74% of population of those who have a car	Q G3, Defra Attitudes and Behaviour Survey, 2007	83% of population of those who have a car	Q G3, Defra Attitudes and Behaviour Survey, 2007
8. Use car less/Seek alternatives for journeys (<3 miles)	<b>750 KG/HH/pa</b> Assumes people: cut out short car journeys (under 2 miles); travel 10% less; switch from car to other modes (for 10% of miles travelled); and drive Smart (8% reduction, DfT). Based on most efficient car in class. (Defra / DfT)	29% of population, of those who have a car (Q G2, 1, Defra Attitudes and Behaviour Survey, 2007)	54% of population of those who have a car	Q G2, 1, Defra Attitudes and Behaviour Survey, 2007	78% of population of those who have a car	Q G2, 1, Defra Attitudes and Behaviour Survey, 2007



Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
9. Reduce non-essential flying (short haul)	<b>1,120 KG/HH/pa</b> Assumes reduction of one short haul return flight from Heathrow to Malaga, for each person in a household of average size (2.31). Does not account for radiative forcing. (DfT & AEA, 2007)	28% of population, of those who fly (Q G2, 2, Defra Attitudes and Behaviour Survey, 2007)	54% of population of those who fly	Q G2, 2, Defra Attitudes and Behaviour Survey, 2007	85% of population of those who fly	Q G2, 2, Defra Attitudes and Behaviour Survey, 2007
10. Buy energy efficient products (Energy efficient appliances as an example)	<b>140 KG/HH/pa</b> Assumes households replace 10 year old dishwasher with new one and replace the two most used lights in the home with energy saving ones. (Energy Saving Trust)	62% of population (Q F8, K, Defra Attitudes and Behaviour Survey, 2007)	70% of population (estimate)	Estimate based on Q F8, K, Defra Attitudes and Behaviour Survey, 2007; understanding of segment willingness; and the Public Understanding of Sustainable Energy Use in the Home (Brook Lyndhurst, 2007).	45% of population (estimate)	Estimate based on Q F8, K, Defra Attitudes and Behaviour Survey, 2007; understanding of segment ability; and the Public Understanding of Sustainable Energy Use in the Home (Brook Lyndhurst, 2007)
11. Eat food locally in season	<b>10 KG/HH/pa</b> Assumes a 10% reduction in tonnes of	37% of population (Q G2, 7, Defra Attitudes and	74% of population	Q G2, 7, Defra Attitudes and Behaviour	79% of population	Q G2, 7, Defra Attitudes and Behaviour Survey,

Annex C – Calculation of household impacts, current uptake, willingness and ability to act

Behaviour Goal	Impact (KG/HH/pa)	Current Uptake (%age of population)*	Willingness to act** (%age of population)	Research informing assessment	Ability to act*** (%age of population)	Research informing assessment
	food transported by air replaced with HGV. Takes into account radiative forcing factor. (Defra	Behaviour Survey, 2007)		Survey, 2007		2007
12. Adopt diet with lower GHG/env impacts	<b>260 KG/HH/pa</b> Assumes people eat a healthy diet.  <b>630 KH/HH/pa</b> Healthy vegetarian diet. (Stockholm Environment Institute)	6% of population Includes current vegetarian, vegan and fish eating (Q F7, Defra Attitudes and Behaviour Survey, 2007)	10% of population (estimate)	Estimate based on Q F7, Defra Attitudes and Behaviour Survey, 2007 and findings from Public Understanding of Sustainable Consumption of Food, OLR, 2007.	100% of population	Assumes no barriers as no cost implications, external constraints or inclusion issues.

Assumptions behind these calculations (and those for the willingness and ability to act columns) are based on details from the Defra Attitudes and Behaviour Survey, 2007. Generally, these figures do not exclude 'Don't know' and 'Not applicable' from the base. Qualitative research (the 'public understanding' series) is considered alongside this survey for some questions where it can add insight. It is important to see these assessments as indicative and to focus on how they relate to each other, rather than the absolute percentages for each behaviour and assessment.

\* The responses that relate to these calculations include those people who say they are already doing and intend to keep doing the specific behaviour and refer to a subset of the full population where appropriate. For example, for the insulation behaviour goal, the current uptake figure has a base of those who say that their homes have some or all cavity walls, and for the assessments for those goals related to flying or car use, those who responded 'not applicable' are excluded from the population base.

## Annex C – Calculation of household impacts, current uptake, willingness and ability to act

\*\* Willing to act is interpreted to include all who are currently acting, thinking about acting, and just not thought about it; those who actively disagree with the behaviour, state they will not carry it out or have tried but failed, or say they think they will give up are categorised as unwilling.

\*\*\* Ability to act is interpreted to include the responses for all who are currently acting, thinking about acting, just not thought about it and don't want to. Where possible it also accounts for external and physical barriers including affordability, building constraints, lifestyle demands, geographical constraints. This is based on a combination of quantitative and qualitative research and is intended to be indicative only.

# Behavioural Goal: Energy Efficiency in the Home

## ANNEX D

### Measures that provide core infrastructure

- Energy Efficient Products: White Goods A-G Labelling, Energy efficiency recommended, voluntary phase-out of inefficient lighting;
- Change boiler: Boiler standards in Building regulations
- Switch tariff: Renewables obligation, disclosure on bills;
- Build / buy efficient homes: Home Information Packs/Energy Performance Certificates, Building Regulations, Code for Sustainable Homes, no Stamp Duty on new Zero-Carbon homes, Local planning requirements for new developments;
- Energy management: provision of energy displays and smart metering

Measures that provide fiscal, legislative or accredited 'ranking' to motivate behaviour change through taxation grants, league tables, penalties/fines

- Energy efficient products: product labels, promotion and subsidy via EEC/CERT;
- Market Transformation Prog

- Install insulation :reduced VAT. Warm Front / EEC/CERT. Landlords' Energy Saving Allowance
- Install microgen: grants/ low VAT rate (Microgen Strategy) Community Energy Programme

Enable

Measures that provide opportunity for the public to participate in the debate; through community & social networks, marketing

- Install insulation: WarmFront – qualifying benefits

Encourage

Engage

- EST publicity, advice e.g., Homebuyers checklist, CAfE
- EEC publicity (insulation)
- Climate Change Fund, Every Action Counts, Environmental Action Fund

Exemplify

Measures that demonstrate Government's commitment through leading by example or building clarity/consistency across Defra and OGDs

Gov. C commitment – 2012 commitment C neutral Government estates?

All new homes built by social landlords or English Partnerships to meet Code for Sustainable Homes level 3

# Behavioural Goal: Waste: reduce, re-use, recycle and compost and accept need for residual waste treatment facilities

Measures that provide core infrastructure

-Increase recycling/reuse/composting: encouragement plus provision of infrastructure and markets for recyclate etc; WRAP – developing market, retailers initiative, support to LA.s.; Waste less food; Avoid unnecessary or excessive packaging; -Better acceptance of residual facilities  
-PR and information campaign based on sound understanding of reasons for current reluctance; greener living webpages on direct gov.

Measures that provide fiscal, legislative or accredited 'ranking' to motivate behaviour change thru taxation, grants, league tables, penalties/fines

## INCENTIVES

Financial incentives for waste minimisation/ recycling by households; WRAP discounted compost bins

## DISINCENTIVES

Faster increases in landfill tax; Financial incentives for waste minimisation/ recycling by households  
Feedback thru National reporting in waste strategy; recognition of best performing councils eg beacon status, LAAs

Encourage

Enable

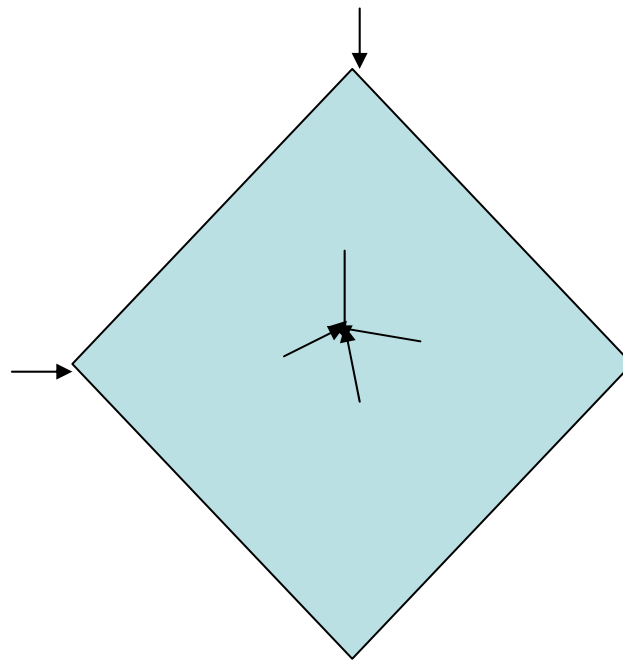
Engage

Exemplify

Measures that demonstrate Government's commitment thru leading by example or building clarity/Consistency across Defra and OGDs

Gov. commitment to own stretching targets; high profile schemes eg composting in schools

Measures that provide opportunity for the public to participate in the debate: thru community & social Networks, marketing  
- Better understanding of who objects to waste facilities and why  
-TV adverts, local press, branding etc for recycling; attitude survey currently establishing needs for pr campaign on residual treatment



# Behavioural Goal: Water Efficiency in the Home (& Garden)

Measures that provide core infrastructure  
All – metering in some circumstances  
-Code for Sustainable Homes  
-Water Act – conservation duties on water companies

**Enable**



Measures that provide fiscal, legislative or accredited 'ranking' to motivate behaviour change thru taxation, grants, league tables, penalties/fines

**Encourage**



INCENTIVES: Water efficient devices- support for water butts  
DISINCENTIVES: All Metering

Measures that provide opportunity for the public to participate in the debate: thru community & social Networks, marketing  
All- Envirowise, MTP, Waterwise, Water companies  
Publicity  
Are you doing your bit?

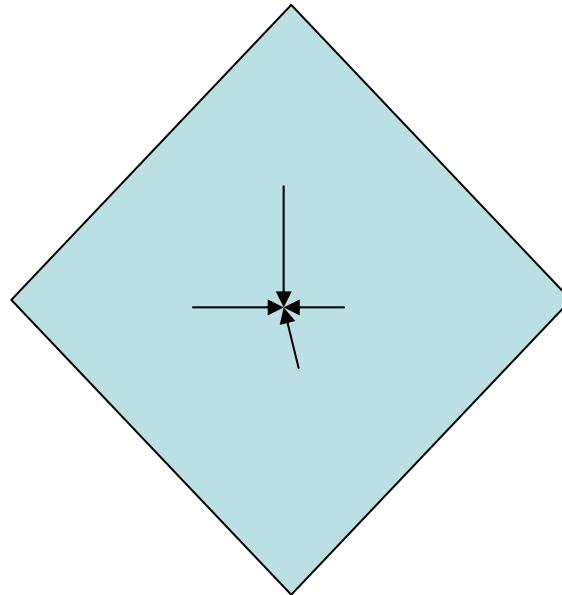
**Engage**



**Exemplify**



Measures that demonstrate Government's commitment thru leading by example or building clarity/Consistency across Defra and OGDs  
Government commitment; Water Saving Group



# Behavioural Goal: Personal transport: travel more responsibly, cut reliance on car

Measures that provide core infrastructure

- Energy efficient vehicle – labelling
- Switch to public transport, walking, cycling – planning guidance, infrastructure
- PPG13 integrate planning
- Switch Fuel - Road Transport Fuel Obligation

Measures that provide fiscal, Legislative or accredited 'ranking' to motivate Behaviour change thru Taxation, grants, league tables, penalties/fines

## INCENTIVES

-Travel less / carshare support car clubs

-Tax incentives for employers

-Fuel type – Reduced

congestion charge

## (ii) DISINCENTIVES

-Switch to public transport – Congestion charge (London)

- Energy efficient vehicle: graduated VED, company car tax

- Fly less – air passenger duty (but no VAT)

## Encourage

## Enable

## Engage

## Exemplify

Measures that demonstrate Government's commitment thru leading by example or building clarity/Consistency across Defra and OGDs  
Gov. commitment to green transport  
Local schemes

Measures that provide opportunity for the public to participate in the debate: thru community & social Networks, marketing

Switch to public transport / travel less/share

- promotion of alternatives

-green travel plans (including for schools)

- local transport plans

-Act on CO2 campaign

## Behavioural Goal: Buy more eco-friendly products

### Measures that provide core infrastructure

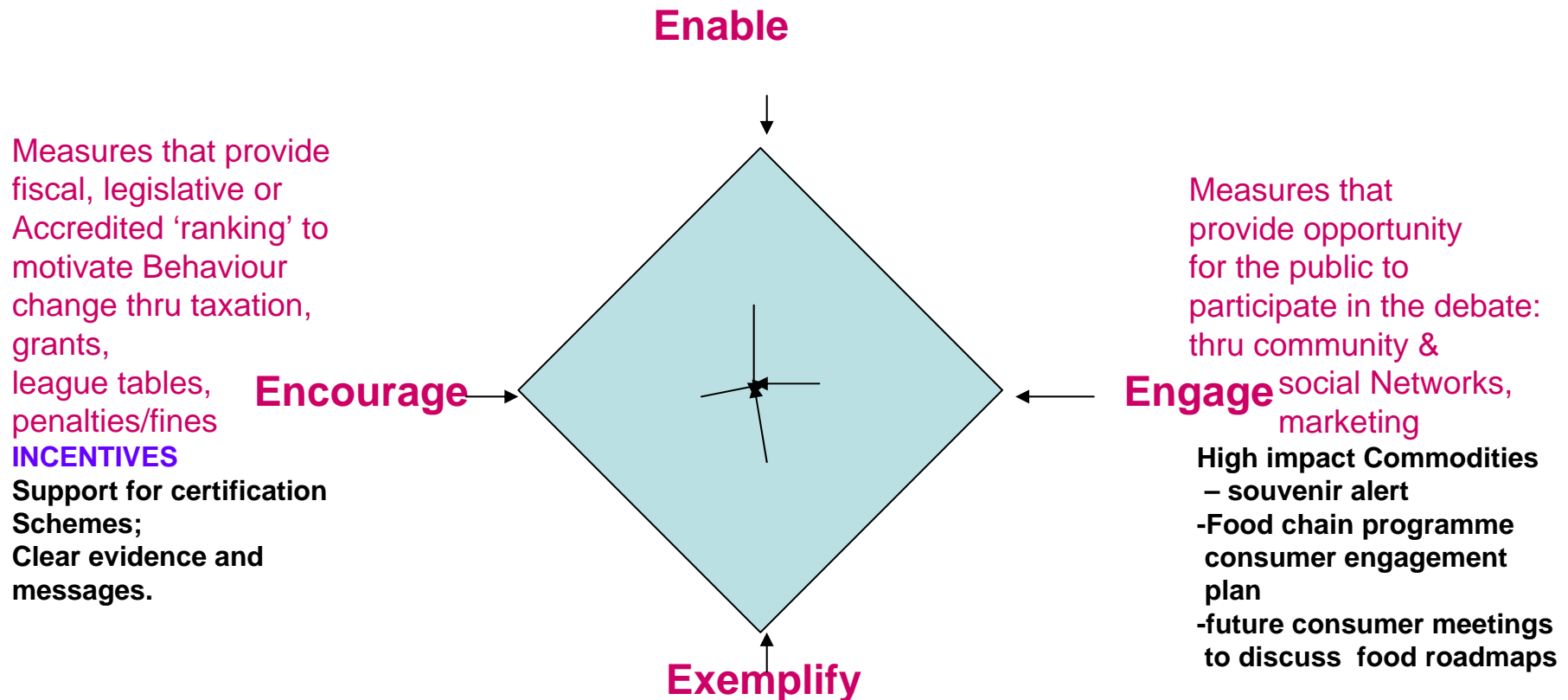
Buy food when locally in season and fresh unprocessed or lightly processed food

Buy sustainably assured seafood that has come from a well managed fishery.

Measure embodied GHG in food

Sustainable timber – certification/labelling;

Greener living webpages on directgov



### Measures that demonstrate Government's commitment thru leading by example or building clarity/consistency across Defra and OGDs

-Government commitment: working on vision of what a sustainable food chain will look like; identifying what a low impact diet could be; clarifying consumer messages about buying locally in season food and imported food; overseeing development of standard methodology for measuring embodied GHG in food.  
public sector food procurement initiative / NHS sustainable food; Sustainable timber – Gov. procurement



## **Checklist of best practice principles to encourage pro-environmental behaviour**

Recent research has highlighted a number of issues and factors that impact on adoption of pro-environmental behaviours. In addition, there have been several reviews of what constitutes best practice. This checklist builds on both existing research and reviews to provide a coherent set. So far, few of these points have been addressed collectively by those organisations seeking to encourage the public to live a life with less impact on the environment.

### **The big picture**

#### **1. There is no single solution that will motivate a mainstream audience to live a greener life. It requires multiple, integrated interventions.**

Research on securing changes in behaviour suggests there is not one thing that will make mainstream consumers want to live a greener life. People have different motivations and barriers for different behaviours. Where people share a common motivation for a particular behaviour it does not follow that they will share the same motivation for other behaviours. Therefore using a combination of interventions will be more effective than a single intervention.

#### **2. Draw on all the interventions available to you. Develop an intervention mix combining tools from across the policy and communications spectrum.**

Consider the full range of interventions available, whether directly or through partner organisations. These tools include infrastructure, fiscal incentives, and legislative, regulatory, and communications-based interventions. Relying on communication activity alone, or focusing solely on communicating policy measures, is unlikely to deliver changes in behaviour. A holistic approach, pulling together a range of measures, is likely to be more successful in achieving a significant move to more pro-environmental behaviour.

Behavioural change theories agree that simple linear models are inadequate and that the concepts of 'economic rationality' and information deficit models seem insufficient. Information does not necessarily lead to awareness, nor awareness necessarily lead to changes in behaviour. Instead there are many different complex models, which show how various internal and external factors combine to determine the end behaviour.

Sir Nicholas Stern, in his report on the economics of climate change, recommends that a variety of tools are used in combination and that the weighting of each is altered until the desired behavioural effect is apparent. He cites research into schemes promoting home insulation, in which varying the level of the incentive was not found to alter rates of take-up (*once* a minimum level of effectiveness had been reached). However altering the promotional methods used for the scheme did increase take-up. It is about developing the right balance of measures for different population groups and behavioural goals.

Certain theories on behaviour change also propose that interventions need to work on more than one level (i.e. individual, organisational and societal) to be effective. These theories outline the value of exploring all the external factors (such as technology, culture and education) that limit the possibilities an individual has for behaviour change and taking into account the dynamics between them. Such an approach could lead to the development of interventions that target producers and consumers at the same time, for example.

The design of interventions should consider a number of areas including; the implications for other areas of policy and/or communications; the impact on equity with consumers and businesses; value for money; whether it provides additional benefits (i.e. that would not have been secured without the intervention); public attitudes to the intervention and end goal; and, of course, the scope of the intervention mix.

Securing lasting change requires a package of focused interventions that influence enough key factors to lead to adaptation, or adoption, of behaviours. A multi-disciplinary team, involving policy advisers, social researchers, economists, statisticians and marketing specialists, helps deliver such an approach.

**3. Build an understanding of the public and societal trends. Consider public attitudes, beliefs, motivations, barriers, and current and desired behaviours. Review your options for interventions against these insights. Use key insights and segmentation models to develop targeted approaches.**

The gap between some individuals' environmental beliefs and their actual behaviours (the 'value action' gap) is well reported. This highlights the importance of understanding the internal and external factors that contribute to an individual's behaviour. Defra's pro-environmental segmentation model defines distinct audience segments based on shared environmental attitudes and values. Profiles for each segment cover sociogeodemographics, attitudes towards behaviours, current and potential behaviours, knowledge and engagement, and motivations and barriers. Consumer insight from wider research and monitoring of societal trends provide a context for this work. Key insights from this evidence base inform the development of tailored approaches targeting each segment to increase their environmental norms. Audience groups are not passive and we need to assess when, where and why there are changes in people's behaviours, attitudes, motivations and barriers within segments.

**4. Understand the behaviours you are asking people to adapt or adopt. Tackling habits, choices or purchasing behaviours may need different tactics.**

Within a behavioural framework, different approaches and intervention mixes may be needed to influence habits, choices, and purchasing behaviours (which may be occasional, one-off or regular purchases).

People minimise thinking requirements by habitualising behaviours, such as supermarket shopping where the average purchasing decision is made in four seconds. When people are on automatic pilot conscious choice messages will not reach them. Some behaviour change theories suggest that activity seeking to change habitual behaviour first needs to bring it to people's conscious attention and get them

to think about it ('unfreeze') before convincing people to change, develop new habits and 'refreeze' them. Research findings suggest that one-to-one dialogue, group working, and long-term engagement tactics facilitate this process.

Researchers and marketers are interested in whether there are ways of packaging different behaviours together for specific population groups. Some research findings suggest certain behaviours are 'catalyst' behaviours. Such behaviours may be those perceived to fit with an individual's identity, or status behaviours, and are those most likely to lead to adoption of other behaviours. Other research questions whether there is a 'spill over' effect where, for example, people who are committed recyclers are more open to some behaviours rather than others.

**5. Be clear what your organisation and programme can do as well as what others are doing. Consider the role of government, business and the public – the triangle of change.**

Your strategy should be clear on where your organisation can deliver and where others have a role, whether through collaborative working, delivery, or in reaching your audience.

The Sustainable Consumption Roundtable Report identified a triangle of change involving government, business, and the public where all parties must act and no one can lead alone. The opportunity for government is to define the roles and lead the coordination of the work with business and the public.

The government role goes beyond providing the infrastructure to enable the public to do what it would like them to do, such as recycling provision through local authorities. There is a need for government to lead by example and demonstrate wider commitment to what they are asking others to do. Government can do this by:

- developing and implementing policy interventions that address behavioural areas that cannot be resolved by other means;
- choice-editing product availability through working with business and other organisations; and
- commitment to the headline behaviours in procurement and the behaviour of MPs, ministers and public sector employees.

**6. Work across sectors in designing and implementing programmes - evidence shows this makes interventions more successful.**

Reviews of approaches to deliver changes in behaviour show that working collaboratively with partner organisations to develop and implement services, or to build infrastructure, is more successful. It is most effective if these organisations are involved from the beginning.

**7. Accept that outcomes of behaviour change interventions are difficult to predict; we need to take risks and pilot activity.**

As one Defra commissioned study puts it; we have a choice between spending another 50 years investigating the reasons why people do not switch off their lights (as a behavioural example); giving up and deciding we will never know why they do not; or recognising we understand why some people do not and can develop activities to

address some of these drivers. Yet not all of these activities will deliver changes in behaviour and they will not work for everyone. This should not be seen as a failing.

There is a value in piloting activity in regions or with specific audience groups, both when this is envisaged to precede a national rollout and as stand-alone initiatives.

### **8. Recognise securing behaviour change is a long term process not a single event.**

For all the reasons covered so far (particularly the multiple factors that contribute to an end behaviour) securing increased levels of pro-environmental behaviour with the public is a long-term process. Evaluation and feedback mechanisms are vital to driving and sustaining change and should be incorporated into intervention mixes.

Some models suggest people move through different stages of change – that some people are not even on the continuum of change that would lead to the desired behaviour, others are thinking about it, and others have changed their behaviour and are trying to maintain it.

Others highlight that interventions should be seen to catalyse change through their combined impact. For example, changes in behaviour may be secured through the cumulative effect of a number of activities that build momentum over time.

### **9. Demonstrate consistency.**

Many people look for consistency as indicative of an organisation's or government's commitment to being pro-environmental and are quick to highlight inconsistencies as reasons why they do not need to act. This consistency should be evident in a number of ways, for example, using the same messages, language and explanations; in the approaches used in government policy and communications; and across government departments.

### **The specifics**

#### **10. Address both internal and external motivations and barriers.**

A strategy needs to be informed by emotional (as well as rational) motivations and barriers, and by external motivations and barriers to changes in behaviour (such as cost implications and lock-in through circumstances).

Economic rationality as defined by 'economic or rational man' may not translate effectively from theory to the real world in the context of behaviours. Consumer decisions are informed by emotions, habits, fashions, social norms, and peer pressure. Some of the most common elements of behaviour change models include the role of social norms (expectations from others in a community), social identity (the person visible to the outside world), personal norms (feelings of what *should* be done), and a person's values (sense of personal responsibility and aspirations). A further key internal barrier limiting people's capacity to undertake pro-environmental behaviours is agency; the extent to which they feel capable of undertaking the behaviour in question and whether they think it would matter if they did.

### **11. Optimise common motivations and barriers. Use non-environmental motivations.**

It is important to build a deep understanding of the motivations and barriers for different population groups, where these are shared, and how we can work with them. We also need to recognise the difference between identifying actual drivers for behaviours (motivations and barriers), people's concerns, and life-stage opportunities.

Concern for the environment is not always the primary driver for people adopting a range of behaviours that we perceive as green. Instead some groups are motivated through concerns about their wellbeing and quality of life, health, fitness and/or lower financial outlay. There are also opportunities to link behaviours to people's interests, such as DIY, self-improvement, and national pride.

Some people suggest they would be affected by campaigns using shock and fear tactics, yet reviews of successful behaviour change projects indicate that the use of fear does not contribute to success. Others say they are concerned about their children's future and human survival. Experience shows this should not be relied on as a motivation for behaviour change although people are more open to change at life-stages, such as having a baby. Criticising people's home and family should, naturally, be avoided.

Cost is seen as a barrier for many. People are more worried about loss than gain so, for example, talking about the comparative saving over the lifetime of an energy saving lightbulb helps people address their focus on the initial higher cost. It is also more likely that it is people's perceptions of whether a product or behaviour is expensive or not, rather than the absolute price, that impact on their propensity to undertake a behaviour.

A strategy should address key demotivators for consumers – 'it's too late'; 'I can't make a difference'; and 'Government, other countries and business should act first', as well as considering how concerns about 'lifestyle-fit' can be addressed.

### **12. Recognise the role of social norms, identity, and status for moving towards greater adoption of pro-environmental behaviours.**

To deliver widespread changes in behaviour, we need to change the social norms for pro-environmental behaviours and increase the minimum level of environmental behaviour that is seen as 'socially acceptable'. Current research findings suggest considering the visibility of actions that we are encouraging people to do and how we link certain behaviours with people's self-identity can help this.

### **13. Use 'opinion leaders' and trusted intermediaries to reach your audience.**

Some people are better teachers and trendsetters than others. Engaging and fostering advocates and individual opinion leaders (such as mavens) may be more effective in bringing about system-wide change than targeting the behaviour of all individuals. Peer networks may not be *perceived* to influence people's behaviour in the overt and direct ways that pressure from children and partners is reported. Yet research indicates they have a greater role in influencing behaviour and are a trusted source of

information. They also demonstrate that ‘people like me’ are acting which addresses a key barrier for some people.

It is also effective to use trusted intermediaries and channels that consumers engage with in their day-to-day activities. This may mean building links with voluntary and community groups working in local areas, as well as working with retailers, membership clubs and societies, and business. It can involve working collaboratively to tailor messages for specific groups, as well as the organisations building awareness of their own green actions to increase people’s understanding of what others are doing.

**14. Recognise the value in joining up environmental issues for people, as well as joining up organisations’ work and messages.**

Just as there is a value in pursuing a holistic approach to developing the intervention mix, there is a value in joining up environmental issues for people and looking at how different behaviours are linked through the way they live their life. Equally there are benefits in identifying where there are synergies across different policy areas, as well as thinking about the impacts and opportunities of interventions in one area for outcomes in another.

**15. Give feedback on progress made. Consider when we can ask people or organisations to make commitments to being more pro-environmental.**

Being asked to make a commitment builds on the value of helping people to see themselves as ‘green people’ and their own concerns about being seen to be consistent. For some people, when they initially agree to a small action it helps them see themselves as a ‘green person’. They are then more open to considering a larger request than they would have originally agreed to. Such ‘pledges’ are more valuable if they are made publicly and to a named person that the individual believe it means something too. For example, pledges made at point of sale to dispose of paint in an environmentally friendly way. Encouraging organisations to also make commitments helps demonstrate to individuals that they are not acting alone.

Once people are engaged in pro-environmental behaviours, providing them with feedback is critical. Feedback can enable people to discuss outcomes with others, and it offers the possibility of building an individual’s sense of agency (if it can show that their small individual actions have contributed to a greater pro-environmental benefit).

## **Developing a pro-environmental segmentation model**

### **Objective**

The objective was to develop a segmentation model to help Defra understand and investigate the links between people's environmental attitudes, values, current behaviours and motivations and barriers.

### **Applications of the model**

Together with wider evidence this model will be used to assess which groups of people might be more willing and able to do certain behaviours; which are most opposed to certain behaviours; and the motivations and barriers for uptake.

Such an understanding has informed proposals within this behavioural framework, such as which behaviours have crosscutting or segment specific potential and guidance on types of interventions that may be more or less effective for specific segments.

Going forward, the model will be used to help develop more targeted approaches to policy and marketing communications, particularly in relation to the identified priority projects, as well as informing recruitment and tracking for future research projects.

### **An extensive three stage research process**

The scoping report for this Environmental Behaviour Framework outlined the three stage development process (1. Desk; 2. Qualitative; 3. Quantitative research). It also provided an overview of the first two stages. The desk research phase highlighted that there are very few cross-behavioural models and identified a gap for a model that could have applicability across many areas of environmental behaviour.

The qualitative research phase made an initial exploration of the links between people's wider values, their attitudes to environmental issues, current behaviours and an assessment of other behaviours they would be most likely to adopt alongside motivations and barriers for these. The findings from this research informed the brief for the quantitative research and the questions included in the survey, as well as providing a hypothesis that could be tested against the final model.

The quantitative stage of research used 44 attitudinal variables as the basis for the segmentation model and checked there was sufficient variation in other variables to make this a model with a practical application, such as some key behavioural variables and demographics. The most viable model was found to have 7 segments, with each sharing a distinct set of attitudes and beliefs towards the environment.

### **Attitudinal versus behavioural variables**

The evidence base informed Defra's choice of attitudinal variables as the basis for this model, rather than behavioural variables or a mix of both. This includes earlier phases of research and engagement with experts in the field to understand how existing models worked (e.g. 'YoungRubicon type'; models used by delivery bodies; environmental and social researchers), and how others were developing segmentation models in other policy fields (such as the Department of Health), together with an assessment of levels of interest in using such a model within and outside Defra.

Evidence suggests there is not a direct causal link between attitudes and behaviours. For many people changing their attitudes can be a valid part of a journey towards a specific behaviour change. For others, the behaviour can be changed without the expected attitude being in place and, indeed, sometimes this itself can lead to attitudinal change. The attitude-action gap is established in behaviour change research, yet an understanding of people's wider attitudes and beliefs provides a valuable context for linkage with their motivations and barriers, as well as current behaviours. We concluded a behavioural model would produce a fluid model driven by uptake, or dropping, of behaviours. Such a model could also be influenced by circumstances (e.g. tenure, finances) that would make it difficult to identify the ways that Defra could encourage further pro-environmental behaviour. This would make it less pertinent to Defra's needs.

Similarly a model that combined behavioural and attitudinal variables would not help us to understand the link between particular attitudes and behaviours. It would merge two distinct types of variables and it would no longer be clear where attitudes or behaviours were the key driver for specific behaviours, or where other circumstances had led to the adoption of a behaviour. It is a 'cleaner' approach to define segments based on responses to the attitudinal variables and then bring in the other variables to build the profiles, so that they cover current and potential behaviours as well as motivations and barriers.

### **Reproduction of the segmentation model in further research**

There are 44 input variables used in the cluster analysis that define the 7 segments. It is evident that a set of less than 44 variables is needed for the segmentation model to be used as a way of analysing future research (whether this is reproduction in quantitative surveys or for recruitment to qualitative research).

A factor analysis on this set of variables did not identify a reduced set that led to the same results. While 29 factors explained 80% of the variance (this being the accepted minimum amount of variance to explain), the matching between the results of the full cluster analysis and the reduced cluster analysis was inadequate. This was not surprising given the breadth and complexity of the subject area and the range of attitudes, motivations and barriers included in the analysis.



However statisticians did identify a smaller set of variables that provided the best solution for overall reproduction of the Defra segmentation model when combined with an algorithm. This set of 17 variables can be used in quantitative research to deepen and broaden understanding of the segment profiles. This analysis also identified which variables are the most effective predictors of individual segment membership, which informed the recruitment questionnaire for qualitative research working with the segments.

### **Fusing the data with other databases**

It is possible to fuse the data in the segmentation model with other databases. By including a specific set of questions ('hooks') in the questionnaire, the data can be fused with the Target Group Index (TGI) survey data. This survey collects information on many different aspects of its respondents. It covers product and brand use, leisure activities, their use of services, their media exposure and preferences, their attitudes and motivations and of course demographics. The fusion extends the segment profiles into other areas of people's lives. It develops Defra's understanding of where attitudes towards media, consumption of media, purchasing of brands, and lifestyle activities are similar and distinct for segments. This informs the overall approach for marketing communications activity; the choice of channels used in media campaigns (e.g. the role of radio versus internet); specific title/programme media buying; and the partnerships that will enable Defra to effectively reach specific groups.

### **Next steps**

The research programme for 2008/9 includes a number of projects that will relate their methodology to some or all of the segments. This will enable Defra to build on the existing profile information for each segment, as well as provide a way of linking findings from different projects. One project aims to further investigate the motivations of specific segments, which will be of particular benefit for the development of engaging marketing communications activity. Current plans are to run a large-scale quantitative survey to review the overall segmentation model in 2010. Defra will also be working with organisations who are interested in assessing how the segmentation model relates to their existing consumer research and/or segmentation, and developing guidance for those organisations that would like to use the segmentation model to inform the work that they do.



## NEWS RELEASE

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### STATISTICAL RELEASE

14 August 2007

# 2007 Survey of Public Attitudes and Behaviours Toward the Environment

Headline results from the *2007 Survey of Public Attitudes and Behaviours* toward the environment are released today. They give a representative picture of what people in England think, and how they behave, across a range of issues relevant to the environment, including transport and waste recycling.

Of the issues people think government should be dealing with, the environment was the fourth most commonly mentioned behind crime, health and education.

About a quarter of people agreed with statements such as "It takes too much effort to do things that are environmentally friendly", and "I don't believe my behaviour and everyday lifestyle contribute to climate change". However, about half disagreed.

Three quarters of people believe that if most people in the UK recycled more, cut down their car use or flew less, it would have a major or medium impact on the UK's contribution to climate change. However, although 60 per cent of people believe quite a lot of people are willing to recycle more, less than a fifth think a lot of people in the UK are willing to use a car less, or fly less.

Over a half of people report that they never leave the TV on standby overnight, their mobile phone chargers plugged in nor lights on in rooms when not in them. However, approximately a fifth say they always leave the TV on standby overnight, and a similar proportion that they always leave the tap running when brushing their teeth.

The proportion of people recycling paper, glass and plastic has almost doubled since 2001. In 2007 approximately three quarters of people said they recycled these materials, mainly via regular doorstep collection.

## Introduction

The results presented here follow from previous Environmental surveys run by Defra and its predecessors in 1986, 1989, 1993, 1996-7 and 2001. Where questions are comparable, time series are shown from the three most recent of these. The results for the 2007 survey were produced from data collected from a representative sample of approximately 3,600 individuals in England during spring 2007. The data were collected on behalf of Defra by the British Market Research Bureau (BMRB) during computer assisted interviews lasting on average 51 minutes. Some selected results appear here; a full report will be released in September 2007.

The survey itself was split into several sections. The results will be presented using the same structure as follows:

Attitudes and Knowledge in Relation to the Environment  
Transport  
Energy and Water Efficiency  
Recycling  
Eco-friendly Purchasing

Results on Biodiversity and Animal Welfare are also presented – the questions for these sections appeared on an additional omnibus survey, consisting of a representative sample of approximately 1,700 individuals.

A National Statistics release was issued on 27th July 2007 covering some selected results of questions on life satisfaction from this survey. Further results are included in this release.

Where applicable, each section follows the following format:

Attitudes  
Behaviours  
Barriers

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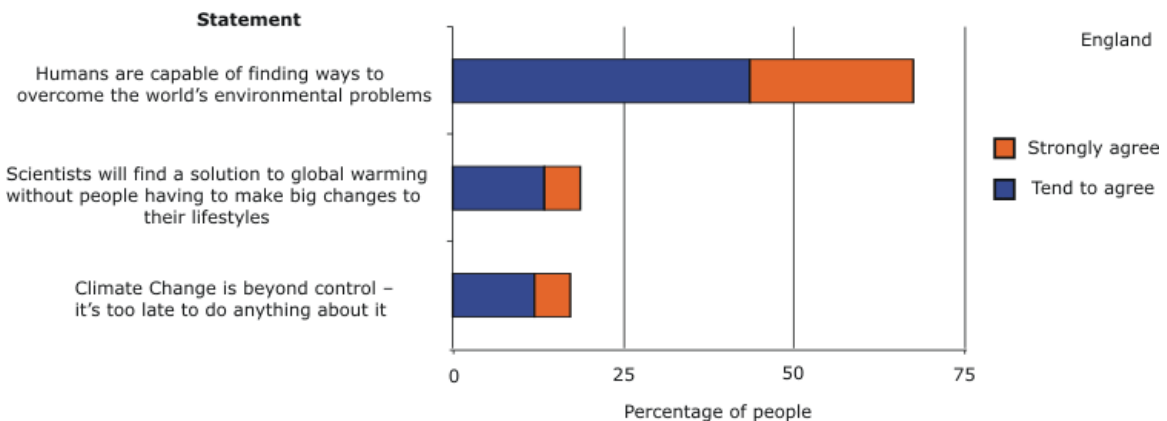
## 1. Attitudes and Knowledge in Relation to the Environment

The survey included a section that investigated attitudes toward and knowledge about specific aspects of the environment and, in particular, climate change.

### 1.1 Attitudes

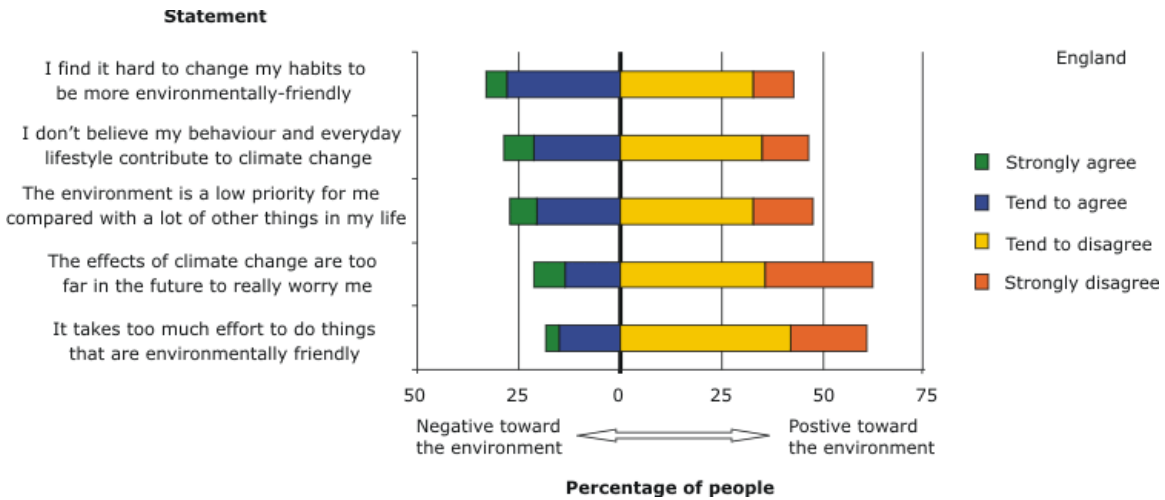
All attitudinal assessments took the form of a statement about a specific issue or belief. The individual indicated whether they strongly agreed, tended to agree, neither agreed nor disagreed, tended to disagree or strongly disagreed with these statements. Questions of this format appeared in all sections of the survey and results for attitudes toward particular issues such as transport and recycling can be found in those sections.

#### *Attitudes toward the environment and climate change, 2007*



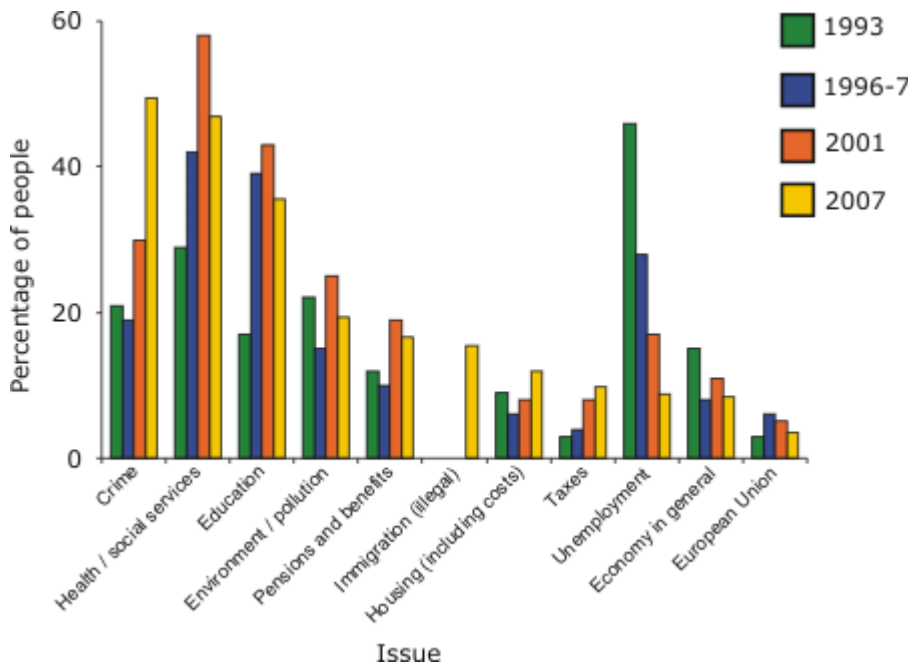
When asked about their attitudes toward the environment, 67 per cent of people strongly agreed or tended to agree that “humans are capable of finding ways to overcome the world’s environmental problems”. However, only 19 per cent strongly agreed or tended to agree that “Scientists will find a solution to global warming without people having to make big changes to their lifestyles”. A similar proportion, 17 per cent, strongly agreed or tended to agree that “Climate change is beyond control – it’s too late to do anything about it”.

## Attitudes toward the environment and climate change, 2007



Approximately a quarter of people strongly agreed or tended to agree with range of non-environmentally friendly statements such as, “I don’t believe my behaviour and everyday lifestyle contribute to climate change”, or, “The environment is a low priority for me compared with a lot of other things in my life”. Eighteen per cent agreed that “It takes too much effort to do things that are environmentally friendly”.

## Issues that the Government should be dealing with, 1993-2007

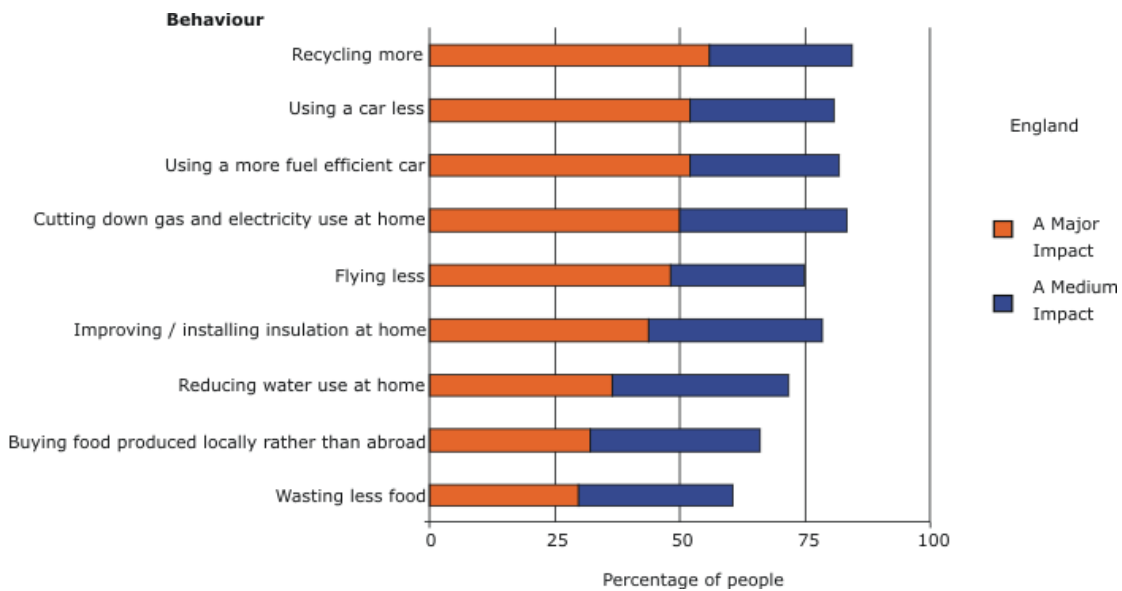


When asked without prompting what are the most important issues Government should be dealing with, the greatest proportion of people, 49 per cent, said crime. 47 per cent mentioned health or social services, 36 per cent education and 19 per cent the environment. These were also the top 4 answers in 2001, although

the proportions of people mentioning health, education or the environment have fallen from 58 per cent, 43 per cent and 25 per cent respectively, while the proportion of people mentioning crime has increased from 30 per cent. Individuals could mention as many issues as they wished, hence percentages will sum to greater than 100.

In 1993, 46 per cent of people mentioned unemployment but only 9 per cent did so in 2007. In 2007 16 per cent mentioned Immigration (with most highlighting illegal immigration and asylum seekers), an issue not mentioned by a significant proportion in previous years.

***Beliefs about the impact of behaviours on the UK’s contribution to climate change if most people in UK were prepared to do them, 2007***

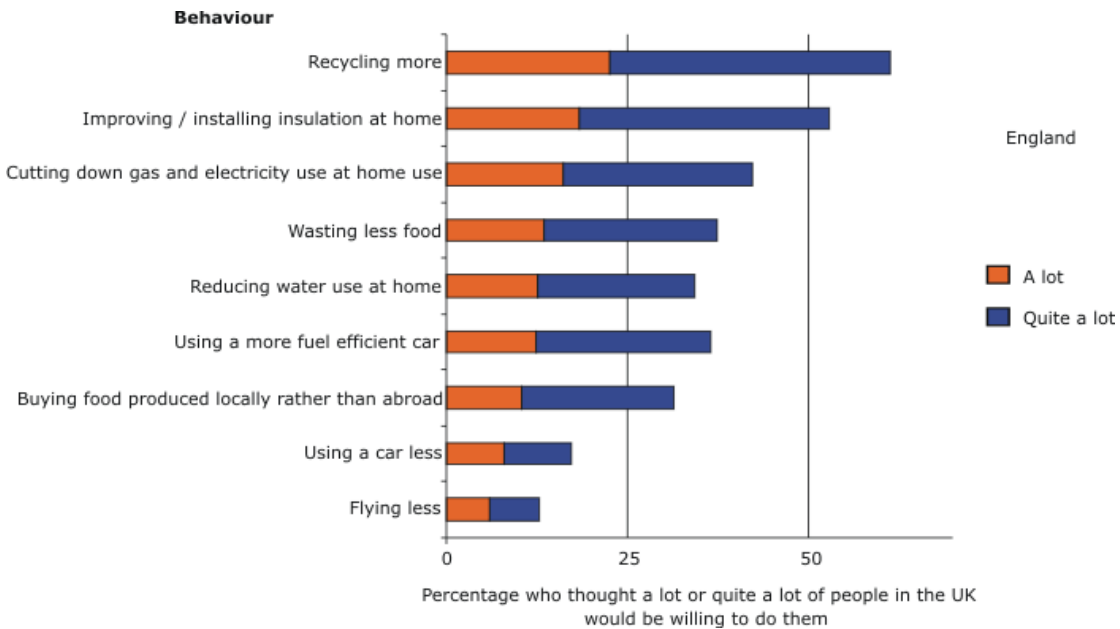


Over 50 per cent of people believed that “recycling more”, “using a car less”, “using a more fuel efficient car” and/or “cutting down on gas and electricity use in the home” would have a major impact on the UK’s contribution to climate change if most people in UK were prepared to do them. Over 75 per cent thought these behaviours as well as “flying less” and “installing installation” would have a medium or major impact on the UK’s contribution to climate change.

The behaviours for which the smallest proportion thought there would be a major impact were “buying food produced locally rather than abroad”, and “wasting less food”, with 32 per cent and 30 per cent of people thinking these would have a major impact respectively.

The behaviours for which the greatest proportion of people thought there would be no impact on the UK’s contribution to climate change were “buying food produced locally rather than abroad” and “flying less” for which 9 per cent and 8 per cent respectively said there would be no impact.

**Beliefs about the number of people in the UK who are willing to take up behaviours that could impact upon the UK's contribution to climate change, 2007**



Over 50 per cent thought that a lot or quite a lot of people would be willing to “recycle more” and/or “install / improve insulation at home”. This compares with 13 per cent who thought a lot or quite a lot of people would be willing to “fly less”, and 17 per cent who thought a lot or quite a lot would be willing to “use a car less”.

The proportion of people who say they themselves carry out behaviours such as recycling or installing insulation, as well as the frequency of car use and air travel will be covered in later sections.

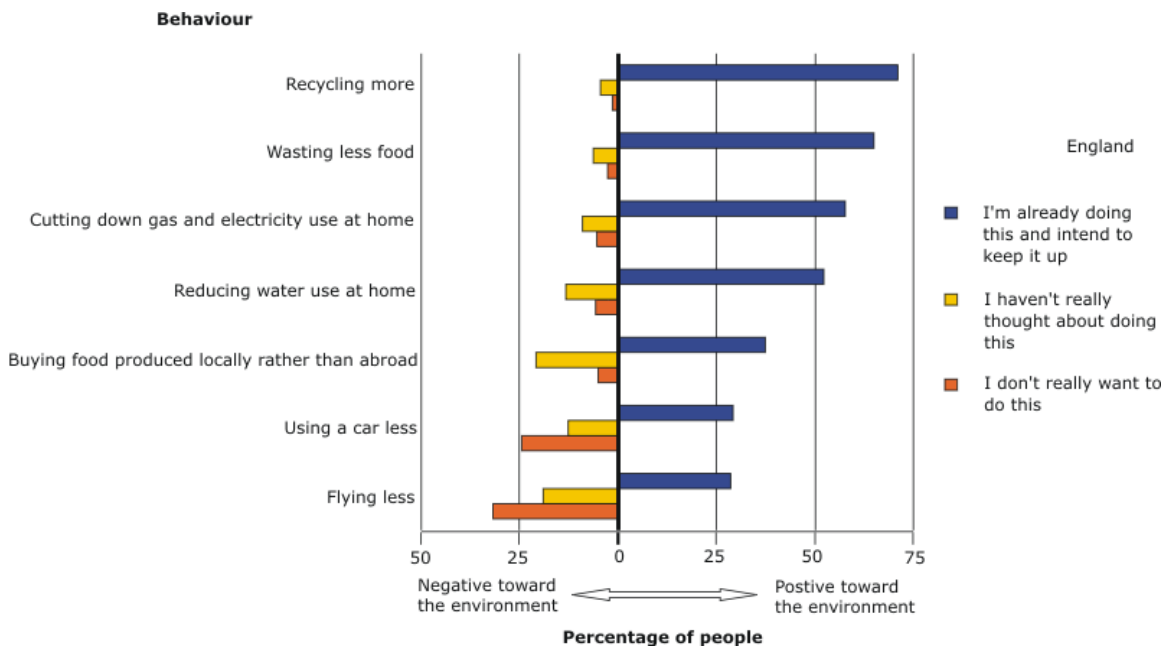
**Comparing beliefs about the impact of behaviours with beliefs about the number of people willing to do them**

When the results on people’s beliefs about the impact of different behaviours on climate change are compared with beliefs about the number of people willing to do them, “recycling more” appears as the top answer in both questions. However, although people also believe that if most people “used a car less” or “flew less”, there would be a major impact on the UK’s contribution to climate change, few thought many people would be willing to do them.



## 1.2 Behaviours

### Proportion of people engaging in environmentally friendly behaviours, 2007



When asked whether they are doing some of the environmentally friendly behaviours considered in the previous section, the greatest proportion of people, 71 per cent, said they were “recycling more rather than throwing things away” and intended to carry on doing so. More than half said they were “wasting less food”, were “cutting down on gas and electricity in the home”, and/or were “cutting down on water use in the home”.

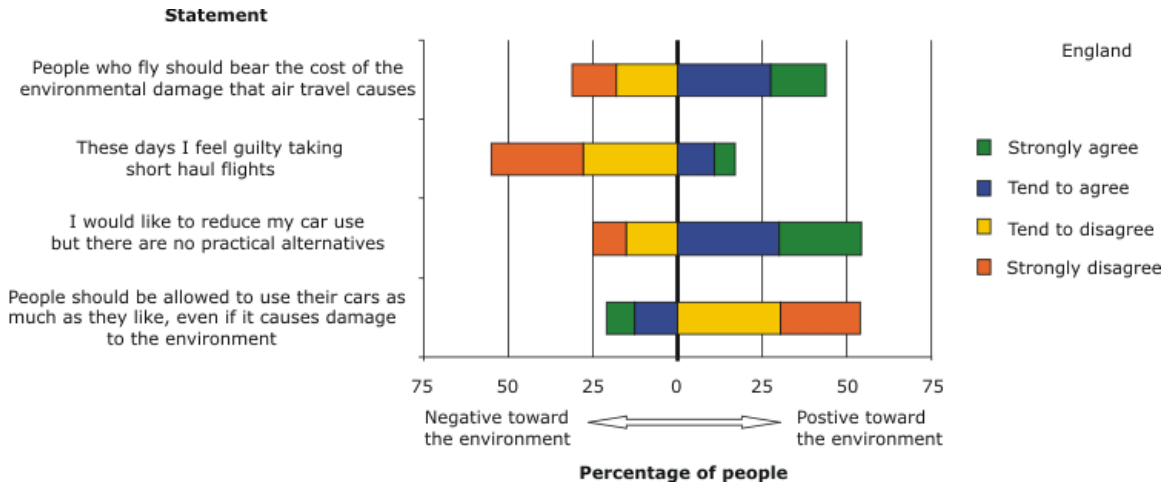
In comparison, 29 per cent of people said they were already making an effort to “use their car less” and/or “fly less”. 24 per cent and 32 per cent respectively said they “don’t really want to” “use a car less” and/or “fly less”.

Twenty-one per cent said that they “haven’t really thought about” “buying food produced locally rather than abroad”, 19 per cent “flying less” and 13 per cent “using a car less”.

## 2. Transport

### 2.1 Attitudes

#### *Attitudes toward flying and car use, 2007*

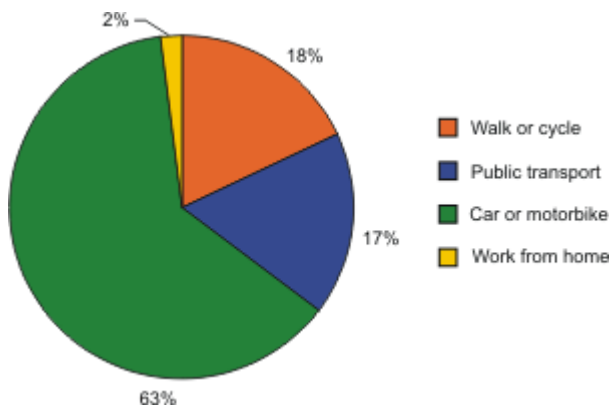


When asked for their attitudes about flying, 44 per cent strongly agreed or tended to agree that “people who fly should bear the cost of the environmental damage that air travel causes”. This was a greater proportion than strongly disagreed or tended to disagree – 31 per cent. Fewer people, 17 per cent, strongly agreed or tended to agree that they “felt guilty about taking short haul flights these days”. Over half strongly disagreed or tended to disagree with this statement.

When asked for their attitudes about car use, 54 per cent strongly disagreed or tended to disagree that “people should be allowed to use their cars as much as they like, even if it causes damage to the environment”. Eight per cent strongly agreed with this statement. Over half strongly agreed or tended to agree that they “would like to reduce their car use but find that there are no practical alternatives”.

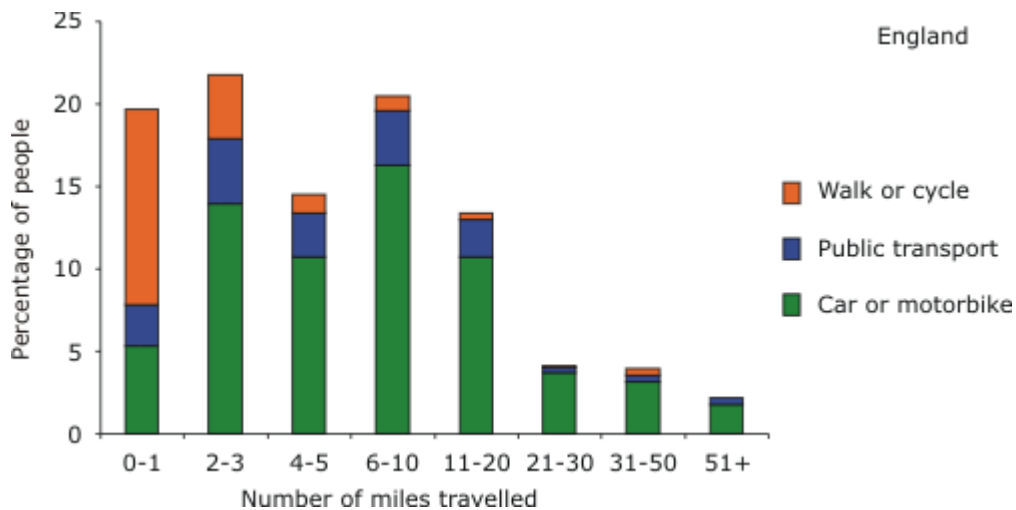
## 2.2 Behaviours

### Method of travel to work / study, 2007



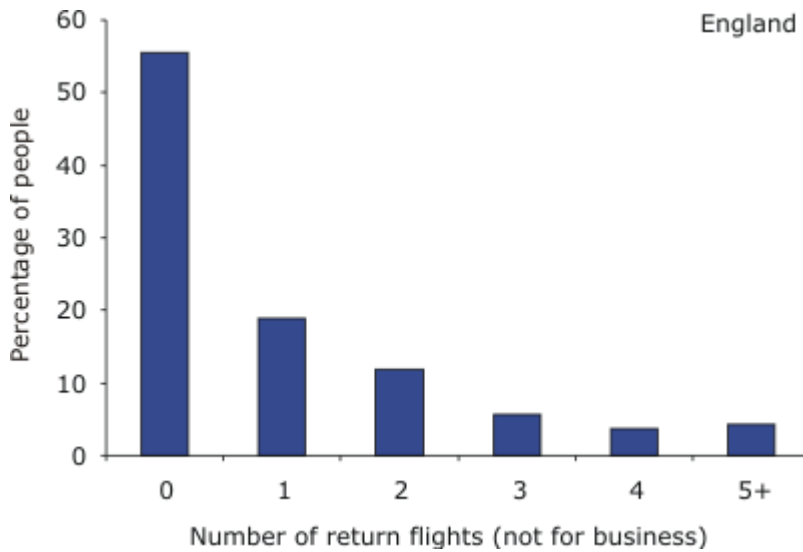
Of those who work or who are in full time education, 63 per cent usually use a car or motorbike to get there. 18 per cent walk or cycle, and a further 17 per cent use public transport. Two per cent work from home.

### Method of travel to work / study by distance travelled, 2007



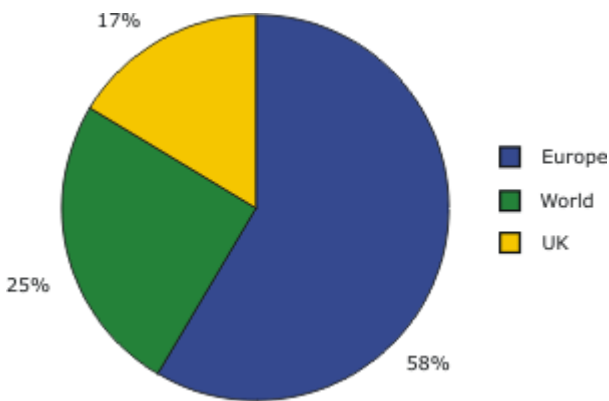
For journeys of 3 miles or less, 38 per cent walk or cycle, but for journeys of 4 miles or more, only 5 per cent walk or cycle. Fifty-nine per cent of people are at least 4 miles from where they work or study.

**Proportion of people taking non-business return flights in the last year, 2007**



When asked how many non-business return flights people had taken in the last year, over half said that they had not flown at all. 19 per cent had taken one return flight, and a further 12 per cent had taken two.

**Destination of people taking non-business return flights in the last year, 2007**



Of the total number of non-business return flights taken, 58 per cent were trips within Europe (except the UK), 25 per cent were outside Europe and 17 per cent were within the UK.

On average, for all people, there were 1.1 non-business return flights per person. However, although people who took 5 or more flights in the last year only made up 4 per cent of population, they took a third of all return flights between them. As might be expected, a greater proportion of those who took more flights earned more - those with an annual household income of £40,000 or more made up 40 per cent of the people who took 3 or more return flights, but only 11 per cent of the people who did not fly at all.

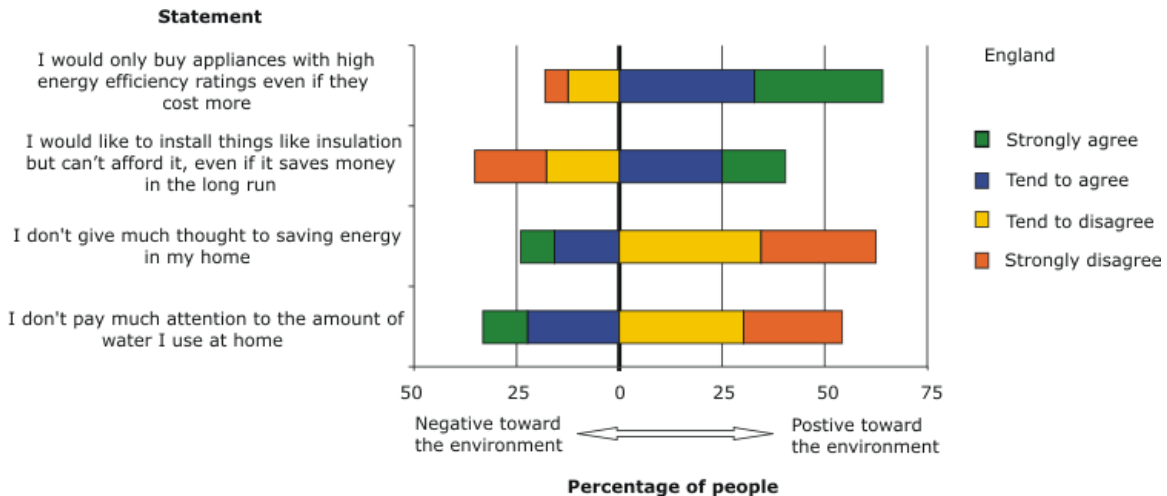
### **2.3 Barriers**

People who took a domestic flights were prompted with reasons why they decided to fly rather than use another form of transport. The greatest proportion, 58 per cent, said that it “was quicker”. Other answers included that it “was cheaper” and that is “was easier” – given by 28 and 27 per cent respectively. Only 7 per cent of people said that there was no alternative.

### 3. Energy and water efficiency

#### 3.1 Attitudes

##### *Attitudes toward energy and water efficiency, 2007*

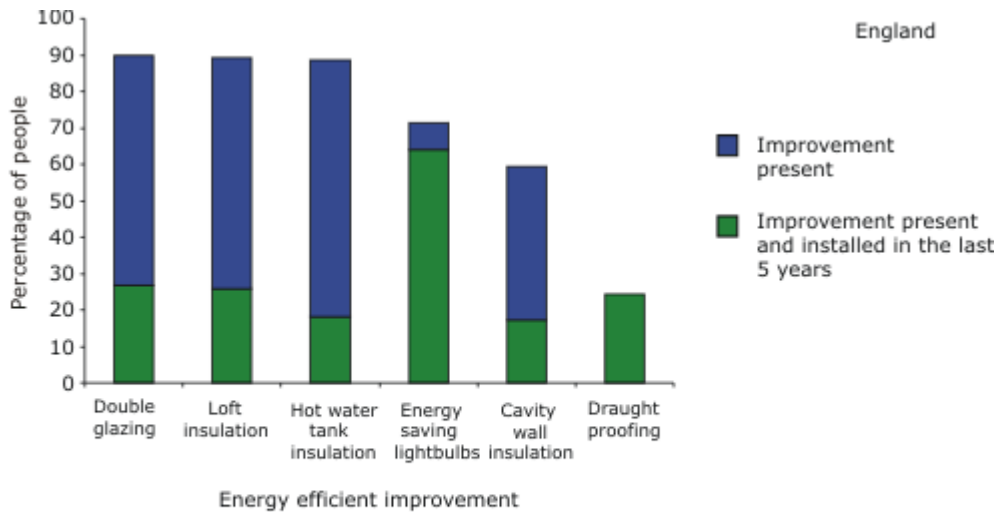


When asked for their attitudes about energy efficiency, 24 per cent strongly agreed or tended to agree that they “don’t give much thought to saving energy in their home”. Far more strongly disagreed or tended to disagree – 63 per cent. Similar proportions agreed and disagreed with the statement, “I would like to install things like insulation but can’t afford it, even if it saves money in the long run” – 41 per cent and 35 per cent respectively. Two thirds strongly agreed or tended to agree that they “would only buy appliances with high energy efficiency ratings, even if they cost more”.

When asked for their beliefs about water use, 33 per cent strongly agreed or tended to agree that they “don’t pay much attention to the amount of water they use at home”. More than half disagreed.

### 3.2 Behaviours

#### **Proportion of people with energy saving improvements in their home a) at all, b) installed in the last 5 years, 2007**



Notes: The proportions for each improvement shown use the number of people who could possibly have those improvements as a base. For example, the proportion of people with loft insulation shows only the proportion of those with a loft who have loft insulation. Only data for those who installed draught proofing in the last 5 years are available and the base for this improvement are those people with no double glazing (10 per cent of the whole population).

Of the energy efficient improvements investigated, 90 per cent of people said that their home had double glazing, and 89 per cent loft insulation and hot water tank insulation. The smallest proportion said that their home had cavity wall insulation or draught proofing, with 59 per cent and 24 per cent respectively.

For most improvements, about a third of people had installed them in the last 5 years. The main exception being that three quarters of those with energy saving light bulbs installed them in the last 5 years.

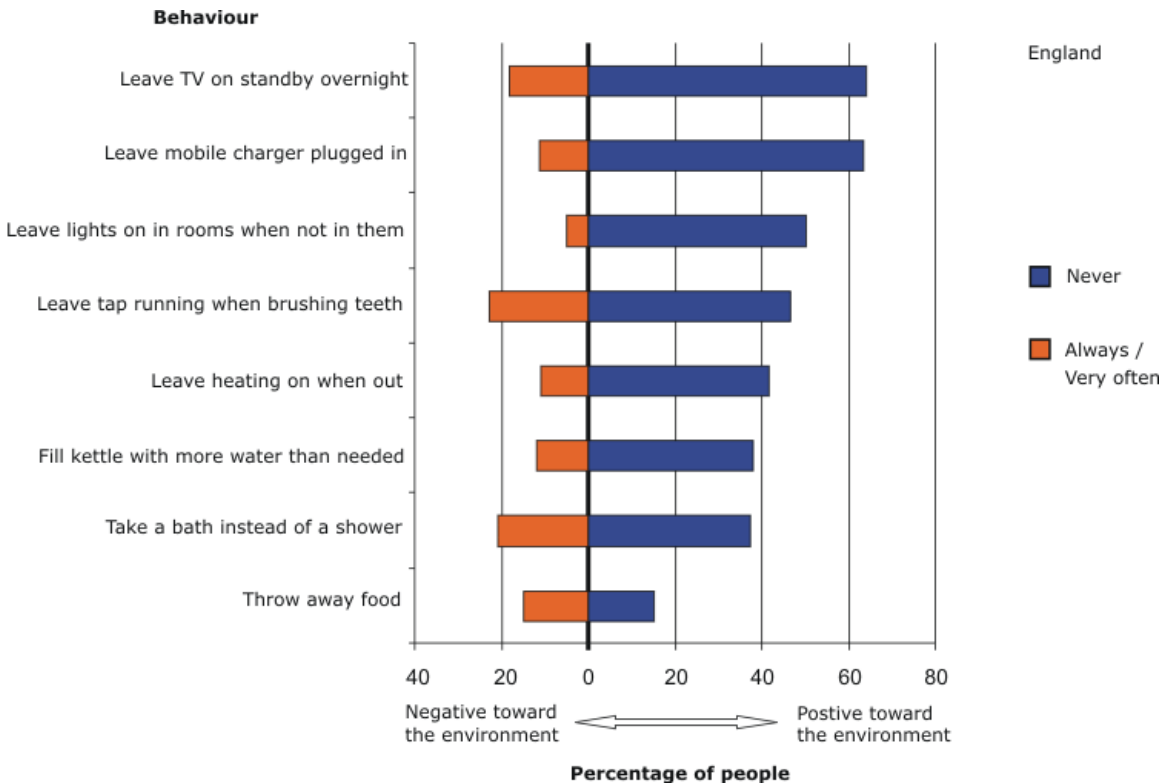
Contextual information from previous surveys:

#### **The proportion of people regularly using energy saving light bulbs, 1993-2007**

1993	16%
1996-7	24%
2001	31%
2007*	72%

\*These data suggest use of energy efficient light bulbs has continued to increase since 2001. In 2007, 72 per cent had at least one energy saving light bulb, with 35 per cent having 5 or more energy saving light bulbs.

**Proportion of people performing wasteful behaviours, 2007**

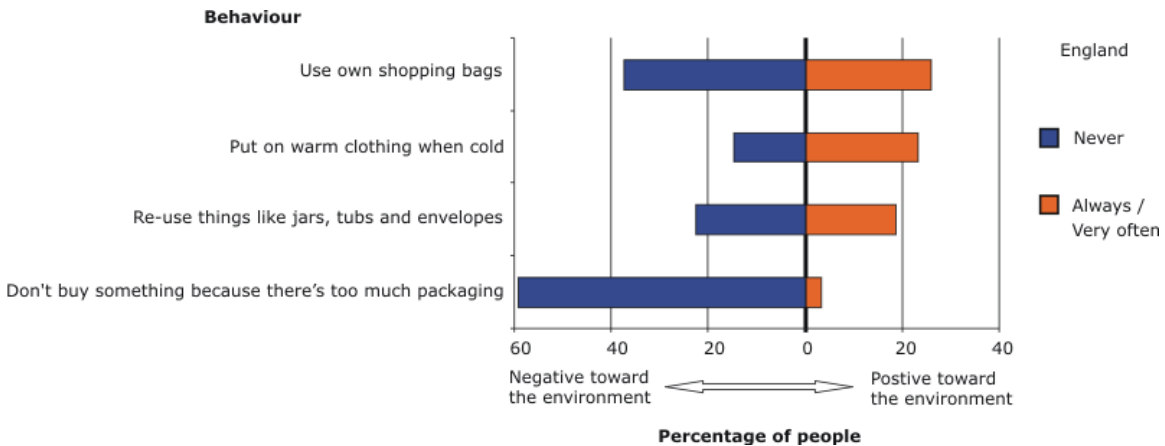


When presented with a list of behaviours that could be seen as potentially wasteful, 64 per cent said that they never “leave their TV on standby overnight”. A similar proportion never “leave their mobile charger plugged in” and half never “leave lights on in rooms when not in them”. The smallest proportion, 15 per cent, said that “never throw away food”.

When people who always or often do these behaviours are considered, the greatest proportion, 23 per cent, “leave the tap running when brushing teeth”. Other wasteful behaviours that large proportions always or often do include “taking a bath instead of a shower” and “leaving the TV on standby overnight”, with 21 per cent and 18 per cent respectively.



**Proportion of people performing environmentally friendly behaviours, 2007**



When presented with a list of actions that could be seen as environmentally friendly, 26 per cent said that they always or often “use their own shopping bags”. However, a greater proportion, 37 per cent, said that they never do this. The smallest proportion, 3 per cent, said that they always or often “do not buy something because it has too much packaging”. Fifty-nine per cent said that they never do this.

Contextual information from previous surveys:

**Proportion of people cutting down on resource use, 1993-2001**

Year	Regularly cutting down the amount of gas / electricity the household uses	Regularly cutting down water use
1993	33	32
1996-7	25	29
2001	40	29

The proportion of people never doing things like leaving the TV on standby or lights on in rooms, and minimising wasting water use by never taking a bath instead of shower or leaving the tap running when brushing teeth in 2007 suggests an improvement on these figures.

**3.3 Barriers**

When prompted with a list of reasons why they do not have more energy saving light bulbs than at the moment, 27 per cent of people said that “they do not fit their light fittings”. Fourteen per cent said that they “are replacing old bulbs as they go”, and the same proportion said that “they had not yet got round to it”. Those who had moved into their current home recently were more likely to give this as a reason. Other reasons included that “they are not as bright as ordinary bulbs” and that “they are too expensive”, given by 11 per cent and 9 per cent respectively.

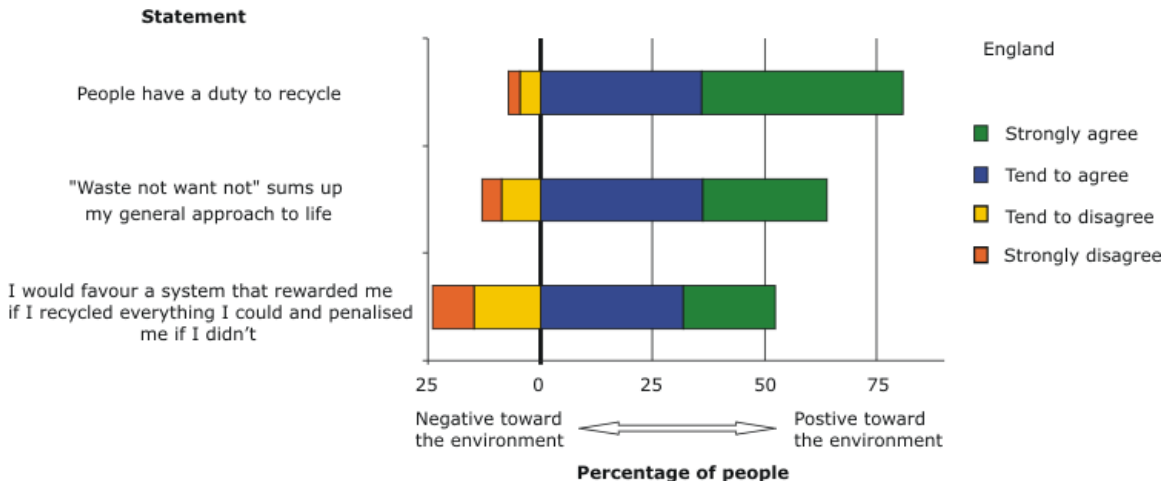
### **3.4 Water efficiency (water meters)**

All individuals without a water meter were asked whether they thought installation of a water meter would increase or decrease their water bill. Eight per cent thought it “would decrease a lot” and 22 per cent thought it “would decrease a bit”. More people thought it would increase – 21 per cent “a lot”, and 19 per cent “a bit”. The remainder said they thought it “would stay about the same”.

## 4. Recycling

### 4.1 Attitudes

#### Attitudes toward recycling, 2007

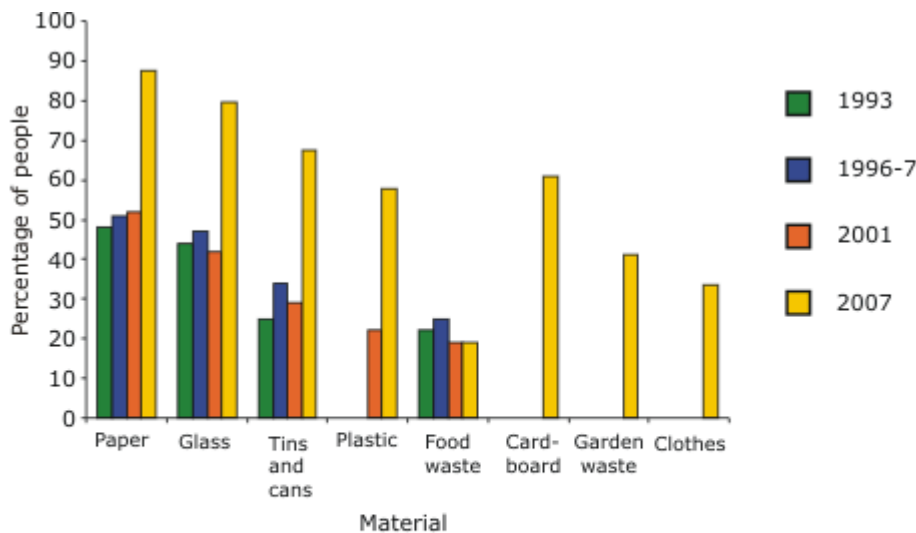


When asked for their attitudes about recycling, 81 per cent strongly agreed or tended to agree that “people have a duty to recycle”. Approximately two thirds strongly agreed or tended to agree that “Waste not want not” sums up their general approach to life”.

A smaller proportion, 52 per cent, strongly agreed or tended to agree that they “would favour a system that rewarded them if they recycled everything they could and penalised them if they didn’t”. However, this was more than double the 24 per cent who strongly disagreed or tended to disagree with this statement.

## 4.2 Behaviours

### *The proportion of people recycling different materials, 1993-2007*



Notes: In 1993, 1996-7 and 2001 the question asked whether they recycled that material "Regularly", "On a few occasions" or "Not at all". The percentages shown are for those who answered "Regularly" only. In 2007, the questions were "Do you normally put ..... (material) outside to be recycled?", with only "yes" or "no" as options (i.e. doorstep collection or composting), and "What things do you take to recycle?" (i.e. at recycling facilities nearby). People who answered yes to one or the other (or to both) have been defined as recycling that material for 2007.

The most regularly recycled material in 2007 was paper with 88 per cent normally recycling. Eighty per cent recycled glass, 68 per cent tins and cans, and 60 per cent cardboard. Over three quarters of these people were recycling by regular doorstep collections rather than taking material to recycling facilities nearby. Of the materials mentioned, fewest people recycled food waste and clothes with 19 per cent and 34 per cent recycling respectively.

The proportion of people recycling tins and cans has increased by 39 percentage points, plastic by 38 percentage points, glass by 38 percentage points, and paper by 36 percentage points since 2001.

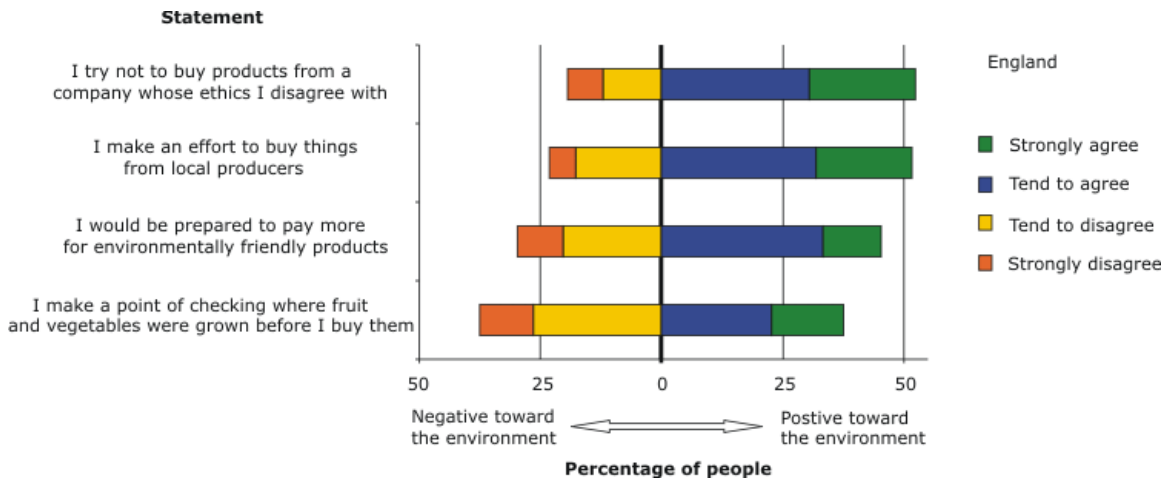
## 4.3 Barriers

When asked what may be stopping them recycling more than they do at the moment, 41 per cent of people said they "already recycle everything that they can". Of the remaining respondents, 32 per cent said that "there was no doorstep collection", 23 per cent that "there was a lack of facilities" and 17 per cent that they "had nowhere to store the material". A similar question in 2001 also found these 3 reasons to be among the most reported, given by 26, 20 and 21 people respectively when asked why they didn't recycle more regularly. In 2001, 24 per cent of people said that they "could not get to the facilities". This had reduced to 8 per cent by 2007.

## 5. Eco-friendly purchasing

### 5.1 Attitudes

#### Attitudes toward eco-friendly purchasing, 2007

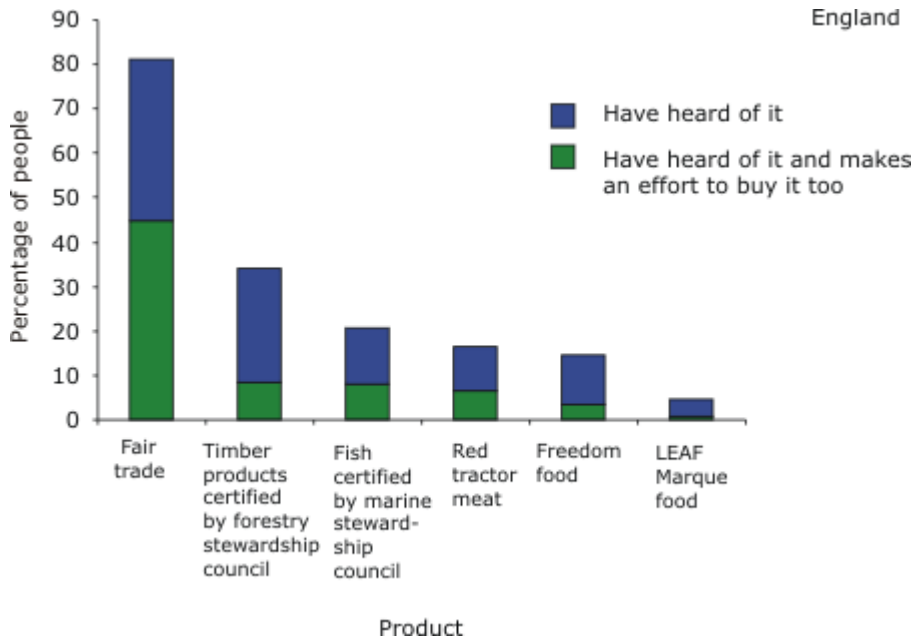


When asked for their attitudes about eco-friendly purchasing, 52 per cent strongly agreed or tended to agree that they “try not to buy products from a company whose ethics they disagree with”. Roughly the same proportion strongly agreed or tended to agree that they “make an effort to buy things from local producers”.

A smaller proportion, 45 per cent, strongly agreed or tended to agree that they “would be prepared to pay more for environmentally friendly products”. Over a quarter disagreed. 38 per cent agreed and 38 per cent disagreed with the statement, “I make a point of checking where fruit and vegetables were grown before I buy them”, although slightly more people *strongly* agreed than strongly disagreed.

## 5.2 Behaviours

### *Proportion of people who a) have heard of, b) make an effort to buy eco-friendly products, 2007*



Individuals were asked whether they had heard of a range of eco-friendly brands / products, and for those that had, whether they made an effort to buy those brands. 81 per cent had heard of Fair trade products and approximately half of those said they make an effort to buy to buy them. The next most well known product was timber certified by the Forestry Stewardship Council or timber from sustainable sources – heard of by 34 per cent of people. However, only a quarter of those said they made an effort to buy them.

## 5.3 Barriers

All individuals were asked what may be stopping them from making more environmentally friendly choices in the food and groceries they buy. Forty-seven per cent of people said that “they are too expensive”. Other answers included that “they are not available”, given by 12 per cent, and that “there is not enough labelling”, given by 9 per cent.

## 6. Biodiversity and animal welfare

Biodiversity and farm animal welfare questions were included on a shorter follow up survey. To help individuals, the following definitions were given before any questions were asked:

1. (Farm) animal welfare means things like:

How farmers look after and breed animals  
How farm animals are transported  
Conditions at markets and livestock sales  
Exports of live farm animals  
Conditions at slaughterhouses and abattoirs

2. Biodiversity is the variety of living things and the natural environments that support them. Loss of biodiversity means loss of species of living things through development, pollution or natural processes

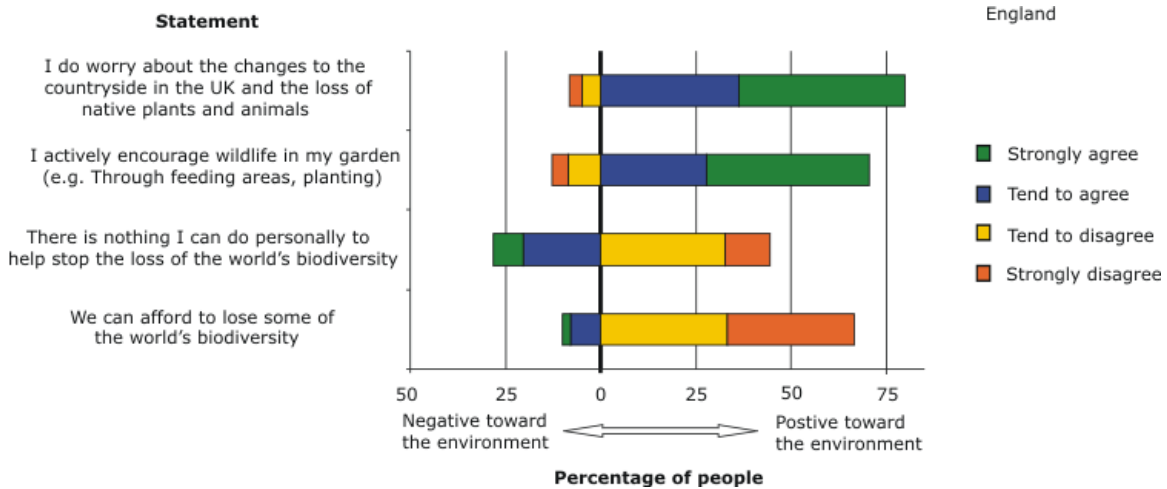
### 6.1 Attitudes

*The amount of thought given to animal welfare and biodiversity loss, 2007*

Thought given	Issue		
	Farm animal welfare	Loss of biodiversity in the UK	Loss of biodiversity in the world
A great deal	16%	6%	9%
A fair amount	24%	25%	26%
A little	37%	36%	34%
Have not really given this issue any thought before	22%	32%	30%

Between 30 and 40 per cent of people said that they had given a great deal or a fair amount of thought to farm animal welfare and loss of biodiversity before. However approximately a quarter of people had never given farm animal welfare any thought before, and around a third had not really given loss of biodiversity any thought before.

## Attitudes toward biodiversity, 2007



When asked for their attitudes about biodiversity, 71 per cent of those who own a garden strongly agreed or tended to agree that “they actively encourage wildlife in their garden”.

Just over a quarter of people strongly agreed or tended to agree that “there is nothing they can personally do to help stop the loss of the world’s biodiversity”. Ten per cent agreed that “we can afford to lose some of the world’s biodiversity”. A third of people strongly disagreed with this statement.

## Attitudes toward farm animal welfare, 2007

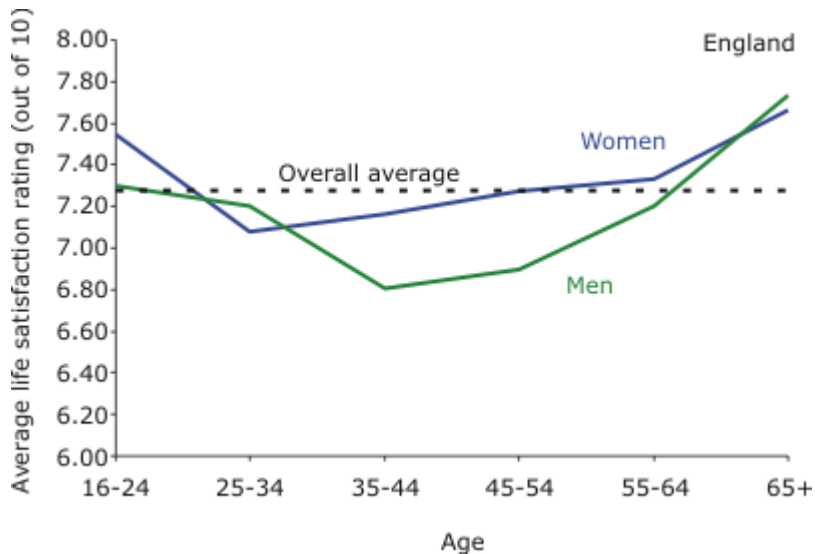
Thirty-seven per cent of people said that they were happy with all or most aspects of farm animal welfare in this country. Of the remainder, when prompted with a list of specific issues and asked which was their biggest concern, 30 per cent said “how animals are kept on the farm”, 28 per cent said “how they are transported”, and 19 per cent said “exporting of live farm animals”.



## 7. Wellbeing

On 27th July 2007, selected results from questions on wellbeing included in both the main survey and the follow-up survey were released by Defra. Further analysis is presented below.

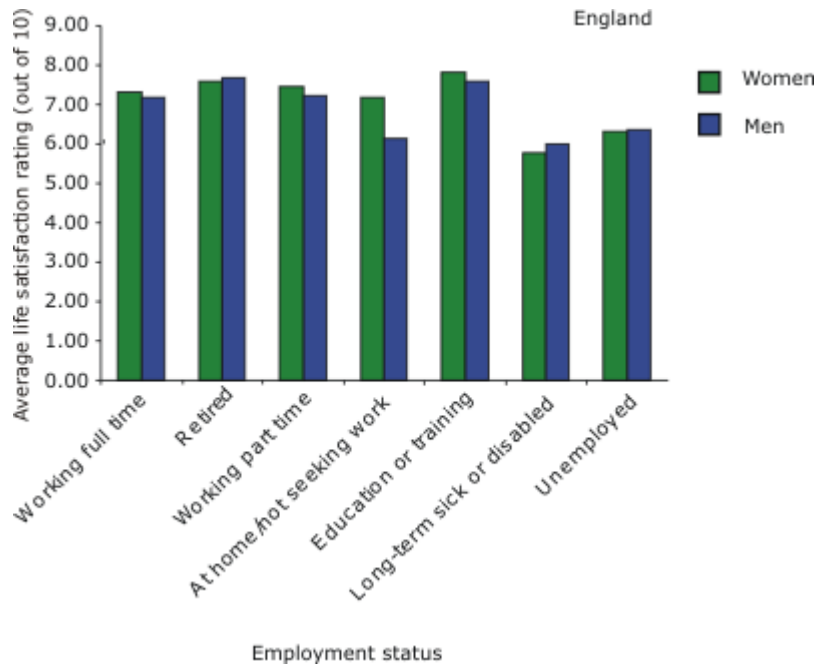
### *Average life satisfaction by gender and age, 2007*



The main wellbeing question on the survey asked individuals to rate their satisfaction with life nowadays on a scale from 0 – 10 (where 0 = extremely dissatisfied and 10 = extremely satisfied).

The average satisfaction with life rating was 7.3. This varied by age and gender. The most satisfied groups were those who were 65 and over, with men and women reporting average ratings of around 7.7. Satisfaction with life was lowest among middle aged men, with a lowest average rating of 6.8 for men aged 35-44.

### **Average life satisfaction by gender and employment status, 2007**

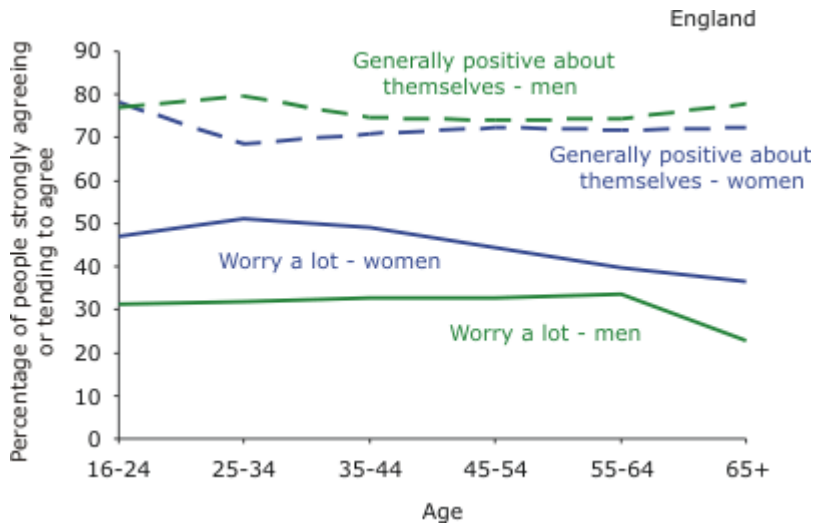


Average satisfaction with life rating varied with employment status and by gender. The group reporting the highest rating on average was those in full time education or training with an average rating of 7.7. The group reporting the lowest rating on average was those on long-term sick leave or disabled with an average rating 5.9.

Those who were unemployed had an average rating of 6.3 while those in retirement tended to be more satisfied with an average rating of 7.7.

Within groups, the biggest difference between men and women was for those staying at home / not seeking work. In this group the average rating for women was 7.2 but for men, only 6.1.

**Positivity and tendency to worry by age and gender, 2007**



When asked whether they generally feel positive about themselves, 74 per cent of people strongly agreed or tended to agree. There was little variation by age or gender.

When asked whether they worry a lot, 38 per cent of people strongly agreed or tended to agree. Women were more likely to agree, with 45 per cent of women strongly agreeing or tending to agree but only 30 per cent of men. By age, 65s and over were least likely to worry, with 37 per cent of women and 23 per cent of men in this age group strongly agreeing or tending agree.

## Notes to editors

### **1. National Statistics publication**

The publication is a Defra National Statistics publication, which reports the headline results from the 2007 survey of public attitudes and behaviours toward the environment. The survey was administered by the British Market Research Bureau (BMRB) and they will provide a full report to Defra which includes analysis of every question, in September/October 2007. Defra will quality assure this report and then make it publicly available, and anonymised data will also be placed in the UK Data Archive at that time. The publication and associated data will be also presented on the Defra statistics website.

### **2. Basic Quality Information**

**Relevance:** These results are relevant to Defra and Government policy on many areas including climate change. They provide data that will allow assessment of current levels of behaviour in different environmental subject areas, particularly transport, energy efficiency and recycling. The data also give an insight into people's attitudes, and are being used to cluster the population into segments that will facilitate better targeting of information and publicity.

**Accuracy:** These data were collected by the British Market Research Bureau (BMRB) on behalf of Defra. They were contracted to administer a 45 minute survey entitled "2007 survey of public attitudes and behaviours toward the environment" on a sample of 3,618. BMRB also administered 15 minutes of additional questions that did not fit on the main survey to a sample of 1,661 as part of an omnibus survey.

Both surveys involved face-to-face, computer-assisted (CAPI) interviews of adults (16+) in England, at home using the sample design detailed below.

**Sampling:** BMRB utilised 'random location' sampling. Primary sampling units (PSUs) for random location samples were selected with a probability proportionate to size, containing approximately 300 addresses. A total of 378 PSUs were selected for the survey, with 9-10 interviews achieved in each area. Research shows only minor divergence between the results from random samples and high quality quota samples such as used here. The results of the weighting analysis, (see below) show the sample taken by BMRB was representative.

**Weighting:** BMRB's statistical team carried out an analysis of the finished dataset to identify the best weighting variables and apply cell, rim or other form of calibration weighting as necessary. This checked whether there was need to bring the sample in line with the population profile on key variables. The weights should only be applied if they will demonstrably reduce bias (i.e. there should be a correlation between the demographic data and key survey data), and this was not applicable for these survey results – i.e. BMRB reported that there was no need to weight to correct for any disproportionate element in the sample design.

**Timeliness:** The fieldwork was completed by June 2007. Analysis and quality assurance were completed in the intervening period to ensure accuracy and accessibility of the results.

**Accessibility:** The data being released in this news release can be found on the statistics section of the Defra website.

**Comparability and coherence:** This survey has undergone a major overhaul since data was last collected in 2001 to improve and re-focus the questions to today's policy agenda. Where possible, time series have been shown. The survey itself can be found on the statistics section of the Defra website so that the wording of a particular question can be compared to questions used to collect similar data on other surveys. For example, the National Travel Survey administered by the Department for Transport includes questions on method / frequency of travel.

**National Statistics publication**

National Statistics are produced to high professional standards set out in the National Statistics Code of Practice. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

# A Synthesis Review of the Public Understanding Research Projects

A research report completed for the  
Department for Environment, Food and  
Rural Affairs by the Policy Studies  
Institute.

October, 2007



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Policy Studies Institute



## **Public Understanding Synthesis Report**

### **Final Report to the Department for Environment Food and Rural Affairs**

Suggested citation for this report:

Dresner, S., McGeevor, K, and Tomei, J. (2007) *Public Understanding Synthesis Report: A report to the Department for Environment, Food and Rural Affairs*. Policy Studies Institute. Defra, London.

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This research was commissioned and funded by Defra. The views expressed reflect the research findings and the authors' interpretation; they do not necessarily reflect Defra policy or opinions.

## Executive Summary

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1.1 This Synthesis Review draws together the research findings of five independent reports into the public understanding of sustainable behaviours. The five projects reviewed in this report are:

- Public Understanding of Sustainable Energy Consumption in the Home
- Public Understanding of Sustainable Finance and Investment
- Public Understanding of Sustainable Leisure and Tourism
- Public Understanding of Sustainable Consumption of Food
- Public Understanding of Sustainable Transport

1.2 The five qualitative research projects were commissioned as part of Defra's ongoing commitment to developing a Sustainable Consumption and Production (SCP) evidence base. SCP is about achieving economic growth while respecting environmental limits. Pro-environmental behaviour is emerging as a core theme of the SCP evidence base and is of significant interest to many policy programmes across Defra, both in terms of understanding current behaviour and how to influence the adoption of more sustainable behaviours in the future. The findings of all five of the projects reviewed here, and of this Synthesis Review itself, will feed directly into Defra's ongoing development of an Environmental Behaviours Framework.

### **Overall methods of the projects and the review**

1.3 The projects aimed to provide an in-depth analysis of the public's current expectations, aspirations, assumptions and understanding of pro-environmental behaviour. The projects explored these themes as well as the responses to specific behaviour goals in each of the key areas. Each project aimed to engage over 100 people through qualitative research and to incorporate a deliberative element; some of the projects also used a segmented approach to recruitment to explore differences across the population.

1.4 From the five project reports, initial headline findings were produced, which formed the basis of the Synthesis Review. These headline findings were used as the basis for discussion in a consultative workshop held with researchers from each of the project teams and Defra. Based on workshop discussions and further analysis of the



research reports, this Synthesis Review was produced.

## **Myths and assumptions**

1.5 A variety of assumptions and myths are prevalent in the public's understanding of pro-environmental behaviour. Participants across all projects, and across all segments, demonstrate a poor understanding of the relative impact of different behaviours on the environment. There is a belief that frequent, day-to-day behaviours have more of an impact on the environment than one-off event-driven behaviours, leading to the assumption that 'good' daily behaviour legitimises or offsets occasional 'bad' behaviour. Pro-environmental behaviour is frequently associated with one or more of the following:

- Sacrifice
- Higher cost
- Poorer quality

1.6 As a result, sustainable choices were not viewed favourably by the majority of participants.

## **Expectations of government, industry and consumers**

1.7 Across all projects, participants display high expectations of government and industry. There is widespread expectation that government should be taking the lead on environmental issues, in part due to the scale of intervention required. But despite this, evidence of a deep mistrust of government and scepticism about motives also emerge. Key findings related to expectations are:

- There is tacit support for choice editing, with participants thinking this is already taking place more than it actually is.
- Despite some suspicion surrounding the motives for environmental taxation and concern about the disproportionate impact such taxes may have on the poor, there was also a feeling that green taxes were appropriate, providing transparent hypothecation occurs.
- There is widespread belief that making sustainable choices needs to be made easier through the provision of lower cost of organic, seasonal and local food, and market intervention to remove unsustainable products and increase the availability of sustainable products.

- There is a recognised role for the Government as an educator and information provider, but at the same time there is mistrust about some messages emerging from government.
- 1.8 Expectations of business and industry varied across the projects. Industry is seen to have a key leadership role in facilitating change, tempered by scepticism about information that industry provides about some sustainable products.
- 1.9 It was recognised that individuals and consumers have some personal responsibility for changing their own behaviour, but numerous barriers were cited that prevent action.

### **Role of information**

- 1.10 Participants across all projects had little scientific knowledge about environmental issues, particularly climate change, and wanted clearer, more concise information to aid understanding. The source of such information emerged as vital in determining the extent to which people receive and, more importantly, trust it, while it was also clear that information needs to be carefully targeted according to both its audience and the behaviour that it addresses. Participants are more likely to rely on advice from others at the point of sale during one-off or occasional behaviours, but want to feel well informed enough to make educated decisions in the context of their daily lives. There was some evidence that people are more receptive to information when it is found to be surprising, though care must be taken to ensure communications are not alarmist. Across all projects, participants were confused by mixed messages about the impact of different behaviours, leading to several recommendations related to the need for more consistent messaging.

### **Motivators for, and barriers to, behaviour change**

- 1.11 A variety of complex, interacting motivators drive individuals to make sustainable choices and engage in pro-environmental behaviour. Across all projects, the factors that act as motivators for some individuals serve as barriers that prevent actions from others. Motivators vary across demographic groups and behavioural segments, and change over time. Overall, there emerged a general reluctance across all segments to make any changes that fundamentally impact on present lifestyles and standards of living.

## **Motivators**

- **Desire to save money:** An important motivator across all segments, but particularly for those less engaged with sustainability and those in lower socio-economic groups
- **Level of engagement with sustainability:** Those more concerned with the environment and sustainability are more willing to engage in pro-environmental behaviour and change behaviour.
- **Life stage:** For various reasons, events such as the arrival of children and retirement were cited as a motivator for pro-environmental behaviour change.
- **Quality:** Some sustainable options, such as sustainable food, are associated with higher quality and are therefore aspired to by some segments.
- **Provision of information:** There was evidence across the projects that the provision of information acted as a powerful motivator for change.
- **Image:** The more environmentally engaged segments had a positive image of environmentalism and aspired to pro-environmental behaviour.
- **Altruism:** Some segments actually made changes that involved personal sacrifice for the collective good, though this was rarely perceived as sacrificial behaviour.
- **Health:** An important motivator, in particular for food, was health, which could be an important double win to be highlighted across other sustainable behaviours.
- **Enjoyment and personal wellbeing:** There was evidence that the positive effects on wellbeing obtained from certain pro-environmental choices acted as a motivator, especially in leisure and tourism, and transport.

## **Barriers**

- **Cost:** The cost, or perceived cost, of pro-environmental behaviours emerged as the most frequently cited barrier to adoption.
- **Time and convenience:** Sustainable choices were frequently perceived to be time consuming and less convenient.
- **Quality:** There is a widespread perception that the quality of sustainable products is in some way inferior to non-sustainable alternatives<sup>1</sup>.
- **Entitlement:** Many participants felt a sense of entitlement towards their present lifestyles. Choice, variety and personal freedom are seen as consumer rights, that should be free from intervention from government and industry.

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<sup>1</sup> The exception to this being sustainable food choices which are considered, in some cases, healthier and cheaper.

- **Variety and choice:** Although some participants desire variety and choice, they are resented by others if excessive, for example supermarkets were blamed for offering too much choice,.
- **Habit and inertia:** Day-to-day behaviours that are habitual are difficult to change because they tend to be followed automatically. Related to this is the problem of general inertia, which acts as a barrier to making one-off changes.
- **Awareness, knowledge and information:** Participants were frequently unaware of the environmental impact of their behaviour and unaware of the best way to reduce their impacts. There was a lack of knowledge about the impacts of products. Related to both of these, a lack of information and problems with the type of information provided were also cited as barriers.
- **Access:** A lack of access to certain products and services emerged as a barrier across the projects. Participants can only make pro-environmental choices if such choices are available.
- **Intangibility:** Due to the large-scale and long-term threat of many environmental problems, for example climate change, many participants found it difficult to grasp how their actions might have a wider global impact.
- **Disempowerment:** Concern was voiced by participants across the projects that individual action was futile and would have little impact on global environmental problems.
- **Mistrust:** Many participants were mistrustful of information they were given, particularly when provided by government and industry. There is also scepticism about the motivations of both.
- **Image:** For some segments, environmentalism had a negative image, either associated with being eccentric and 'hippyish', or with the affluent who can afford the 'luxury' of caring about the environment.

### The behaviour goals and segments

1.12 The following findings relate specifically to the different behaviour goals investigated by the projects and the responses relating to the early Defra segmentation model<sup>2</sup>. Although many of these are project-specific, their inclusion here implies they have wider implications for all pro-environmental behaviours.

- **Greens** emerge as the only segment which has, at least some, members prepared to accept some personal costs for the sake of the environment alone,

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<sup>2</sup> The Defra Segmentation Model has undergone significant development since this research was originally carried out. The updated version will be available through the Defra website from December 2007.

whether these be financial, time or convenience. However, even within this group, there were limits to what was considered acceptable; many were not prepared, for example, to pay extra for green energy tariffs.

- **Consumers with a Conscience** are the only segment, apart from Greens, that are prepared to spend more on greener products. To do this, they need to be persuaded that there is some other associated benefit, such as convenience, health, better quality or lower running costs, and that the choice will not involve a sacrifice to their current lifestyle.
- **Currently Constrained** also consider environmental issues, but lack of money is a concern for this segment. For this reason, adopting behaviours that are more expensive is currently unacceptable and unachievable.
- **Wastage Focused** do not factor the environment into their lifestyles<sup>3</sup>. Indeed many have a rather negative attitude towards environmentalism. They are driven primarily by a desire to save money and a sense of efficiency.
- **Long-Term Restricted** also do not consider the environment and voice rather negative attitudes towards environmentalism. They are short of money and can therefore be motivated by financial incentives.
- **Basic contributors** can be distinguished from the other groups by their lack of motivation to adopt pro-environmental behaviours, even when faced with choices that may save money.

### **Implications of the research for Defra's Environmental Behaviours Framework**

- 1.13 Defra's Environmental Behaviours Strategy Scoping Report highlights potential interventions that are considered the 'most likely' to influence behaviour. Evidence from the reports reviewed here suggests a number of implications for these suggested interventions, including the suggestions that: incentives for microgeneration should be aimed at those segments most likely to lead uptake (Greens, Consumers with a Conscience and Wastage Focused); any efforts to reduce business air travel are highly desirable; the improved provision of public transport is vital, as is food industry action to reduce packaging; promoting the health benefits of changes to diet, and other sustainable food choices, is likely to be effective; and home environmental audits also have a high potential to encourage change.

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<sup>3</sup> This finding is based primarily on evidence from the Food and Energy projects.

## Recommendations

- 1.14 A number of recommendations emerged from the synthesis of the five public understanding research projects, as are summarised below:
- 1.15 It is apparent that there is a need for government action to raise awareness and promote sustainable consumption. Both explicit and implicit support for greater regulation and choice editing emerged from several of the projects.
- 1.16 Poor transport infrastructure and high costs were repeatedly cited as barriers for adopting more sustainable transport behaviours, leading to an immediate need for government to improve transport infrastructure.
- 1.17 Information campaigns to raise awareness about environmental issues, particularly climate change, are still necessary, although it is imperative that messages from government are consistent. The lack of trust in government means that campaigns should be run in association with independent organisations, who also have a lead role to play in verifying product labelling schemes.
- 1.18 Pro-environmental behaviour is often assumed to involve sacrifice, higher cost and poorer quality; campaigns should challenge these mistaken assumptions and misconceptions about sustainable consumption, emphasise the impact of personal lifestyles, and try to make sustainable behaviours normative. There would be value in information campaigns that seek to dispel the negative associations that some segments have with environmentalism. The positive influence (in the energy project) that the provision of personally tailored information had on participants' behaviour also suggests that environmental audits could be used to overcome misconceptions.
- 1.19 Cost savings and health benefits emerged as powerful motivators from the research projects, suggesting that efforts should be made to emphasise these 'double wins'. Finally, it is necessary to systematically remove the excuses people give for inaction as people will find as many excuses not to act as possible.

## Further research

- 1.20 A consistent message across all of the five public understanding reports was the need for further research into pro-environmental behaviour change. It is the recommendation of the Synthesis Review that, wherever possible, future research is carried out longitudinally in order to explore the longer term impacts of behaviour change interventions.

## **Defra summary of key points arising from Stakeholder Forum meeting on Environmental Behaviours and Public Engagement, 25 April 2007**

This note gives Defra's summary of key points from the stakeholder discussions held on 25 April at Central Hall, Westminster. A full record and list of participants is available.

The aims of the meeting were to

- Discuss what actions can be taken to progress the proposed headline behaviours<sup>1</sup>, and by whom;
- Identify next steps, in particular the potential for a strengthened partnership between the public, private and third sectors to engage consumers on the environment;
- Get feedback on Defra's initial scoping work on an environmental behaviours strategy.

Invited stakeholders ranged across the public, private and 3<sup>rd</sup> sectors as well as experts in social research and marketing. The day was run as a deliberative forum with participants arranged in groups of 8/9 with a Defra facilitator to record the discussion. Overall facilitation was provided by David Fell from Brook Lyndhurst. Interactive technology enabled the discussions to be captured as “live”. Participants voted on their organisation’s interest in each of the behaviour goals, the proposed population segments and current and future partnership working.

The final programme is attached at annex A.

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<sup>1</sup> From Defra Scoping Report on an environmental behaviours strategy for Defra, December 2006

## **Headlines**

- Defra’s approach on pro-environmental behaviours is broadly viewed as sensible, including evidence base, goals, and framework which stakeholders can operate and co-operate;
- Concerns include Govt/business leading by example and ensuring appropriate infrastructure enables people to act; that Defra works across Government and with other major initiatives;
- Definition of behaviour goals on more efficient vehicles and lower impact diets questioned; substantial input given on all the goals in terms of targeting, measures and roles;
- Participants’ interest in the proposed headline behaviour goals was quite evenly spread across all of the goals, ranging from 5% of participants interested in lower ghg/environmental impact diets to 11% interested in energy management in the home;
- Relatively few of the participants were narrowly focussed on one or two particular goals; in nearly all cases their work spans a range of behaviours;
- Similarly, participant interest ranged across all of the (initial) Defra segments, but with highest interest focussed on “consumers with a conscience”;
- There is a high degree of joint working on environmental behaviours between organisations; two thirds intend to increase this further;
- Some support for the idea of a Government-consumer (and business) deal or compact, but significant concerns about adequacy, ambition and clarity.



### **Feedback on Defra’s scoping work on behaviours strategy**

- On the positive side, the broad approach is viewed as sensible: with segmentation based on values and attitudes; a range of easy and hard behaviours; customer focus; and a framework in which stakeholders can operate and be clear about roles and responsibilities; development of a central segmentation model is a good use of public money since it reduces duplication and can be based on bigger samples;
- Concerns included
  - the need to see leadership and exemplification by Government and business and for more action on products and infrastructure that would enable people to act;
  - the need for Defra to work on this across Government and with other initiatives such as icount and WITT;
  - proposed Defra segmentation model needs to recognise that other segmentation approaches may be just as useful; need to link to population data, distinguish between rural and urban interests; habitual behaviours; need to revisit naming of segments and pay more attention to the “disinterested” group; need to think about how we can target people, based on this kind of model – what kinds of approach does this imply?; what does it mean for local/community based initiatives?
  - We need to look at all messages consumers are getting, including those that run counter to the behaviours strategy; we need to make sure that messages are generally consistent within Government and from other sectors;

### **Partnership working**

- There is a high degree of joint working on environmental behaviours between organisations; two thirds intend to increase this further;
- Benefits of partnership working on environmental behaviours include:
  - Sharing experience/expertise/knowledge
  - Having critical friends, being able to challenge
  - Being able to apply local knowledge;
  - Impact, from larger coalitions acting together;
  - More consistent messaging.
- Risks include:
  - Disruption from staff turnover;
  - Cultural differences e.g. differing values or approaches;
  - Confusion over ownership or who gets the credit;
  - Complexity/slow moving

### **Ground rules for improved/increased partnership working**

- Consider setting up longer term strategic relationships especially for larger coalitions; these depend on being driven by key individuals and secure funding; be prepared for this to take time to set up;
- Agree objectives/goals from the start;
- Show the benefits to each partner;
- Clarify the distinct roles and contributions of each partner; (product) endorsement is not enough;
- Establish 2-way trust and commitment, managing issues such as commercial sensitivity, transparency;
- Be prepared to compromise or be clear on where you will need to agree to disagree;
- Make it a learning process;
- Be prepared to change your organisation’s own practices as a pre-requisite to joining a partnership;
- For Government, provide the contextual “platform”, identifying priorities and timelines, facilitating partnership creation.

### **Views on behaviour goals<sup>2</sup>**

#### **Install insulation products**

- Grants not being taken up sufficiently; needs more active promotion;
- Need to target private landlords, hard to heat homes, home sellers and improvers;

#### **Buy energy efficient products**

- Need to address product design, availability, standards;
- Focus on consumers with highest impacts;
- Tackle through choice editing: information, ratings, regulation;
- Trusted intermediaries to provide credible advice; Govt (or EU) to set standards;

#### **Better energy management and usage**

- Behaviour goal is acceptable to most people – but means deepening the analysis;
- need to break into habits – “dissonance jamming”, e.g. stickers on fridge; also about dealing with new norms, such as daily showers;
- Infrastructure/tools can help, e.g. heating control system, smarter billing

<sup>2</sup> Each participants’ table discussed just one goal, covering commentary of Defra’s initial analysis, recommendations on targeting, policy measures, resources and roles

<ul style="list-style-type: none"><li>• More energy advice in the home;</li><li>• Prioritise those who are into saving money/avoiding waste; target at key life stages;</li><li>• Public sector must play leadership role, with longer term financing, support for more networking, easier access to funding for smaller scale organisations; more accreditation for energy management work;</li></ul>
<p><b>Install domestic micro-generation through renewables</b></p> <ul style="list-style-type: none"><li>• Need to ensure understanding about on-going maintenance;</li><li>• Potentially aspirational for high income groups but lag on support over planning/quality assurance etc; but question whether consumers are the right place to start – need more first in Govt, business, local authorities to trial and share experience;</li><li>• Need more monitoring and evaluation;</li><li>• Govt should decide on targets for take up.</li></ul>
<p><b>Increase recycling and segregation</b></p> <ul style="list-style-type: none"><li>• Waste/recycling behaviours more mainstream than other pro-environmental behaviours;</li><li>• Main barrier is access to collection schemes; need to be more consistent in their operation, and therefore be more consistent with communications at national and local levels;</li><li>• More focus needed on the less “interested” segments; other groups will respond to service improvements; raise the bar on what is considered “normal” behaviour on recycling and make non-participation “anti-social”;</li><li>• Plastic bag campaigns can be a catalyst and help change mindsets;</li><li>• Link to climate change to generate more buy-in;</li><li>• Roles for national and local government in making infrastructure and communications more consistent; private, third and public sector can help roll out.</li></ul>
<p><b>Waste less (food)</b></p> <ul style="list-style-type: none"><li>• Issues that need to be considered: “bogofs”; pre-packaged food consumption/waste; cooking (and food storage) skills; affluence, age, household size and food waste; sell by dates; move from dry food to short-life fresh foods; emotive response to food; whether there are differences in food waste between segments; differences in shopping habits and impact on waste (e.g. internet v supermarket);</li><li>• Possible measures: education on food management and using left-overs; technology/labelling that helps plan menus; waste charging; better food offers by supermarkets;</li><li>• Roles: retailers would need to see advantage of waste less as a promotional element; (public and) ngo sector to campaign, generate consumer interest and retailer response; clear potential for partnership funding</li></ul>

<p><b>More responsible water usage</b></p> <ul style="list-style-type: none"><li>• Lack of metering is barrier for some people; peer/social pressure, e.g. on hosepipe bans; some groups may not realise that they can act; poor image of water companies is barrier to acting;</li><li>• Need to map current behaviour in order to target segments</li><li>• Measures: choice editing, e.g. to remove most inefficient products; labelling etc to promote the best; improve affordability of meters</li><li>• Roles: trusted intermediaries, according to segment, to build positively-phrased social pressure and link govt advice to advice on products; water companies to give more billing information and exemplify through own efficiency improvements</li></ul>
<p><b>Buy/use more energy efficient (low carbon) vehicles</b></p> <ul style="list-style-type: none"><li>• Goal should not encourage more car purchases – better option would be to buy second hand and improve efficiency, to avoid embodied energy from manufacture</li><li>• Most inefficient vehicles should be removed from the market</li><li>• Should also incentivise alternatives to car use</li><li>• Need to build carbon literacy, cap and trade personal emissions</li></ul>
<p><b>Use car less – seek alternatives for short trips (&lt;3 miles)</b></p> <ul style="list-style-type: none"><li>• Need to break motivations down more, according to specific (short) journey types, but lot of infrastructure issues also need to be addressed;</li><li>• Measures: need to look at street lay-out to ensure cycling/walking friendly; link to health messages, ensure they are not too worthy</li><li>• Roles: onus on schools, businesses to encourage alternatives; test out different schemes via 3<sup>rd</sup> sector;</li></ul>
<p><b>Reduce non-essential flying (short haul)</b></p> <ul style="list-style-type: none"><li>• What is meant by non-essential? Need to reconcile appropriate level of flying with airport provision, and available alternatives; personal aspirations extremely emotive; complex message prone to misinformation, e.g. relative impact on carbon footprint;</li><li>• Need to look at carbon footprint of each segment; but also at other (business, freight, military) users; factor in other benefits, e.g. noise, health, land-use</li><li>• Measures: needs “big idea”; ban domestic flights whilst addressing rail capacity; smarter working; carbon trading; govt/3<sup>rd</sup> sector setting example; viable alternatives need to be available first; hypothecate APD or link to rates to efficiency improvements; or use to leverage other behavioural changes instead</li></ul>
<p><b>Eat more seasonal/local/regional/national food</b></p> <ul style="list-style-type: none"><li>• Opportunities to engage harder to reach communities; emphasise links to</li></ul>

<p>food waste, composting, food life cycle; just local not necessarily BPEO, but seasonally local is common agreed goal/focus; not just about carbon;</p> <ul style="list-style-type: none"><li>• With provision of local infrastructure can be made more feasible for lower income groups; higher income groups could be targeted through membership organisations;</li><li>• Measures: need combination of encouragement to retailers and promotion of local food production; can be made celebratory and fun; procurement practices; no need for big communications campaign – is about funding and building the local infrastructure; seasonal food should be offered with recipes and advice;</li><li>• Roles: govt to regulate minimum standards for labelling, use public procurement; orgs that have right brand/trust;</li></ul>
<p><b>Adopt diet with lower ghg/environmental impacts</b></p> <ul style="list-style-type: none"><li>• Goal unlikely to be attractive if linked to sustainability; low awareness of impact of diet; use health as proxy; goal too focused on climate change impacts; need to promote good choices rather than tell people what not to do; should not be a Defra goal as currently framed</li><li>• Measures: danger in anything prescriptive; promote producing own food; only focus on appropriate segments;</li><li>• Roles: Defra should work more with DoH on this one.</li></ul>

### **Views on citizen-Government deal**

<ul style="list-style-type: none"><li>• Idea of a compact is right; addresses principle of “I will if you will”; helpful for it to be written down;</li><li>• Individual actions are too small; need fewer bolder ideas with clear vision; deal needs to be more balanced; roles of individuals and Government should complement one another rather than trying to match;</li><li>• Needs to be more from Government, and leading by example; more about what Government has done and is doing rather than aspirational; include international role;</li><li>• Need deal with business as well as consumers;</li><li>• Proposed deal is too complicated and dry; not clear what the relationship is in the contract;</li><li>• Biggest deal would be knowing that everyone is acting, winning back sense of community;</li><li>• Gaps on what Government is doing to help people fly less, use public transport, buy local/seasonal food; overall infrastructure gaps.</li></ul>
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**Stakeholder Forum on environmental behaviours and public engagement**

**Date: 25<sup>th</sup> April 2007 10.30 – 5 pm**

**Venue: Central Hall Westminster, Storey Gate, Westminster, London SW1H 9NH**

**FINAL PROGRAMME**

- |       |   |   |
|-------|---|---|
| 10.30 | <b>Registration</b>   |   |
| 11.00 | <b>Introductions</b>  | David Fell, lead facilitator, Brook Lyndhurst                         |
| 11.10 | <b>Defra welcome</b>  | Neil Thornton, Director, Defra  |
| 11.15 | <b>Defra behaviour change strategy</b>  | Philip Stamp, Defra   |
| 11.30 | <b>First group discussion: current and planned activity on behaviour change; feedback on Defra’s initial scoping work</b> |   |
| 12.00 | <b>Case studies</b>   | David Hall, Climate Group<br>Anna Battese, Marine Stewardship Council |
| 12.15 | <b>Second group discussion: collaborative working</b>   |   |
| 12.45 | <b>Lunch</b>  |   |

Annex I– stakeholder input from forum, April 2007

13.30	<b>Review</b>	David Fell
13.45	<b>Case studies</b>	Mark Avery, RSPB Berry d’Arcy, National Trust David Shreeve, Conservation Foundation
14.00	<b>Third group discussion: Evidence on behaviour goals</b>	
14.45	<b>Fourth group discussion: behaviour change road maps, target groups, interventions, roles</b>	
15.45	<b>Feedback</b>	David Fell
16.00	<b>The Act on CO<sub>2</sub> deal</b>	The Rt Hon David Miliband MP, Secretary of State, Defra
16.30	<b>Conclusions</b>	Neil Thornton
	<b>Reception</b>	

Enquiries to [ebc3@defra.gsi.gov.uk](mailto:ebc3@defra.gsi.gov.uk) or call Jacinta Vaz on 0207 082 8659

## Annex J

### List of participants at the Stakeholder Conference, April 2007

Philip	Monaghan	Accountability
Joshua	Steiner	Action for Sustainable Living
Andrew	Darnton	AD Research & Analysis
Laura	Middleton	BBC
Shanta	Barley	BBC
Matt	Prescott	BBC
Frances	Weil	BBC
Ian	Blythe	Boots plc
Jayne	Cox	Brook Lyndhurst
Vanessa	Gibbin	Carbon Trust
Simon	Roberts	Centre for Sustainable Energy
Mark	Walton	Community Development
Tom	Freeland	Community Service Volunteers
David	Shreeve	Conservation Foundation
Liz	Cotton	Consumer council for Water
Bjarne	Pedersen	Consumers International
Dermot	Egan	CPI, Cambridge University
Andrea	Davies	CPRE
Andrew	Gwilliam	Defra
Ann	Davison	Defra
Charles	Harkness	Defra
David	Cooper	Defra
Dominic	Pattinson	Defra
Ellen	Watkin	Defra
Irene	Westerman	Defra
Jacinta	Vaz	Defra
Jo	Parry	Defra
Julie	Barnet	Defra
Kevin	Ruston	Defra
Kirsten	Reeves	Defra
Neil	Thornton	Defra
Nieves	Bottomley	Defra
Paul	Gilham	Defra
Philip	Stamp	Defra
Rachel	Muckle	Defra
Robert	Lowson	Defra
Rosemary	Thurbon	Defra
Sam	Rowbury	Defra
Scott	Ghagan	Defra
Simon	La Roche	Defra
Sue	Nowak	Defra
Susannah	May	Defra
Tony	Pike	Defra
Tony	McDougal	Defra
Yasmin	Diamond	Defra
Chris	Holmes	Department of Health
Clare	Brass	Design Council
Tom	Elliott	Dft
Joe	Finlay	Dft
Anthony	Karabinas	Dti
Jo	Marsden	DTI
Sally	Millward	DTI
Sarah	Darby	ECI, Oxford University
Richard	Suddaby	Eden Local Agenda 21
Ginette	Unsworth	ENCAMS
Erika	Coghlan	Envirowise
Brooke	Flanagan	EST
Arlo	Brady	Freud Communications
Adam	Bradbury	Friends of the Earth
Stewart	Horne	FSA
Solitaire	Townsend	Futerra
Valentina	Buonumori	Future Foundation
Sam	Balch	Global Action Plan



Jayne	Whitton	Greater London Authority
Stephen	Hounsham	Green - Engage Communications
Rebekah	Phillips	Green Alliance
Stephen	Hale	Green Alliance
Zoe	Kimber	Hampshire County Council
Adrian	Lee	Hampshire County Council
Rachel	Barbour	HSBC
Fiona	Nicol	Independent consultant
Simon	Retallack	lppr
Emma	Hinton	King's College, London
Jan	McHarry	London 21
Afshen	Rashid	London Sustainability Exchange
Anna	Battese	Marine Stewardship Council
John	de Vial	MyTravel UK
Matthew	Ray	National Audit Office
Ned	Lewis	National Consumer Council
Belinda	Fairbrother	National Federation of Women's Institutes
Ewen	MacGregor	National Social Marketing Centre
Berry	D'Arcy	National Trust
Ellie	Robinson	National Trust
Sharon	Gunn	Natural England
Jim	Burt	Natural England
Dr Sam	Thompson	NEF
Helen	Wright	O2
Isabel	Del Burgo	Peterborough Environment City Trust
Rachel	Huxley	Peterborough Environment City Trust
Mayer	Hillman	Policy Studies Institute
Kate	McGeevor	Policy Studies Institute
Patrick	Grady	Ramblers Association
Gareth	Morton	Resource Futures
Jane	Stephenson	Resource Futures
Mark	Avery	RSPB
Fiona	Ball	Sky
Paul	White	Social Marketing Practice
Ruth	Allen	SPAN partnership
Jeanette	Longfield	Sustain
Poppy	Maltby	Sustainability Development Commission
Leslie	Watson	Sustainability South West
Andrew	Walker	Sustainable Development Commission
Andy	Pidduck	TFL
David	Hall	The Climate Group
Chris	Leigh	The Climate Group
Professor Bas	Verplanken	University of Bath
Andy	Richards	University of Exeter
Michael	Peters	University of Surrey
Claudia	Kuss-Tenzer	Wastewatch
Bruce	Horton	Water UK
Chris	Philpot	Waterwise
Julie	Fulton	Wildlife Trusts
Jane	Laurie	Wildlife Trusts
Ed	Pomfret	Woodland Trust
Gareth	Lloyd	WRAP
Rod	Sterne	WWF
Martin	Trouse	YHA

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<sup>1</sup> Defra published reports are available through the Defra Website at <http://www.defra.gov.uk/corporate/publications/default.htm>

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