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.

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Glossary

DBERR	Department for Business, Enterprise and Regulatory Reform
DCMS	Department for Culture, Media and Sport
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DH	Department for Health
EST	Energy Saving Trust
FSA	Food Standards Agency
SCP	Sustainable Consumption and Production
SCR	Sustainable Consumption Roundtable
GR	Greens
BC	Basic contributors
CC	Currently Constrained
CWC	Consumers with a Conscience
LTR	Long Term Restricted
WF	Wastage Focused

Executive summary

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

Each of these project reports are available to be downloaded from http://www.defra.gov.uk/environment/business/scp/research/themes/theme3/sustain-consump0607.htm

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[1].

- **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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[1] 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[2]. 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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[2] 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[3]. 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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[3] 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.

2   Introduction

Introduction

2.1   This Synthesis Review draws together the results of five independent pieces of research into the public understanding of sustainable behaviours and feeds into the wider policy area of Sustainable Consumption and Production (SCP).   The five projects reviewed in this report are:

Dawkins, J., Young, D., and Collao, K. (2007). Public Understanding of Sustainable Finance and Investment: A report to the Department for Environment, Food and Rural Affairs. Ipsos- MORI. Defra: London

Miller, G., Rathouse, K., Scarles, C., Holmes, K. and Tribe, J. (2007). Public Understanding of Sustainable Leisure and Tourism: A report to the Department for Environment, Food and Rural Affairs. University of Surrey. Defra, London

Owen, L., Seaman, H., and Prince, S. (2007). Public Understanding of Sustainable Consumption of Food: A report to the Department for Environment, Food and Rural Affairs. Opinion Leader. Defra, London.

Brook Lyndhurst (2007). Public Understanding of Sustainable Energy Consumption in the home: A report to the Department for Environment, Food and Rural Affairs. Brook Lyndhurst. Defra, London.

Richardson, J., Harrison, G., and Parkhurst, G. (2007). Public Understanding of Sustainable Transport: A report to the Department for Environment, Food and Rural Affairs. Scott Wilson. Defra, London.

2.2   The UK Strategy for Sustainable Development '*Securing the Future'* identified a '*One Planet Economy: Sustainable Consumption and Production'* as one of the key areas where government needed to focus its attention.   The Strategy recognises that while increasing prosperity has enabled more people than ever before to enjoy goods and services that were previously available only to a few, the environmental impacts of our consumption and production remains a concern.   SCP is concerned with breaking the links between economic growth and environmental degradation; in other words getting more for less.

2.3   To work towards SCP, Defra has identified a need to build on people's growing awareness of social and environmental concerns and the importance of their roles as citizens and consumers.   A robust SCP evidence base is therefore required to

support Defra in the delivery of SCP policy commitments and ensure policy development is embedded in the latest evidence.

2.4   Research by the Sustainable Consumption Roundtable, '*I will if you will*', highlighted the need to explore public responses towards actions for sustainable lifestyles, and interactions with broader lifestyle aspirations. The report also advocated dividing the public into differentiated segments based on attributes, such as attitudes and values, in order to gain an understanding of how to effectively engage different segments of society.

2.5   Building on this report and other research into behaviour change for sustainable consumption, Defra is currently developing an Environmental Behaviours Framework, which will outline the action Defra will take to support and encourage pro-environmental behaviour change.   The findings from the five 'Public Understanding' projects reviewed here will feed into an ongoing programme of research and will inform this framework.

2.6   Following a social marketing approach, behaviour goals were developed from the SCR report '*I will if you will*' and wide consultation with Defra policy leads. This long list was refined through Green Alliance workshops involving a wide range of key stakeholders (academics, businesses, NGOs and OGDs) to identify twelve headline behaviour goals. This headline list forms the focus for the Environmental Behaviours Framework and has informed the identification by Defra of five priority behaviour groups: personal transport; domestic energy use; domestic water use; product purchasing (for example, food, appliances and clothing), and waste, some of which are the focus of the research synthesised here.

2.7   Qualitative research to explore Defra's headline behaviour goals was commissioned to provide a current picture of where the public stand in terms of their current behaviour, expectations, aspirations, assumptions and understanding. Qualitative research is used to gain a deeper understanding of a research subject, providing contextual and descriptive information. Data gathered is typically in the form of words, pictures and objects. Qualitative research does not lead to numerical information and it does not aim to be statistically representative of a population. Each project aimed to engage over 100 people and to incorporate a deliberative element.   The projects explored these themes as well as responses (acceptability, motivations and barriers) around specific behaviour goals in each of these key areas.

2.8   Some, but not all, of the research projects used a segmented approach to recruitment based on a preliminary Defra segmentation model to explore differences across the population.   These segments were based on attributes, such as environmental attitudes, values and beliefs, and further development of this model is

underway. Box 1 describes the characteristics of preliminary segments which will be progressed to provide a more detailed picture.

2.9   Box 1. The seven population segments

Greens

Greens (GR) are driven by their belief that environmental issues are critical. They are well-educated on green issues, positively connected to arguments and do not see environmentally friendly people as eccentric.

Consumers with a Conscience

Consumers with a Conscience (CWC) want to be seen to be green. They are motivated by environmental concerns and seeking to avoid guilt about environmental damage. They are focused on consumption and making positive choices.

Wastage Focused

Wastage Focused (WF) are driven by a desire to avoid waste of any kind. They have good knowledge about wastage and local pollution, although they lack awareness of other behaviours. Interestingly, this group see themselves as ethically separated from GR.

Currently Constrained

Currently Constrained (CC) want to be green, they just do not think there is much that they can do in their current circumstances. They have a focus on balance, pragmatism and realism.

Basic Contributors

Basic Contributors (BC) are sceptical about the need for behaviour change. They tend to think about their behaviour relative to that of others and are driven by a desire to conform with social norms. They have a low knowledge of environmental issues and behaviours

Long Term Restricted

Long Term Restricted (LTR) have a number of serious life priorities to address before they can begin to consciously consider their impact on the environment. Their everyday behaviours are often of low impact for reasons other than environmental.

Disinterested

Disinterested display no interest or motivation to change their current behaviours to make their lifestyle more pro-environmental. They may be aware of climate change and other environmental issues but this has not entered into their current decision making processes.

2.10   The 'Disinterested' segment was excluded from all of the research projects, and therefore the Synthesis Review, because it was felt this was not a key segment for immediate Defra interventions.

Aims and Objectives of the Synthesis Review

2.11   The overall objective of this Review was to synthesise the findings of the five public understanding research projects in order to investigate comparisons between the key areas of sustainable food, transport, finance and investment, leisure and tourism, and energy use in the home. Specific objectives of the Synthesis Review were :

- To establish public understanding on the issues surrounding sustainable behaviours in each project area.

- To examine public aspirations and assumptions (correct or not) in each of the key areas, and to consider whether they reflect across all the five projects.

- To understand participant's expectations for government, business and industry and consumers and citizens.

- To identify common motivators and barriers for behaviour change.

- To identify which behaviour goals were acceptable to participants; which goals were regarded by participants as feasible; and which goals participants expressed a willingness to engage with.

- To identify and highlight any commonalities, differences and inconsistencies between the projects.

Approach of the Review

2.12   The initial phase of the preparation of the Synthesis Review involved reading and analysing the reports in order to make comparisons between the public as a whole, and, where applicable, between the different segments in each of the key areas studied. An initial review was produced, which was used as the basis for discussion in a half-day consultative workshop.

2.13   The consultative workshop was held with researchers from each of the project teams and Defra, and provided an opportunity to discuss and get feedback on the headline findings. In particular, the review team were interested to ascertain whether there were any gaps in the initial findings, or inconsistencies between the research projects.

2.14   Based on workshop discussions and further analysis of the reports, a technical report, summary report and policy briefing have been produced.

2.15   For the purpose of this Review 'acceptability is taken to mean how acceptable, or well received, the behaviour goals were to participants; 'feasibility' means how able participants felt they were to adopt the behaviour goals; while 'willingness' refers to how willing, or ready, participants were to adopt the behaviour goals.

Contents of the Synthesis Review

2.16   Chapter 2 explores the assumptions that participants held about pro-environmental behaviours and the myths that may affect the adoption of such behaviours.

2.17   Chapter 3 looks at participants' expectations of government, business and industry, and consumers and citizens, in relation to the environment and behaviour change.

2.18   Chapter 4 discusses the role of information in behaviour change. It explores the impact of information on behaviour across the five projects, and discusses the wider implications of the research findings.

2.19   Chapter 5 identifies the common motivators and barriers to behaviour change.

2.20   Chapter 6 takes a look at the Behaviour Goals explored in the research projects. This section explores the attitudes of the different segments towards the behaviour goals, and addresses the acceptability, feasibility and willingness of the segments to adopt the behaviour goals.

2.21   Chapter 7 considers the policy interventions highlighted in Defra's Environmental Behaviours Framework in the light of the evidence from the research projects and Synthesis Review.

2.22   Based on the evidence presented in the Synthesis Review, the penultimate chapter provides some recommendations for Defra.

2.23   The final chapter provides suggestions for further research that is needed to build on the foundations of the five qualitative research projects reviewed here.

3 Myths and Assumptions

Introduction

3.1 Across all the projects reviewed, it was obvious that a variety of often very misplaced assumptions and myths affect pro-environmental behaviour. While some of these present valuable opportunities for Defra, many demonstrate the scale of the challenge faced when trying to encourage sustainable consumption.

3.2 Participants are generally unaware of government or industry commitment to mitigate climate change. Even when they are aware, belief in the value of such commitment is confounded by conflicting messages. For example, participants are aware of efforts to encourage them to fly less but it is difficult for them to see how this is important when new runways continue to be built.

3.3 A small number of participants do *not* believe that climate change and environmental degradation are a problem. Instead, they consider the environment's prominence in the media and within politics as an indication that it is a 'fad' or a fashionable bandwagon onto which some jump. This is particularly concerning given that the projects reviewed set out to exclude members of the public belonging to the 'disinterested' segment.

3.4 There is a poor understanding across all project participants of the relative impact that different behaviours have on the environment. There was a belief across several projects that frequent, day-to-day behaviours have more of an impact on the environment (regardless of what they are), than one-off event-driven decisions. In turn, this leads to the assumption that 'good' daily behaviour goes someway in legitimising or offsetting occasional 'bad' behaviour, like flying. The extent to which this is important is largely dependent on the frequency with which the 'bad' behaviour takes place.

Pro-environmental behaviour

3.5 Pro-environmental behaviour is frequently perceived to mean one or more of the following:

- **Sacrifice**. Participants frequently suggested that making sustainable choices would involve sacrifice, cutting back or missing out, such as giving up a holiday or receiving lower returns on investment.

- **Higher cost**. Across all projects there was the assumption that a choice that is sustainable or environmentally friendly will automatically cost more than a less sustainable option.

- **Poorer quality**. If a product is not assumed to cost more (as above), it is often because it is seen instead to be of poorer quality. In some cases, products or actions are assumed to involve both higher cost and poorer quality[4].

3.6 As a result of these assumptions, and in nearly all cases, sustainable choices are not viewed favourably by the majority of participants[5].

3.7 These assumed trade-offs, between cost, quality and environmental harm, were most apparent in the sustainable finance research where environmentally friendly finance was seen as providing either higher costs or lower returns on investment (sacrifice) or being higher risk (lower quality). This theory was reinforced, in the eyes of participants, by the fact that major financial institutions are not marketing environmentally friendly finance; the assumption being that if environmentally friendly finance yielded higher returns or cost less this would not be the case. This lead to the idea that financial security and environmental protection are mutually exclusive concepts that cannot be reconciled. Financial issues are associated with individualism and profit, the environment with society and the collective good. The assumption that green financial products offering equal or higher returns are 'too good to be true' was identified as the key myth to be challenged.

3.8 Closely tied to wider general assumptions about sustainable choices and expectations of industry, there emerged several specific misconceptions about product performance.

3.9 When discussing the purchasing of energy-efficient products, participants were generally surprised to learn that newer, modern products are not necessarily more energy efficient. It is unclear whether this reflects a belief that the government should be regulating more in this area or perhaps a belief that industry should be developing better technologies, although it does suggest that greater choice-editing would be broadly acceptable to the public.

3.10 A corollary of the assumption that sustainable alternatives necessitate lower quality was the widespread belief that all low energy light bulbs perform badly. Although such beliefs may frame general assumptions, a major problem with tackling such beliefs (as discussed during the researcher workshop), is that they are often founded

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[4] The exception to this is in the case of food, where the higher cost of sustainable options - such as organic or sustainably sourced food - is also associated with higher quality produce.

[5] As above.

on consumer experience of a product during a much earlier stage of development. For example, although the performance of energy efficient light bulbs is *now* comparable with incandescent alternatives, even a few years ago, energy saving bulbs were notoriously slow to light up. As such, many people that bought them then, or have heard stories from those that did, still closely associate the bulbs with this poor performance.

3.11   Another 'myth' that emerged during the energy research was the belief held by some of the participants that cavity walls 'allow a house to breathe' and therefore should not be insulated. The fact that, despite the provision of information to the contrary during the audits, people could not be persuaded otherwise about this, suggests it is an important 'myth' for Defra to consider tackling.

4 Expectations of Government, Industry and Consumers

Introduction

4.1 Across the research projects, expectations of government and, to a lesser extent, industry were high. In particular, the belief was widespread that government, and especially leading politicians, should be leading by example. However, mistrust was a recurring issue amongst the projects and the current high profile of the environment was often viewed with scepticism by some participants.

4.2 This mistrust was particularly apparent in the energy project, where mistrust in government, local authorities and energy companies was widespread. Motivations for government or industry encouraging the public to adopt more sustainable energy behaviours were rarely associated with environmental concern but rather were attributed to energy security, deeper political motivations, or providing an opportunity to increase taxes. Green issues were rarely seen as the principal reason for government or industry pushing for changes in energy use.

4.3 The theme of expectations also ties into the issue of responsibility. Which institutions were felt to be responsible, both for protecting the environment and for causing degradation, was key to who was expected to lead and take action. Interestingly, participants rarely viewed themselves as being responsible, although there is evidence some segments take more responsibility than others, and therefore had few expectations of one another. Both government and industry were often perceived to be transferring responsibility for action onto citizens.

4.4 Another common expectation of both government and industry was that they should be making it easier for people to make sustainable choices. Examples of how government, business and industry could make sustainable options easier included, for example:

- the provision of better information,

- improvements in technology,

- subsidisation of sustainable products, and

- tighter regulation.

4.5 There was also an expectation of government in its role as an educator; NGOs were

also thought to have a role to play in education. Teaching the next generation about environmental issues was, across the groups, perceived to be vital to encouraging environmental understanding. Awareness raising, particularly informing people about what they should be doing and how they could take action, was another area where government action was expected.

4.6   The following section describes the expectations of government and industry in more detail, before discussing some specific expectations arising from the research projects.

Expectations of Government

4.7   One of the common themes of the five research projects was the expectation that it should be government that takes the lead on environmental issues. Participants argued that it is government that has the responsibility for taking the environmental agenda forward, in part due to the scale of intervention required. Despite the widespread expectation that it should be government that leads, there was deep mistrust of government and scepticism about its motives.

4.8   While attitudes to intervention varied, there was tacit support for choice-editing, above all in the food and energy projects, tempered by a wariness that regulation and intervention would lead to the development of a 'nanny state'.

4.9   Across several projects, individuals drew on a general mistrust of government to form the more explicit belief that environmental taxes are largely a means for the government to make money and should therefore not be supported. An encouraging outcome of this, however, was evidence that participants would have supported such taxation if they did believe that environmental hypothecation would occur.

4.10   Even if hypothecation was not referred to, participants still expressed some support for environmental taxation. Participants in the transport research expected government to be providing tax breaks for those with carbon efficient cars or those that work at home, while also imposing congestion charges.

4.11   Issues of equity were often raised in response to questions about environmental taxation, with concern that these taxes would be regressive, unfairly penalising the poor. There was also suspicion that the government was pushing environmental issues in order to raise taxes. Although green taxation was treated with caution, there was some suggestion that the transparent hypothecation of taxes would go some way in tackling this.

4.12   An overarching expectation of government was that it should be making sustainable choices easier. Several examples of how this could be achieved were given,

including: lowering the cost of organic, seasonal and local food; removing unsustainable products from the market; the provision of information, such as the life cycles of products; and making sustainable choices more widely available. Participants also stressed the need for guidance and the provision of information when making sustainable choices. Participants commented that it was often difficult to differentiate between sustainable and unsustainable products. The use of comparison shopping, such as through websites, to assess the relative costs and benefits of various products and options was cited, particularly in finance, as being a way to address this need.

4.13 Expectations of the government's role as an educator were related to the importance of education, both in raising awareness amongst the public, and in ensuring the next generation develops the 'right attitude' to the environment.

Expectations of business and industry

4.14 In some of the groups, business and industry were seen to have a key leadership role in facilitating change, particularly in making sustainable choices easier. However, when it came to the provision of information about sustainable products, trust in business and industry varied; while in some projects, for example food, they were trusted to provide guidance, in others, such as energy, mistrust was widespread; there was no perceived motive for energy industries to act as reducing energy use would conflict with profit seeking.

4.15 Many participants were sceptical of companies that had adopted environmental policies; the sense that companies only adopted such policies to improve their reputations emerged from discussions. There was also mistrust of the motives of business and industry for encouraging the public to adopt more environmentally sustainable behaviours.

4.16 Participants in the sustainable food project argued that while both government and industry were held responsible for facilitating change, industry was seen as having the key leadership role. There was a more general cynicism regarding current levels of commitment and a sense that supermarkets are more powerful than government and therefore better regulation is needed. The food industry was not only held responsible for making the behaviour goals achievable, but was also expected to take the initiative on leading by example through changing their own behaviour.

4.17 Mistrust of big financial institutions was a key issue in the sustainable finance project. The perception that such institutions were interested only in profit was widespread across the discussion groups. Expectations of, and trust in, mutual building societies and ethical providers were, however, different. These institutions were trusted to

consider environmental as well as ethical concerns and issues. Trust in financial institutions was also impeded by a lack of transparency, as participants did not believe they would be told honestly about their investments, even if information was provided.

4.18   Within the leisure and tourism project, participants anticipated a greater role for government than for industry in reducing the impact of tourism and leisure for three main reasons: provision of leadership; the scale of intervention required; and responsibility for the problem.

Expectations of consumers and citizens

4.19   Participants recognised that individuals and consumers have some personal responsibility for changing their own behaviour but numerous barriers were cited that prevented this acknowledgement being acted upon. In addition, many barriers were felt to be outside of an individual's reach, such as the cost of transport.

4.20   While in general people recognised the need for change and were supportive of environmental policies, they were keen to protect individual lifestyles and choices. Attitudes varied between the segments. The GR, CWC and CC segments showed more willingness to make changes than the WF, LTR and BC segments, which were more sceptical about environmental issues and had rather negative attitudes towards environmentalism. Among most participants there was a sense that life could, and should, continue as it has done with environmental issues taken around the margins of day-to-day behaviour.

4.21   A common perception was that individuals were acting alone and that other people were not doing their bit; participants were conscious that even if an individual were to act in an environmentally-friendly manner, others may not, and that any benefits of action may be outweighed by the inaction of others. Participants were keen for environmental action to be widespread and to see that they were not acting alone; i.e. the development of social norms around these behaviours would be beneficial.

5   The Role of Information

Introduction

5.1   In general, participants had little scientific knowledge about environmental issues. Information (such as key facts from life cycle analysis) about the issues was provided in all the projects and its impact tested in three[6] of them. Information is not usually effective at influencing behaviour, but those which were tested observed changes in reported behaviour although it is not possible to determine whether the changes were due to participation in focus group discussions or the information presented. The home energy audits in the energy project were found to be particularly effective. Trust in the information source and the consistency of messages was found to be important. In both the transport and food projects, information which was considered surprising, for example the extent of food wastage, was found to be particularly memorable. However, there was evidence that participants were more receptive to information that they wanted to believe and less receptive to information that went against their preconceptions.

5.2   The following section describes the role of information in more detail and discusses which approaches were most influential.

The impact of information on behaviour

5.3   A finding across the projects was that most of the participants had very little scientific knowledge about environmental issues and the contribution of human behaviour to them. GR tended to be somewhat better informed than other segments, but even their knowledge was limited.

5.4   Participants were presented with information about environmental impacts of consumption in four of the projects: household energy, food, leisure and tourism, and transport. The food, finance and household energy projects conducted follow-up interviews with participants a couple of weeks after the group discussions to determine what had been absorbed from the focus groups and what impact the discussions had on their behaviour.

Energy

5.5   In the household energy project, information provided to the participants from a

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[6] The projects on Public Understanding of Sustainable Finance, Food and Household energy.

'neutral' advisor in the follow-up energy audits conducted was reported to have changed attitudes, assumptions and general opinions about energy in the home in terms of all the behavioural goals. In particular, micro-generation became more acceptable once key issues had been addressed, such as cost implications.

5.6 The relationship observed between the level of awareness of different types of renewables and support for renewable energy led the researchers to conclude that people need to be well informed about environmental issues in order to give renewable energy their support.

5.7 An interesting observation, of relevance to later discussion, is that many people initially had a negative opinion about energy-saving light bulbs, but favourable impressions from other people in the focus group often swayed them, and demonstrations during the energy audit convinced many people to use them

5.8 The extremely positive impact of the information provided in the energy audits in terms of changing perceptions and behaviour strongly indicates that providing personalised advice is a valuable technique that could be used in the other areas as well. This also leads to the recommendation that a longitudinal approach should be taken to future research (see section 8).

Food

5.9 For the food project, participants particularly *recalled* information two weeks after the focus group event that was provided about:

- The distance travelled by food during its life-cycle

- The amount of food wasted

- The intensive nature of some food production methods, such as yoghurt.

5.10 Many participants reported changed behaviour in relation to three key areas: consideration of source of food; consumption of more locally produced food; and consideration of quantities purchased in order to reduce waste. Members of the BC and LTR segments were least likely to report changing their behaviour for environmental reasons, although they may already be acting on these issues for other reasons.

5.11 An important finding to emerge from the food report and related to the provision of information was that focus group participants reported changes in behaviour in follow-up interviews that they had originally been unwilling to consider during workshops. This importantly suggests that 'willingness to change' is not always an accurate indicator of the likelihood of an individual to take a particular course of

action.

Leisure and tourism

5.12   In the leisure and tourism project, participants were asked in the focus groups about their understanding of the environmental impacts. These impacts were generally not well understood. Of particular concern was that there was little understanding of how leisure and tourism are linked to global warming. There was some awareness that planes were environmentally bad, but the reasons why were not understood. Participants were also not aware that the impact of the mode of the transport to get to a holiday destination is usually much more significant than other aspects of the holiday.

5.13   Information about the carbon dioxide (CO_2) emissions associated with travel was presented in two ways: tonnes of CO_2 emitted from the journey and light-bulb weeks (i.e. how long a 100W light bulb would have to be left on to emit the same amount of CO_2 as the journey). It was found that people had difficulty grasping tonnes of CO_2, but found the comparison with light bulb weeks easier to comprehend. There were no follow-up interviews in the leisure and tourism project, so it is not possible to assess how well the participants remembered what they had been told or whether the discussions affected their subsequent behaviour.

Transport

5.14   By contrast, the transport project found a high level of interest in climate change and very little of the information presented over the day was new to participants. However, being in a situation where they had to give serious thought to the topic resulted in greater reported engagement and participation at the end of the day.

Project-wide Findings related to Information Provision

5.15   *Clarity.* Across the projects, participants wanted information on key environmental issues and what actions individuals could take to alleviate environmental pressures and affect change. It was apparent that the information must be presented so that it is easy to understand, brief, simple, jargon free and applicable to everyday life.

5.16   *Source.* The source of information is vital in determining the extent to which people a) pay attention to and are receptive to information; and, b) believe the information. Considerable mistrust in both government and industry means, across the projects, neither is trusted as a reliable source of information. Paradoxically, it is government that participants feel should be educating the public and providing such information.

5.17   *Consistency.* Across all projects, participants were confused by mixed messages

about the impact of different behaviours. They are, for example, unclear whether organic food is healthier, misinformed about the relative environmental impacts of different modes of travel and many, most worryingly, are unconvinced of the scientific evidence for human-induced climate change. This leads to several recommendations related to the need for more consistent messages from Government.

5.18   *Audience.* There is evidence that if the provision of information is to be effective in changing behaviour it will have to be carefully targeted according to the audience. Levels of understanding vary across segments and demographic groups, as do the motivators and barriers that drive and prevent behaviour. Targeted information will be required to address this.

5.19   *Labelling.* The value participants place on the labelling of products varies across the projects, depending on how much information already exists about any given product. Participants support the labelling of environmentally friendly finance (which they feel they know little about) and want to see the energy labelling of appliances extended, but are against more labelling of food. In all cases, the regulation and monitoring of labelling schemes by trusted, independent bodies, is vital.

5.20   *Frequency of behaviour.* The way in which information is provided should take into account the frequency of the behaviour it is aimed at. Participants are more likely to rely on advice from others at the point of sale during one-off or occasional behaviours, like the purchasing of large financial products or expensive electrical equipment. In contrast, participants want to feel well informed about the impact of their daily behaviour and how to make changes, so that they can make educated decisions themselves.

5.21   *Hard-hitting information.* There was evidence from the food project that people are more receptive to information when they find it surprising. Participants were alarmed to learn about the amount of energy used in the life cycle of certain products and the amounts of food wasted, and as such found both messages easy to recall. However, care must be taken to avoid appearing alarmist. Hard-hitting information works best if it deals with something real and tangible that people can relate to.

5.22   *Receptivity.* It was also evident that people are more likely to believe something if it fits with what they want to believe.[7] When information challenges deeply-rooted beliefs, individuals are far less receptive, as shown by the refusal of participants in

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[7] The screening of the television programme '*The Great Global Warming Swindle*', which claimed that climate change was not due to human activities, had such an influence on participants in the energy project that the research team identified the screening as a research limitation. The fact that the programme influenced participants is unlikely to be because of the quality of the evidence it purported to present; rather it provided a useful example of scientific 'uncertainty', legitimising reluctance to change. It gave people the excuse they were looking for not to have to take responsibility and to avoid any impact on their lives.

the finance project to accept claims that green investments could be financially rewarding.

6 Motivators for and Barriers to Behaviour Change

Introduction

6.1   A variety of complex, interacting motivators drive individuals to make sustainable choices and engage in pro-environmental behaviour. Perhaps one of the greatest challenges for Defra when seeking to encourage such behaviour is that the very factors that motivate some people are the barriers that prevent action by others.

6.2   Similarly, motivators can drive both sustainable and unsustainable behaviours. There is evidence across all projects that motivators vary considerably across demographic groups and behavioural segments, and that they change over time according to individuals' life stages.

6.3   It was clear that in many cases the impact of discussion amongst participants and advice from moderators and independent advisors led to changes in the barriers and motivators identified by participants.

6.4   The following section of this report discusses the motivators and barriers to sustainable behaviours that emerge across all projects.

Motivators of Pro-environmental Behaviours

The desire to save money

6.5   Saving money, whether that be through reducing current spending or avoiding increased spending, is an important motivator across all segments, but particularly for those less engaged with sustainability and those in lower socio-economic groups. The energy report identifies cost as the single biggest driver of change in attitudes to energy and energy behaviour and highlights the importance of economy for all segments. The widely held and often accurate assumption that pro-environmental choices are more expensive (see section 2), means that the opportunities to promote the cost-saving benefits of pro-environmental behaviour are somewhat limited. In addition, the up-front costs and the perceived effort of some pro-environmental choices, such as the installation of insulation, means they are viewed unfavourably even if they save money in the long run.

6.6   However, the opportunities that do exist revolve around those actions that most effectively contribute to sustainable consumption, by focusing on reductions in

consumption, rather than just greener alternatives. For example, the most effective behaviour goal in energy is to get people to use less energy. Highlighting the tangible cost-saving benefits of these actions as a means of encouraging reductions in consumption is potentially a highly effective intervention for some segments.

Level of engagement with sustainability

6.7 Unsurprisingly, those who are more concerned about the environment and sustainability are more willing to engage in pro-environmental behaviour change. Across all projects, members of the more environmentally-engaged segments – GR, CWC and CC – were more likely to accept personal responsibility for their impact on the environment and more likely to take steps to reduce that impact; therefore knowledge and belief around sustainability is a motivator.

6.8 The finance report found that those most open to the idea of environmentally friendly finance were those already engaged with the sustainability agenda. Conversely, those who were not engaged with environmental issues and did not see themselves becoming so in the future, did not think investment in green products was likely and were cynical about the idea of environmentally friendly finance.

Life stage

6.9 Several examples emerged from the projects of how life stage can be a major motivator of sustainable behaviour. By far the most pronounced of these was the arrival of children and the way in which this impacts on the behaviour of parents. For many participants, having children made the future a far more tangible concept, making individuals more aware of how their behaviour may affect future generations. For example, young families (BC, CWC) in the transport project cited the arrival of children as the point when 'the future' becomes important.

6.10 The direct impact that having children has on parents' behaviour was also highlighted. The desire to feed children healthy food was a priority for parents across all segments in the food project and participants considered the likes and dislikes of their children while shopping, regardless of whether or not their children were present.

6.11 Participants in the leisure and tourism project felt it important to target information at children because they '*taught their parents'* (p. 43), while all groups in the energy project also prioritised the importance of teaching schoolchildren about energy. Within this group however, parents admitted that they did not teach their own children about pro-environmental behaviour. This suggests that – even if children were

educated more – its impact on parental behaviour may be limited[8]. More research may be necessary to understand fully the extent to which children influence their parents' understanding of environmental issues and their behaviour.

6.12   Life stage also impacts on free time, with the spare time associated with retirement allowing older participants the freedom to take public transport; a luxury they recognised was not afforded to those for whom time was more important. Older participants, who predominantly make up the WF segment, tend to be driven by economy and a desire to avoid waste, rather than ideology.

Quality

6.13   As previously discussed in section 2, there is a general assumption across the projects that sustainable options will in some way be of a lower quality than less sustainable options and, in these instances, quality can be interpreted as a barrier to pro-environmental behaviour. However, an important exception to this is the case of food, where sustainable options (organic, locally-produced and seasonal) are associated with higher quality.

6.14   As such, the purchasing of sustainable food (and also high quality meat) were aspired to across all segments, although only GR and CWC were prepared to pay extra. This emphasis on quality places food uniquely among the behaviours covered by the projects reviewed, as it is the only area of consumption where the additional tangible benefits of pro-environmental choices appeal widely to individuals and are perceived to increase quality.

The provision of information

6.15   There was clear evidence across the projects that the provision of information can be a powerful motivator of behaviour, as discussed in more detail in Section 4. However, it is important to recognise that participation in the research process and the persuasive nature of group discussion may also have influenced the attitudes and behaviour of participants.

Image

6.16   Because they view pro-environmental behaviour positively GR, CWC and CC attach a certain social status to being green, and to being seen - by their peers and others in society – to be making sustainable choices.

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[8] Previous research (Uzzell, 1994) concludes that children only influence the behaviour of parents if parents work with children in a democratic manner and establish dialogue at home that facilitates change.

Altruism

6.17   Across the projects, there was evidence that some GR and CWC are not only prepared to, but actually do make changes that involve personal sacrifices for the collective good. However, it is important to note that this is rarely perceived as sacrificial behaviour; pro-environmental behaviour is only perceived as a good thing if it does not negatively impact on lifestyle.

6.18   Benefits to the environment were recognised by some as an important motivator (though not the sole reason) for holidaying in the UK, while changes to leisure and tourism behaviour were seen as a 'worthy' and the 'righteous' thing to do. When considering energy behaviours, pro-environmental behaviour was only seen as a good thing if it did not impact on standards of living.

Health

6.19   The extent to which health motivates the purchasing of food suggests that it could be an important 'double win' to be highlighted across other sustainable behaviours. Across all segments, participants in the food project were motivated by a desire to eat healthily, whether it is by eating more fruit and vegetables, more fish, or a more varied diet. For more economically constrained segments (BC, LTR and CC), cost remained the primary driver, serving as a barrier to the purchasing of some sustainable options (e.g. organic food) and a motivator to others (e.g. seasonal food). The health benefits of sustainable alternative transport modes, such as walking and cycling, were also widely acknowledged, but were not strong enough motivators to outweigh barriers related to convenience and quality.

Enjoyment

6.20   The enjoyment and positive effect on wellbeing that people get from certain pro-environmental choices was evident across several of the projects, particularly within transport and leisure and tourism. Travelling by car was cited by some as boring and frustrating, while others 'feared' or 'endured' flying. In contrast, travelling by train was seen as enjoyable by many and there emerged a genuine desire among some participants to travel by train more and cars less. The enjoyment individuals gain from eating certain foods, which may vary according to tastes, plays an important role in food purchasing decisions, while enjoyment is also a major factor in determining holiday destinations or leisure activities.

Barriers to Pro-Environmental Behaviour Change

6.21   The most fundamental, overarching barriers to pro-environmental behaviour are the

specific barrier of cost and the much broader barrier of perceived impact on present lifestyle. Although some segments emerge as more willing to adopt pro-environmental behaviours than others, there is a general reluctance across all segments to make any changes that fundamentally impact on present lifestyles and standards of living. The different ways in which choices may impact on lifestyle, which can be identified as stand-alone barriers to pro-environmental behaviour, are discussed in depth below.

6.22 Presented below are the key barriers to pro-environmental behaviours to emerge from the five reviewed projects. Project-specific barriers are not discussed at length unless they were identified as particularly influential or insightful.

Cost

6.23 Across all projects, the most overwhelming barrier to pro-environmental behaviour is that sustainable options frequently are, or at least are perceived to be, more expensive. Whether participants were discussing the purchasing of washing machines, food or financial products, it was widely agreed that cost would have the greatest impact on purchasing decisions. Even GR and CWC admit that, when it comes to financing pro-environmental behaviour, they are unwilling to pay more unless there are clear additional benefits, or 'double-wins', that justify extra cost. The most striking example of this emerged in the Energy report, where even CWC and some GR strongly disapproved of green energy tariffs: '*Why should we pay more for the same thing?*' (pg29)

6.24 In the context of food purchasing, cost was specifically cited as a barrier to the buying of healthy food by the CC, and by all groups as a barrier to buying organic food and certified products. The cost of sustainable transport modes was identified as a barrier by participants.

Time and Convenience

6.25 Sustainable choices are frequently, or at least are perceived to be, less convenient. Examples are making meals from fresh ingredients rather than buying ready meals, or taking a train to a long distance destination rather than flying. Convenience was important to all participants in the food report.

6.26 Public transport was considered an inconvenient means of travel by many participants, while the convenience of flying was also cited as a motivator to holidaying abroad, especially for short breaks. Travelling with luggage and children is more convenient by car, as are holidays that involve visiting more than one destination. In most instances, the main reason that a choice is seen as inconvenient

is because it is thought to take longer, suggesting that time itself is a major barrier.

6.27 Tackling these two inter-related barriers involves two steps: determining whether a specific sustainable choice really is less convenient and then tackling the perception of whether the extra time or effort involved is acceptable.

6.28 In some instances, for example when considering the use of public transport over car use, it may be that for whatever reason a sustainable choice does take considerably longer. In the case of public transport, efforts can be taken to improve services and reduce any associated additional time or inconvenience.

6.29 In other cases, more fundamental shifts may be needed to change the way in which individuals perceive time and its use. 'Not having to be a slave to time' is stated as an objective by participants in the transport report, with older participants appreciating that their retirement freed them from the need to travel for speed. When a sustainable choice does take more time, efforts to encourage that behaviour should focus on the additional benefits that result from that additional time.

Quality

6.30 There is a perception across all projects that the quality of sustainable products is, in at least some way, inferior to non-sustainable alternatives. This is apparent within transport where the quality of public transport infrastructure is seen as associated with 'drudgery, delays and dirt', and the need for regular and reliable transport makes driving the only practical option for many.[9]

Variety and Choice

6.31 Variety and choice is aspired to and highly desirable but conversely, resented. Supermarkets are blamed for offering too much choice, with individuals feeling it is not their fault if they buy things that are made available to them. This lends some support to the concept of choice editing. There is also a feeling that people will not accept reduced variety, now that they have experienced it.

Entitlement

6.32 Closely related to the desire for variety is a barrier associated with 'entitlement' and the way in which people feel that they are entitled to their present lifestyles, whether it be through their everyday work or more. This is particularly true for older participants and the WF segment, who consider scarcity as a thing of the past and improved variety and access to variety as an indication of progress, wealth and

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[9] It is important to note that the transport research was not carried out in London, where public transport is of a recognisably higher standard than elsewhere in the country.

status. Across all projects, there is a strong sense that participants feel they are entitled to choice and variety, and that they are entitled to the personal freedom – away from government and industry intervention – that is being challenged. A more physical desire for freedom is also evident in the transport project, where participants favoured private transport because of the freedom and autonomy it granted.

6.33   In particular, participants were very strongly motivated by a sense of entitlement when it comes to holidays. Holidays are considered a right that participants earn through work and everyday life.

Habit and Inertia

6.34   Day-to-day behaviours that are habitual can be difficult to change because they tend to be followed automatically. Habit is referred to directly as a barrier for not buying more seasonal food and, indirectly, as a reason for not reducing meat consumption.

6.35   Related to the breaking of habits, general inertia can also prove a barrier to making one-off changes. Installing insulation, changing electricity supplier or moving to a new bank are seen to require substantial effort with no immediate tangible return.

Awareness, Knowledge and Information

6.36   Participants are frequently unaware of the environmental impact of their behaviour and, as such, unaware of the best way that they can reduce their impact or behaviour in a less damaging way.

6.37   Lack of knowledge prevents participants buying more seasonal food (cannot identify what is in season); more organic food (confusion about the health benefits and what constitutes organic); and certified fish (unsure about what certified means and how it can be identified).

6.38   Many participants do not make any links between their own lifestyles and the environment, and are unaware that their energy consumption or choice of transport mode has an impact on the environment. In the context of energy, participants report a lack of awareness about how much energy they use on a daily basis, how much they spend on fuel and where energy comes from. There is also confusion about the relative environmental impact of different transport types.

6.39   Of all the project areas, it was perhaps in the finance project that participants showed the least understanding of the environmental impact of their choices. Very few had thought about it and many had difficulty grasping how their investments could have an environmental impact.

6.40   In the leisure and tourism project, participants also displayed very little awareness of their behavioural impacts. There was little understanding of how leisure and tourism are linked to climate change or even what climate change is.   There was some awareness that planes were environmentally harmful, though the reasons for this were not understood, with participants generally emerging as unaware of the importance of transport mode choice.

6.41   Confusion also emerges as something of a barrier. Participants across all projects admit to being confused by conflicting sources of information or by their own inability to understand information about environmental issues.

6.42   A direct cause of a lack of awareness and a contributor to much confusion is the provision of information, or lack of it. In most cases, a lack of information emerged as a direct barrier to pro-environmental behaviour, but in some cases it was the provision of certain information that was to blame. For example, best before dates were highlighted by participants as a trigger for the unnecessary wastage of food, with many following the stated dates, despite suspicions that the food may still be edible. Further discussion of the role of information can be found in section 4.

Access

6.43   Consumers respond to what is in stock when shopping and are therefore limited to buying what is made available by suppliers. A lack of access to certain products or services emerges as a barrier to many of the pro-environmental behaviours discussed across the projects. In rural areas, participants were more likely to have access to locally produced, seasonal food, while other areas found a lack of access to such food was a barrier.

Intangibility

6.44   Large-scale and long-term threats that are not perceived to have an immediate affect on an individual, such as climate change, are more difficult to grasp than more immediate ones like terrorism or even local pollution. Participants in the finance report found it very difficult to fully grasp how their actions might have a wider global impact. This was also illustrated well in the leisure and tourism project where the impacts of tourism were widely cited as those occurring locally as a direct result of tourism.

Disempowerment

6.45   Across all of the projects, participants expressed concern that individual action was futile and would have little impact on global environmental problems. Environmental

issues are seen as too big for individuals to tackle, leading participants to shift responsibility onto others. In the context of finance, consumers felt they had no say in how money is invested, and were unable to see how their choice of financial service provider or products could have an impact. Participants in the leisure and tourism report saw no point in changing individual behaviour if others are not also committed to change, and felt it important to know that their actions were part of something bigger.

6.46 Across several reports a lack of multilateral action from other nations (particularly the US, China and India) was seen to make action at an individual level seem futile, while participants in the leisure and tourism project were disheartened at the thought of the UK acting alone and feared other countries free-riding.

Mistrust

6.47 Many people mistrust information they are given, particularly when the source is industry or government. Many doubt that the claims of green products are true and are highly suspicious of the motivations of both business and government. This is largely due to deep-rooted beliefs that both government and industry are motivated by money and the desire to increase profit, which made participants highly suspicious of any actions that were not seen to be profit-driven (See 3.9).

Image

6.48 Environmentalism, and therefore sustainable behaviour, is tarnished with an image, among many participants, of being eccentric and associated with 'hippies' or the affluent, who can afford the 'luxury' of caring about the environment. Aspirations for travel were also linked to image; for some participants how an individual chose to travel was seen as a reflection on the type of person they were. Coaches have negative public perceptions (they are often associated with older people and school travel), while many young people aspire to car ownership, which is seen as an indication of social status.

Taxation

6.49 Although there is considerable suspicion surrounding the motivations for green taxation, evidence emerged across a number of projects that the use of fiscal measures to curb environmentally-damaging behaviours would be supported if the hypothecation was evident. Some participants (particularly GR) are willing to pay green taxes, providing there is clear evidence of the revenue generated being invested in the environment.

Project-specific barriers

6.50   Finally, there are clearly a number of factors that motivate behaviour that are entirely dependent on individuals or simply way beyond the influence of Government intervention. Examples include the weather, which is cited as both a barrier and (perhaps somewhat surprisingly) a motivator to holidaying in the UK, and also affects transport decisions; the visiting of friends and relatives abroad, which motivates overseas travel; annual leave entitlement, which affects the duration of holidays; special offers, which were widely cited as a cause of people purchasing too much food; and a variety of motivators unique to choice of holiday destination (such as a desire for a sense of adventure).

7   The Behaviour Goals

Introduction

7.1   The participants in each project were asked to consider Defra's behaviour goals for that area of activities (see the tables on the following pages). There were differences in how acceptable they found the behaviour goals and how willing they were to carry them out.

7.2   Participants appeared more open to the energy behaviour goals, because they largely involved increasing efficiency, rather than forgoing anything. Most of the participants regarded a majority of the behaviour goals as acceptable and were willing to engage in them.

7.3   Most participants were sympathetic to the behaviour goals for sustainable finance and investment, but were only willing to engage in them provided that they were as good financially as non-green products. Participants assumed that all green products must be more expensive and lower quality than non-green products and would not believe it when they were told that was not so.

7.4   Attitudes towards the food behaviour goals were mixed, depending very much on segment. The perceived cost of sustainable food was a significant barrier for most segments. A low-impact diet was instead unacceptable to most for reasons of taste and culture, despite its other benefits. The only goal that there was general willingness to engage in was wasting less food.

7.5   In the transport project, participants showed some willingness to walk or cycle more. Enormous improvements were demanded from public transport. Low-carbon vehicles needed to be cheaper and have a sexier image. Driving more efficiently was acceptable to some.

7.6   There was willingness to engage in some of the sustainable leisure behaviour goals, but better facilities and public transport were demanded.

7.7   Tourism was the area where there was most resistance to the behaviour goals. Participants believed that day-to-day activities had a much greater environmental impact and in particular did not appreciate the relative environmental impact of flying. There was some willingness to switch from planes to trains within the UK if fares were lower. There was also some willingness to take short breaks in the UK rather than abroad.

7.8   The following section of this report discusses the behaviour goals in more detail, with particular emphasis on the patterns between segments.

Table 1: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Energy

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
Energy Efficient Products	+ All participants support but level of support dependent on segment. Greens, CWC and CC the most supportive - Cost a major factor in decision-making	+ If cost is kept low and comparable to less efficient alternatives, feasible to all	+ Greens willing; CWC if cost comparable to alternatives; WF if likely to save money; CC in the future; LTR perceive cost as constraint on doing it
Better Energy Management	Acceptable to all segments, but BC only motivated by cost savings	+ Acceptable to all groups	+ All participants widely supportive
Install Insulation	+ All groups in favour, except most BC who perceive it as too much hassle + Saving money the main motivator, though Greens and CWC support for environmental reasons	LTR perceive it as not applicable to them as live in rented housing	+ Greens and CWC willing for cost and environmental reasons; WF for cost saving; CC willing in future; most BC unwilling; LTR cannot as live in rented housing
Microgeneration	+ Greens, CWC and WF support. Some CC, BC and LTR in favour, but not all	+ Greens, CWC, WF and some CC consider goal feasible - BC and LTR see goal as unfeasible	+ Greens, CWC and WF willing (or at least interested). - CC unwilling BC and LTR – would have to be done for them
Green Energy Tariffs	- Surprisingly little support. Only some Greens willing to pay more for environmental reasons - Most see goal as costing more with no tangible personal benefits	- Only some Greens consider this feasible	- Some Greens willing, but majority of participants unwilling

Table 2: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Finance and Investment

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
Investment with green consideration, via fund manager	- Difficult for some to see how investment can benefit environment + LCA of product required	+ If independently regulated to ensure reliable green claims	+ Willing if financial performance equal to non-green alternative
Investment of pension in green companies, via fund manager	- Difficult for some to see how investment can benefit environment + LCA of product required	+ If independently regulated to ensure reliable green claims	+ Willing if financial performance equal to non-green alternative
Savings account	- Difficult for some to see how investment can benefit environment + LCA of product required	+ If independently regulated to ensure reliable green claims	+ Willing if financial performance equal to non-green alternative
Child trust funds	+ most positively received +would need to demonstrate strong financial returns + LCA of product required	+ ethical funds already chosen by some parents	+ Willing if financial performance equal to non-green alternative
0% interest loans (e.g. for microgeneration)	+ Acceptable, especially to affluent + LCA of product required	- Less feasible for lower incomes; 'money still has to be repaid' Government would need to provide this as no market incentives for financial institutions to do this	+ Willing if financial performance equal to non-green alternative
Climate friendly car insurance	+ Acceptable to some but LCA of product required - Others less accepting: i) See offsetting as 'quick fix'; ii) legitimises pollution		+ Willing if financial performance equal to non-green alternative

Table 3: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Food

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
Low impact diet	**+** Desire to eat more fruit and vegetables, and better quality meat; some willing to trade quantity for quality **-** Dependant on how ingrained eating meat is in diet of individual. Only acceptable to some GR and CC.	**+** Most recognise they *could* adopt lower impact diets + GR most likely; CC recognise cost benefits	**-** General reluctance among participants; seen as interventionist and counter-cultural; no recognisable personal benefits. + Willing to trade meat quantity for quality
Waste less food	+ Did not contradict participants' aspirations. Acceptable to all sectors.	+ Participants accept ability to meet this goal	+ Cost motivations for LTR, BC and WF + GR, CWC and CC – cost and tackling issue
Certified fish	+ Acceptable to Greens and CWC for health reasons.	- No perceived need for participants to change behaviour and meet this goal - Higher cost a barrier except for GR and CWC	- General unwillingness among all sectors apart from CWC and GR.
Seasonal/local food	+ Corresponds with aspirations associated with taste, health, variety, local production etc. + Desirable for CWC and CC (limited by cost)	+ Already practiced by GR and those in rural areas - Access barrier to those in urban and suburban areas	+ GR and CWC most receptive to change, and CC supportive.
Increased organic	+ Links in with some aspirations re: quality and health; seen as tastier and supportive of local farmers	+ GR and CWC willing - Not perceived as feasible because of cost barrier by other segments	- Some scepticism about claims, but general support if cheaper. GR and CWC most willing.

Table 4: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Transport

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
Walk or cycle for trips of less than 3 miles	+ Walking short distances might be a realistic possibility - 3 miles felt too far for most	- Safety, time and image main barriers	+ Health benefits a motivation + Requested more cycle lanes, more safe areas to park, more time allowed from work - Needs improved image
Switch to public transport	+ Acceptable to some if a significant number of changes made	- Must be more frequent, cheaper, more flexible, more direct, less crowded and dirty	+ Some support, but required changes probably unrealistic[10]
Buy efficient/low-carbon vehicles	+ Acceptable if no more expensive than ordinary cars and a range of models	- Barriers related to variety and image. Need to be made 'sexy'	- Seemed unlikely participants would change their perceptions and seek out such vehicles
Drive more efficiently	+ Once benefits of driving more efficiently understood, see as a simple and easy adjustment to make	+ Benefits have to be communicated clearly - Needs to be enforced by law	+ Greens, CWC and older drivers most willing.
Switch car fuel (e.g. from petrol to biofuel, hybrid, electric or LPG)	- Hybrids considered too expensive and not enough choice of model	- Barriers are cost and lack of choice - Availability of fuel a barrier to biofuel and LPG	+ May be willing if cost, choice and fuel availability addressed

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[10] Again, important to note that the transport research was not carried out in London, where public transport is of a recognisably higher standard than elsewhere in the country and, as such, willingness to switch may have been higher.

Table 5: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Leisure

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
Use of nearby leisure facilities	+ Reduced cost , convenience and ease of access (walking) make local facilities attractive - Environment not seen as acceptable motivator	- Not always available locally - Local facilities need to be high quality; good information needed +Some participants enjoy 'sense of achievement' at trip to facilities; makes visit seem more satisfying	+ Participants open to spending more time at local facilities, especially if better facilities provided
Travelling less often /combining travel	- Travelling less often not favoured; participants' travel already restricted by cost + Combining travel into longer trip would 'make a day' of several smaller trips	- Combining travel more feasible than less travel, unless coupled with provision of more local services + Multipurpose venues supported	- Unwilling 'for the sake of the environment' but could emphasise other benefits – saving money; health etc
Using cars less	+ Saving money makes this acceptable to many; also seen as quicker, more relaxing; fun (esp. children); part of experience; healthy - High cost of trains major restriction esp. for families (children pay full fare from young age) - Time consuming and inconvenient; some safety issues	+ Better service provision and improved safety could address non-cost issues + Need to address cost to families (Provision of free travel for under-16s / better information about family railcards etc)	+ General support if services improved and cost of public transport reduced
Choosing more sustainable activities	+ Activities seen as sustainable – low impact, close to nature etc, - generally very popular + Health benefits of sustainable activities widely acknowledged	- Popularity of non-sustainable activities. Shopping cited as major 'leisure activity' + Potential to modify current behaviour and combine with other behaviour goals – e.g. increased shopping at Farmers markets as leisure activity	+ Willing to modify existing behaviour with greater consideration to the environment… - …. But some resistant to change on solely environmental grounds

Table 6: Acceptability, Feasibility and Willingness to Accept Defra's Headline Behaviour Goals for Sustainable Tourism

	ACCEPTABILITY	FEASIBILITY	WILLINGNESS
UK as holiday destination	- Does not offer activities and experiences that some participants seek while abroad, or guarantee weather + Some recognise environmental benefits + Convenience a factor especially to those with children. For some, would still provide change from everyday life that they seek in a holiday - Some perceive UK holidays as 'thing of past'	+ Feasible as alternative to short breaks abroad, but not feasible to most as destination for longer holidays - Weather a motivator for many - Cost of holidaying abroad cheaper – eating out in evenings etc. - Some participants seek activities that cannot be found in UK	Mixed. Some recognise environmental and convenience benefits and would consider UK short breaks rather than breaks abroad - Most unwilling to give up longer holidays abroad
Travelling less often / combining travel	- Varies. Support for longer holidays (allow participants to travel further; or to more expensive destinations) but not for reduced frequency	- Few suggestions of how this could be made feasible. Short breaks provide 'something to look forward to'	- Strong opposition to travelling less for sake of environment, though more willingness to combine travel
More sustainable travel methods	+ Train potentially most acceptable if high costs tackled + Enjoyment a factor for many. Train seen as comfortable and pleasurable, but high cost major barrier	+ Highly dependent on addressing high cost of train, relative to low cost of flights + More railcards / incentives	+ Willing if cost reduced of travel within UK, and if services improved
More sustainable activities	+ Interest in nature, sense of adventure and provision of 'change' from everyday life		Not discussed

Methodological differences between the projects

7.10   It is important to understand that because of methodological differences between projects, the patterns observed are not entirely equivalent. Two of the projects, food and household energy, put people all belonging to the same segment together in their focus groups. The finance project did not segment participants, although there was an attempt to retrospectively segment them based on demographics and what was said in discussions. The leisure and tourism project purposely mixed people of different segments together in its focus groups then retrofitted to the segmentation model in a similar way to the finance project. The transport project instead held deliberative events, putting people belonging to the same segment together in groups, but also allowing them to interact with people belonging to other segments during the event.

7.11   The projects that found clear patterns between segments were food and household energy. In retrospect, it seems likely that being placed in focus groups with people belonging to the same segment (as in the food and household energy projects) created a discussion among more like-minded people that expressed the thinking of that segment more forcefully. For this reason, it is these projects which are focused on when discussing segmentation.

7.12   The project researchers did not feel that the segmentation in the transport project and the leisure and tourism project was achievable. Being in a group with people divided between all the segments (as in the leisure and tourism project) did not seem to lead to discussions where the characteristics of the segments were shown clearly.

7.13   It can be argued that single-segment focus groups gave better results because they did show clear differences between segments. On the other hand, social dynamics of the situation may have exaggerated the characteristics of the group. The former interpretation seems more likely as there were clear differences between groups in the questionnaires used at the recruitment stage.

7.14   The leisure and tourism project also explored geographical differences between different regions, between urban and suburban (leisure groups) and based on the size and proximity of airports (tourism groups). The most significant difference observed was that participants from the Brighton groups appeared to be significantly more aware of environmental issues than those in other groups. Conversely, the groups in the North of England appeared to be more sceptical about environmental issues than the others. The food project also looked for geographical differences and found that rural groups were significantly more knowledgeable and concerned about environmental issues relating to food than the equivalent urban groups.

Analysing the behaviour goals by segment

7.15   It is only possible to make clear statements about the different segments for the food and household energy projects. There are some differences between these two projects in the patterns of the segments' responses to behaviour goals, indicating that the motivators and barriers to behaviour goals will be different according to different areas of life. However, there were significant similarities in terms of what were the most important motivators and barriers for different segments.

7.16   It is easiest to see the differences in motivators and barriers for the segments by analysing the results for the behaviour goals in those two areas, starting with the goal(s) that received least support within the projects and working through to the goal(s) which received the most support.

Green energy tariffs

7.17   GR are the only group that are prepared to engage in almost every behaviour goal. However, not all will commit to all the behaviour goals set. Some GR, along with all the members of the other segments, were not prepared to take up green energy tariffs as they were reluctant to pay more. The interesting feature of this behaviour goal is that it involves voluntarily spending more money for a service already provided that cannot be perceived as a personal benefit except, perhaps, the warm glow of virtue.

Lower impact diet

7.18   The behaviour goal that was almost as challenging was adopting a lower impact diet, for example one replacing animal protein with fruit and vegetables. Some GR were prepared to do it, but members of other groups were not, except for some CC, who saw money-saving benefits. What is interesting is that in addition to offering environmental benefits, a lower impact diet has health benefits and potentially financial benefits, yet most participants were still reluctant to adopt this goal. It is notable that even CWC were not keen to change to a lower impact diet. One reason was that changing diet was perceived as a sacrifice in terms of taste. The goal also suffered because of negative attitudes towards vegetarianism, which was seen as counter-cultural and contrary to mainstream British culture (meat and two veg). What is more the WF, BC and LTR segments admitted they lacked the resolve to make any changes towards a healthier diet, suggesting that for these segments long-term health is not a powerful motivator. Even GR, though they were prepared to eat less meat, were mostly not prepared to consume less dairy products. There is reluctance to change diet, even though there may be personal benefits from doing so.

Buying certified fish

7.19 Buying certified fish was also unpopular. Both GR and CWC were prepared to adopt this goal, but the other groups were not because of increased cost. Discussion centred around increased consumption of fish, which was perceived by participants to have health benefits. However this behaviour goal appears to have been misinterpreted; it does not aim to increase consumption of fish but rather to ensure that fish is sourced from sustainable fisheries. If consumption of fish increases, because it is certified as sourced from sustainable fisheries, total fish demand goes up, leading to increased pressure on uncertified unsustainable fisheries. Rather, the goal aims to encourage a switch from purchasing fish that would have been bought anyway, from uncertified fisheries to certified fisheries.

Buying organic

7.20 Buying organic was a goal that all segment groups were sympathetic to, but one that only GR and CWC were prepared to adopt. Organic food was widely perceived to be higher quality, healthier and tastier, but the other groups were not prepared to pay more for it.

Buying seasonal and local produce

7.21 Encouraging the consumption of seasonal and local produce appealed to CC in addition to GR and CWC. Indeed, many GR and consumers in rural areas were already buying seasonal and local, which was perceived as higher quality, healthier and tastier, but cost was less of a barrier than for organic food, with the result that CC were prepared to adopt this goal.

Micro-generation

7.22 GR and CWC were interested in micro-generation for both environmental and cost reasons. CC were sympathetic, but were not in a position to take it up. WF and some BC were attracted by the idea of saving money but were unlikely to act. The BC and LTR who were willing, were *passively* willing that somebody else do it for them. A more general barrier was that micro-generation was not something that participants were generally aware of while others had a negative perception of microgeneration based on media reports about home wind turbines.

Buying energy-efficient products

7.23 Buying energy-efficient products was a more popular behaviour goal. GR already incorporate energy consumption in their purchasing decisions, and CWC appear to

use the energy rating to choose between two otherwise equivalent products. CC would take account of the energy use of products in future. *Initial* cost is by far the biggest driver for WF, LTR and BC. WF would only be interested if savings on running costs outweighed initial cost differential. BC regarded it as a low priority. LTR emphasised immediate cost constraints.

Insulation

7.24   Insulation was the energy behaviour goal with which participants were most familiar. GR and CWC had both cost and environmental motives for installing insulation. CC also had both cost and environmental motives, and would consider installation in future when they had homes of their own. WF were mainly interested in cost savings and their interest depended on the payback period. Some BC were interested, but many felt the effort was too great. LTR said it would not be possible unless it was done for them.

Better energy management and usage

7.25   Better energy management and usage in the home was a highly accessible goal. The WF and LTR were already restricting the amount of energy they used and were keen to learn how to reduce it further. Unsurprisingly, the GR and CWC had already adopted these behaviours or were willing to. Many CC were not particularly interested because they did not pay energy bills. BC were least willing because they have little motivation and regarded it as a hassle.

Wasting less food

7.26   The behaviour goal that there was most willingness to take part in was wasting less food; all segments were willing to adopt this goal. While WF, BC and LTR were mainly interested in cost saving, GR, CWC and CC were attracted both by money saving and tackling the environmental issue. Two barriers were identified: conservative best-before dates and supermarket 'Buy One Get One Free' offers.

Analysing behaviour goals in the other projects

7.27   There was greater *reluctance* to engage in behaviour change for transport and for leisure and tourism. In both projects, participants said that they would find it easier and preferred to make changes in other areas, such as energy consumption.

Transport behaviour goals

7.28   WF were found to be open to sustainable modes of transport and were concerned about the effect of CO_2 emissions on the environment, with their grandchildren's

welfare cited as the biggest worry. Having more time than other groups, WF were least likely to have a car and most likely to use public transport. Like most of the other segments, GR transport attitudes were shaped by reliability and personal control. However, they were less absolute about these concerns and were more willing to consider choosing different modes according to the nature of the journey. CWC transport attitudes were slightly more influenced by lifestyle than GR. Health benefits of the alternatives were ranked highly and that may explain why CWC were more willing to consider walking and cycling.

Leisure behaviour goals

7.29   The leisure and tourism project found that segments had very little effect on support for leisure behaviour goals, that personal circumstances and location were far more important. The only pattern due to segmentation was that WF tended to support combining leisure activities.

Tourism behaviour goals

7.30   There were some patterns of segmentation for tourism behaviour goals. Choosing UK holidays was related to personal circumstances, preferences and to segment. Some people across all segments enjoyed UK holidays and were open to taking more. For some people, particularly those with young children, ease was a priority and UK holidays were perceived as easier. Some GR and CWC were trying to avoid flying for environmental reasons. Typically, although not always, they did not regard that as a sacrifice, rather as a double win.

7.31   Conversely, many people were resistant to UK holidays, although people across all segments were willing to travel in the UK for short breaks. Some people felt that overseas travel was a 'right', or that individuals or countries taking action was ineffective. Others had practical objections, such as that UK holidays were more expensive. Many people wanted new experiences overseas. Those with environmental concerns (GR and CWC) who did not want to concentrate on UK holidays tried to resolve the conflict with their principles other ways. They variously said they would travel without flying, make a point of eating out at their destination so tourism benefited local people, offset the carbon emissions, or just feel guilty about it. They said they would be prepared to accept other behaviour goals to compensate.

7.32   Support for sustainable travel methods was also related somewhat to segment. People chose flying over other travel methods for cost, speed and convenience. Personal circumstances and location were the main factors in choice of travel mode. People who focused on the positive side of train and coach travel tended to have environmental concerns (GR, CWC and CC). However, many participants in these

segments did not see benefits in trains or coaches for holidays.

7.33 There were no patterns by segment for combining holidays or choosing outdoor activities on holiday. Combining holidays was opposed by all segments. Some people liked outdoor activities because they were a change from everyday lives indoors, or because they were interested in nature, or for adventure, like skiing. However, there was no pattern by segment.

Finance

7.34 It appears that for finance the factors are much simpler and segments may be less important. It was observed that people who seemed socio-demographically to represent the profiles of the segments GR, CWC and CC (the more educated) were concerned about environmental issues, while the others were not. The fundamental problem was that most of them, like the others, assumed that green financial products will have worse performance than non-green products. Unlike with energy-efficient light bulbs, being told that is not the case by other members of the focus group was not convincing. Additional problems were that many people could not understand how investment could benefit or harm the environment and that there was a great deal of scepticism about the reliability of green claims from the financial services industry.

Key motivators and barriers for the segments in relation to the behaviour goals

7.35 The pattern of main motivators and barriers among the segments was very similar for food and energy, although participants felt that the food behaviour goals were generally more difficult to achieve than the energy behaviour goals.

7.36 Convenience is a much more important factor for leisure and tourism and for transport. In those areas, people in all segments were more reluctant to engage in behaviour change. However, some people in all segments were prepared to adopt some of the behaviours *if it suited their personal circumstances*. The analysis below identifies the key factors for each segment in order to predict they way in which the different segments may react to other behaviour goals.

7.37 **Greens** are the only segment which has, at least some, members prepared to make a contribution for the sake of the environment alone, without any personal benefit. The reluctance of some GR to pay extra for green energy, and of many to holiday in the UK, shows that there are limits to the behaviours they are prepared to adopt. All GR are prepared to spend more on greener products if there is some other benefit associated with it, such as health, better quality or lower running costs. The

convenience of car and air travel means that most GR are reluctant to give them up, despite their environmental concerns. A few GR were avoiding flying partly for environmental reasons, but others were opposed to that and said that they would prefer to change their behaviour in other ways to compensate. One feature that distinguishes GR as a group from CWC is that GR treat environmental factors as important, while for CWC these are secondary. A GR will choose an appliance with energy efficiency as an important criterion, while for CWC other factors, such as aesthetics, are given higher importance. GR are also prepared to consider making lifestyle changes, such as changing diet, for environmental reasons although there are limits e.g. stopping flying; conversely, CWC are not prepared to compromise their lifestyle. GR is the group that is most strongly motivated by environmental issues, but much more so in the home than for transport or leisure and tourism.

7.38   **Consumers With a Conscience** are the only group apart from GR that are prepared to spend more on greener products, although they need to be persuaded that there is some other associated benefit, such as convenience, health, better quality or lower running costs. What they are reluctant to do is sacrifice anything about their lifestyle. CWC are motivated by environmental concerns, but this is less important than other factors such as convenience, taste or aesthetics. Interestingly, a few CWC were avoiding flying for a combination of reasons, including environmental motivations.

7.39   **Currently Constrained** are the third group that considers environmental issues. However, for this group lack of money is a concern and therefore adopting behaviours that are more expensive is currently unacceptable and unachievable. CC are possibly prepared to change their lifestyle, but not if it involves spending more.

7.40   **Wastage Focused** do not factor environment into their lifestyles, according to the findings of the energy and food projects; in fact, they have a rather negative attitude towards environmentalism. The thing that most strongly motivates them to change behaviour is saving money. However, WF are also quite conservative and reacted negatively to the idea of eating less meat, even though it could save them money. They are not strongly motivated by health compared to GR, CWC or CC. However, WF were interested in micro-generation if it could save them money, despite expectations that they would regard it as too eccentric. It appears that they are not prepared to make significant lifestyle changes, but they are not completely closed-minded.

7.41   **Long-Term Restricted** do not consider the environment either and also have a rather negative attitude towards environmentalism. They are short of money and can be motivated by the idea of money saving. However, like WF, they are not prepared to make significant lifestyle changes such as eating less meat, even if it would save

them money. They are not strongly motivated by health. They differed from the WF in that they were more sceptical about micro-generation.

7.42   **Basic contributors** can be distinguished from the other groups by their lack of motivation. Unlike WF and LTR, who can be motivated by saving money, BC are difficult to motivate. They tend to regard doing anything like installing insulation as too much hassle. They are not motivated by the environment and have a rather negative attitude towards environmentalism. They are not strongly motivated by health either. The only behaviour goal that they were in general prepared to do anything about was wasting less food.

7.43   Overall, there appears to be a hierarchy of action:

- Only Greens may do something solely for the sake of the environment.

- Only Greens and Consumers with a Conscience are prepared to spend more money on greener products, but Consumers With a Conscience and some Greens require a more expensive green product to also have some other benefit such as better quality or being healthier.

- Only Greens and Currently Constrained are open to significant lifestyle changes (and only Greens are able to make most of them).

- Only Greens, Consumers With a Conscience and Currently Constrained are motivated by environmental considerations.

- Only Greens, Consumers With a Conscience and Currently Constrained are motivated enough by health to change their behaviour.

- All groups are motivated by saving money, but particularly Wastage Focused, Long-Term Restricted and Currently Constrained.

- Basic Contributors are extremely difficult to motivate to do anything.

8 Implications of the research for Defra's Environmental Behaviours Framework

Introduction

8.1 Defra's Environmental Behaviours Strategy Scoping Report highlights potential interventions that are considered the 'most likely' to influence behaviour. Drawing on evidence from all of the reports, these are reconsidered below.

Domestic Energy and Water Use

8.2 *More incentives for micro-generation.* The uptake of microgeneration is likely to be led by GR, CWC and WF who are all amenable to the idea of installing microgeneration, although the provision of both information and incentives will be necessary. Defra should consider targeting initial intervention at these three segments.

8.3 *Linked promotion of smart metering / billing / labelling/ product standards.* The desire for participants to receive consistent messages from government lends support to the linking of a number of interventions under a common theme. The reports suggest that the cost-saving benefits of any energy-related measures should be emphasised, while the success of the energy audits highlights them as a useful means for encouraging the promotion of such measures, across all segments.

Transport

8.4 *Voluntary agreements on cutting business air travel.* It was clear from the leisure and tourism report that a much firmer commitment is needed from government on air travel, including visible government efforts to reduce growth. There was considerable mistrust among participants of all projects towards both government and industry. Combined efforts to tackle the contribution of business travel to carbon emissions would lend support to efforts to reduce domestic air travel, by leading by example.

8.5 *Widen VED bands.* There was a general assumption in the transport report that emissions would not differ dramatically between vehicles, indicating people are not aware of the relevance of VED bands. This is supported by evidence elsewhere in the report, where participants describe their disappointment when realising the high fuel consumption of new cars after purchasing. In contrast, participants were supportive of government action to emissions-related taxation. Defra should be aware that any intervention focused on VED bands may be effective and supported,

but would not necessarily provide the visible signs of government commitment that the public seek.

8.6   *Public transport, especially bus provision outside London.* An essential intervention. Poor infrastructure is a major barrier to the wider use of public transport, as evidenced in both the transport report and the leisure and tourism report. The leisure and tourism researchers stressed that participants genuinely wished they could use public transport more for long distance travel, but that it was just not feasible at present. Reducing emissions from cars is not acceptable or feasible until people feel that public transport provides a genuine, comparable alternative. This is particularly true in rural areas.

Food Waste

8.7   *Voluntary agreements to reduce food waste.* Supermarkets were seen by participants in the food project as playing a vital role in enabling people to change their behaviour[11], with government providing further guidance and possible regulation. If Defra want individuals to reduce the food they waste, it is essential the public sees industry playing its part.

8.8   *Visible action on packaging.* An important intervention. Packaging is a particular visible area of waste that people encounter on an almost daily basis when shopping. Across all segments, the food report highlights exasperation among individuals at the amount of packaging associated with food and the extent to which they feel disempowered to do anything about it. It is difficult for individuals to believe the food industry is committed to reducing its environmental impact when packaging continues to noticeably increase.

8.9   *More consumer advice on food recycling and composting.* Provision of information about food wastage had a greater impact on the willingness of individuals to change than any other information provided during the food project. Participants were shocked by the sheer quantities involved and, in follow up interviews, were able to recall much of the information, leading the food research team to conclude that waste messages 'stick'. Although the recycling and composting of food waste was not specifically discussed, it is evident that emphasising a reduction in food waste could be effective, particularly using LCA findings.

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[11] During the researchers' workshop, the food project team noted that there had been a significant amount of press coverage of the earnings of supermarkets' CEOs prior to the research, making the power of supermarkets a particularly salient issue.

Food

8.10 *Improve product labelling.* Although there were areas where more labelling was supported (e.g. electrical products like computers), food was not one of them. Individuals felt that the abundance of information faced already when shopping could reduce the value of further product labelling. A broader campaign of education was recommended as an alternative.

8.11 *Define 'local'.* Findings from the food report show noticeable geographical variations in the interpretation of 'local', with those in rural areas much more likely to see local as immediate locality (village, town etc). In contrast, non-rural participants were more likely to interpret local as meaning of British origin. The real question here is how much the definition of 'local' really matters; Defra's recent 'Shopping Trolley Report' suggests there is little difference in the carbon impact of food related to transport, apart from air-freighted food. As long as 'local' is not seen to involve flying, how important is it?

8.12 *Promote healthy eating as a lower impact diet.* Health should be used to promote all of the food purchasing behaviour goals (organic, local, seasonal), not just a lower impact diet. There is very strong evidence in the food report that health is a key consideration across all segments, and the primary issue for many.

8.13 *Link environment with nutrition in school food.* Although this intervention was not specifically addressed, the food report suggests that children's tastes have a major influence over parents' purchasing decisions, as does health.

Cross-cutting

8.14 *Home environmental audits, with fiscal incentives.* The energy report showed that energy audits were an excellent way of changing behaviour and, although the potential impact of the wider research process itself should be borne in mind, this does suggest that wider environmental audits could be equally successful. Support for fiscal measures was also evident across the reports of both the finance and leisure and tourism projects, providing they are equitable and the transparent hypothecation of revenue takes place.

8.15 *Assurance / accreditation.* Lack of trust in both government and industry means independent assurance and accreditation of pro-environmental choices very important.

9 Recommendations

Introduction

9.1   A number of recommendations emerge from synthesis of the findings of the projects.

9.2   It is apparent that there is a need for government action to raise awareness and promote sustainable consumption. The government should take the initiative, using regulation and choice editing. Poor transport infrastructure and high costs were repeatedly cited as a barrier for adopting more sustainable transport behaviours, leading to an immediate need for government to improve transport infrastructure. Information campaigns to raise awareness about environmental issues such as climate change are still necessary. Messages from government should be consistent. Because of lack of trust in government, campaigns should be in association with independent organisations. The campaigns should also emphasise the impact of personal lifestyles, challenge mistaken assumptions and misconceptions about sustainable consumption and try to make it normative behaviour. There would be value in information campaigns that seek to dispel the negative associations that some segments have with environmentalism. Personal environmental audits should be investigated as a way to overcome such misconceptions. Cost savings and health benefits emerged as powerful motivators from the research projects, suggesting that efforts should be made to emphasise these 'double wins'. It is necessary to systematically remove the excuses people give for inaction. There should be future longitudinal research to study which interventions are most effective in the long term.

9.3   These recommendations are described more fully in the rest of this section.

Government and industry should take the initiative

9.4   Participants thought that it was the responsibility of government, industry and retailers, rather than consumers, to take the lead. Although there is mistrust of all three, participants look to the government to provide information, to regulate industry and to provide financial incentives to encourage pro-environmental behaviour. In turn, industry has to be seen to be committed to the same long-term aims as those being encouraged of consumers. For example, it will be difficult to encourage consumers to reduce waste when manufacturers are seen to be increasing, rather than making efforts to reduce, food packaging. Many individuals currently feel that Government is unfairly placing the onus of responsibility for change on them; visible, collective action by all sectors of society is vital to motivate change.

Defra should seek to work more closely with industry and retailers to facilitate change and to ensure all such efforts are fully communicated to the public.

Regulate and choice edit

9.5   Participants assumed that there was a lot more regulation and choice editing already taking place than there actually is. For example, they thought that all modern electrical appliances were more energy efficient that the ones they were replacing. The participants also supported greater choice editing, for example to remove the most environmentally damaging foods from shops. Though they are wary of excessive intervention by government, the fact that these levels of regulation are already assumed suggests that people would be receptive to such measures if introduced.

Defra should work with manufacturers and retailers to remove the most environmentally harmful products from the market, for example energy intensive electrical products.

Similarly, Defra should work more closely with producers and retailers to ensure that sustainable products, such as sustainable foods, are more widely available to all sections of society.

Labelling

9.6   Mixed messages emerged from the Public Understanding reports related to labelling. Whilst participants in the energy project favoured the expansion of the existing energy efficiency labelling scheme to other electrical products, those in the food project rejected more food labelling. It is recognised however that for any labelling schemes to work, independent organisations should verify the schemes in the way the Energy Saving Trust currently does for energy labelling.

Government should work with the EST and other representatives from the electrical retail industry to consider the wider use of existing energy efficiency labelling.

Improve infrastructure

9.7   For transport, and leisure and tourism, there were many requests for improvement in public transport infrastructure. The high cost of train fares and highly restrictive advance ticket rules were said to be an important barrier to train travel for leisure and tourism.

We recommend that Defra work closely with the Department for Transport (DfT) and other transport agencies and providers, to tackle the infrastructural and monetary

barriers that currently prevent the wider use of public transport. New rail ticket pricing schemes should be reviewed to ensure they are not adversely affecting the use of rail.

Make messages consistent

9.8   Inconsistent messages create confusion. Many of the mixed messages come from the media, but inconsistent government policies also confuse the public. For example, there remains confusion about whether or not organic food is healthier or better for the environment, and uncertainty about whether public transport is markedly less damaging to the environment than private forms of transport. While this is sometimes associated with the provision of conflicting information, it can also be attributed to government and industry being seen to 'saying one thing and doing another'.

We recommend that Defra work more closely with other government departments to ensure cross-departmental consistency on all pro-environmental messages.

In view of the evident lack of trust in government, we recommend that consideration be given to how pro-environmental information campaigns can involve independent third parties where appropriate.

Challenge climate change confusion

9.9   Coming out of the above finding is a very specific need for Defra to address the continuing confusion surrounding climate change. Across the reports, participants remain uncertain about the scientific evidence that supports human-induced climate change; and this confusion is often compounded by inconsistencies in government policy. For example, it was suggested that if aviation really were a significant cause of climate change, the government would not support expansion of the industry. On a more local level, the personal behaviour of senior politicians, for example in their choice of car or holiday, is also important, as they are expected to lead by example and accused of hypocrisy if they do not. There is also a need for more consistent information provision that acknowledges the overwhelming evidence that climate change is taking place and that it is caused by human activities, and explaining how individual lifestyles contribute to it and other environmental problems.

We recommend that Defra work closely with the DfT and the Department for Business, Enterprise and Regulatory Reform (DBERR) to ensure consistent messages regarding the need to decrease air travel.

Government ministers and employees should make flying a final option in travel choice. Defra should work with government procurement bodies to ensure these standards across all departments.

Defra work with wider industry procurement bodies, for example car fleet managers and business travel providers, to ensure the greenest procurement options and use of technology.

The government should consider convening an independent body to act as the primary source of climate change information to the media. The body, similar to a national equivalent of the IPCC, could be made up of representatives of a variety of independent, publicly-trusted stakeholder groups and would ensure consumers are given consistent, un-refuted information about climate change.

Defra should also seek to work more closely with broadcasters and the media to ensure programmes that discuss climate change do so responsibly.

Challenge assumptions and misconceptions

9.10   Pro-environmental behaviour is often assumed to involve sacrifice, higher cost and poorer quality. The energy focus groups and audits showed that assumptions about energy-efficient light bulbs could be successfully challenged. However, the energy audit was not so effective at challenging assumptions about cavity walls. In the finance research, the perception that environmentally-friendly finance would have worse performance was strongly held and resistant to change. These assumptions must be challenged if people are to willingly adopt pro-environmental behaviours.

9.11   There are also widespread misconceptions related to behaviour and its impact on the environment. Among the most important observed are that many people believe that everyday activities have a far greater environmental impact than occasional ones such as flying, and that cavity walls need to be kept empty to 'allow a house to breathe'. Further research would be useful to identify any other widespread assumptions and misconceptions.

The Government should consider further large scale media campaigns and demonstration projects specifically aimed at tackling the known assumptions and misconceptions that members of the public hold about pro-environmental behaviours.

Improve the image of sustainable consumption

9.12   The projects found that the WF, LTR and BC segments had a negative image of environmentalism. The GR, CWC and CC segments had positive images of environmentalism, but even they were reluctant to be associated with dark green approaches and the negative, sacrificial connotations associated with such a lifestyle.

There is a widespread association of greener lifestyles with sacrifice, higher cost and lower quality. Information campaigns should seek to dispel those negative associations. Pro-environmental behaviours should be presented as normative and common sense, with practical examples to make it seem 'normal'. It may be possible to reduce negative associations by emphasising other reasons for making pro-environmental choices besides environmental concern. Further research is necessary to determine the impact that role models and trendsetters can have on wider social norms.

Defra should consider more work with marketing and advertising professionals to investigate the image of pro-environmental behaviour and how this can be improved.

Investigate environmental audits

9.13 The success of the energy audits in persuading participants to take action suggests that giving people personally tailored information and advice is effective at motivating them. Interventions should be developed further to attempt to overcome deep-seated misconceptions and develop direct engagement.

Defra should continue to investigate the possibility of introducing household environmental audits.

Emphasise cost savings

9.14 Cost saving appears to be a powerful motivator to persuade members of all groups to change behaviour. This indicates that green taxes or subsidies could be effective at motivating people to make more environmentally-friendly consumption decisions. Information campaigns should, where applicable, highlight the cost-saving benefits of pro-environmental choices. Further research would be useful to understand any possible 'rebound effect', whereby the money saved by some pro-environmental choices could be redirected towards other environmentally unsustainable behaviours.

Emphasise health benefits

9.15 Health benefits emerge as another powerful motivator and the key determinant in some behavioural decisions. It was observed to be particularly powerful for GR, CWC and CC in the area of food, while in transport, it appeared to be a motivator for most segments but particularly CWC. Efforts should be made to emphasise the health benefits of other behaviours, such as walking and cycling.

We recommend Defra work with the Department for Health (DH), the Food Standards Agency, and other food agencies to encourage positive environmental behaviours and emphasise the health benefits of sustainable choices.

Similarly, it is recommended that Defra work with DfT, Department for Culture Media and Sport (DCMS) and other relevant bodies to highlight the health benefits of sustainable choices related to transport and leisure and tourism.

Show 'double wins'

9.16   The projects found that most participants are not prepared to make behaviour changes solely for environmental reasons. Although the WF, LTR and BC segments need to see personal benefits such as cost savings to be made, other benefits, such as improved wellbeing and better quality, also influenced decision making. These additional benefits need to be widely emphasised.

Remove the get out clause

9.17   If people are reluctant to change their behaviour, they will find as many justifications as possible for inaction. This can range from citing conflicting scientific data as evidence of uncertainty about climate change, to using their lack of awareness of environmental issues as a reason to pass the responsibility for action onto younger generations. If government is to encourage change in those that are currently highly apathetic or reluctant, it needs to – in the words of a researcher at the synthesis review workshop – "remove the get out clause". One by one, government needs to remove the reasons that people give, the barriers identified across the five projects reviewed here, for inaction.

10   Future Research

Further research

10.1   *Longitudinal Research:* Further research is needed on the longer-term impact of interventions, such as the energy audits. It is well-known that behaviour-change interventions can have a temporary effect, inducing temporary change but making them ineffective in the long run. Equally, some policies appear to be making no difference in the short term and over time begin to be part of everyday culture. There is a need for research which exposes subjects to different behaviour-change strategies and compares their long-term behaviour with controls who are not, in order to determine scientifically which interventions are most effective. Ideally, the research proposed below should be conducted longitudinally.

10.2   *The relationships between barriers, behaviours and segments.* It is apparent from the reports that the barriers to behaviour change vary according to both the behaviour goal and the population segment in question. If the Government is to systematically remove the reasons that people give for inaction, a stronger evidence base is required in this area.

10.3   *Currently Constrained.* This segment is the most transient and seems likely to end up later either in BC or CWC/GR. Further research is recommended into what determines which camp CC will eventually fall into.

10.4   *Trade-offs between behaviour goals.* There was more willingness to undertake behaviour change in some areas than in others, even amongst the GR. Participants acknowledged making trade offs between the behaviour goals, for example justifying flying for holidays by saying that they had made changes in their behaviour in other areas, such as recycling. We recommend further research that will investigate these trade offs between behaviours as a whole.

10.5   *Cherished behaviours.* Across the projects, even participants from the most pro-environmental segments, such as GR, were strongly attached to certain behaviours. The reluctance of participants in the leisure and tourism project to give up flying on holiday, and in the food project to give up a high impact diet, showed the difficulty in addressing these 'cherished' behaviours. Further research should be undertaken to identify cherished behaviours and to investigate what can be done to address attachment to these behaviours.

10.6   *Idols, trendsetters and role models.* Some segments have a negative attitude

towards environmentalism (WF, BC, LTR), whilst other segments expressed a more positive attitude towards the environment (GR, CWC). Those with a positive attitude wanted to be perceived as being green, but worried about being seen to be 'too green'. Further research should investigate what influences give people a positive image of pro-environmental behaviours and how these influences can be encouraged. Can pro-environmental idols, trendsetters and role models be identified and assisted in encouraging the adoption of pro-environmental behaviours?

10.7 *Assumptions and misconceptions.* The research revealed a number of unhelpful assumptions and misconceptions about pro-environmental behaviours. Some of these may be overcome with information but others were surprisingly resilient, such as that empty cavity walls 'allow a house to breathe', and that environmentally friendly investment must offer lower returns. Further research should examine such misconceptions and how they might be overcome.

10.8 *Moments of change.* There are several suggestions that the life stage of individuals, and the changes in lifestyle that accompany life changes (for example, having children) can have a significant effect on behaviour. For example, the arrival of children can have a major impact on food purchasing decisions, while elderly participants in the transport project attributed their use of public transport to the free time associated with retirement. Further research is recommended to investigate the impact of the moments of change on behaviour, and whether interventions aimed at individuals going through such changes would be useful.

10.9 *Food waste.* Supermarkets were seen by participants in the food project as playing a vital role in enabling people to change their behaviour, with government providing further guidance and possible regulation. We recommend further research on food waste and the measures that supermarkets, consumers and government could take to reduce it.

10.10 *Children as catalysts of change.* More research should be considered into the extent to which children can act as catalysts of change. Although there has been some work in this area in the past (Uzzell, 1994), the recent increase in Education for Sustainable Development (ESD) (for example, through the teaching of Citizenship and Geography in schools) presents a strong case for revisiting this area.

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